Special Economic Zones

Edited by
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and TOSHIYUKI KONO

Max-Planck-Institut
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Law and Policy Perspectives

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Preface

This book collects the papers presented at a conference on Special Economic Zones held at Kyūshū University in Fukuoka in January 2015. As an instrument of economic policy, Special Economic Zones have attracted little attention in Europe. They have, by contrast, found notable use in various Asian countries, particularly in Japan. They constitute one of the key elements of "Abenomics", the economic policy program endorsed by the current Japanese government under Prime Minister *Shinzō Abe*.

By their very nature Special Economic Zones raise various issues studied under different academic disciplines: economics, political science, law. While their objectives are determined by economics, and their structures, consequences and limits by law, their implementation requires a certain combination and cooperation of political forces, something which has been the object of enquiries in the field of political science. The conference convened scholars from several disciplines who put Special Economic Zones in perspective. The presented papers highlight functions and structures; historical aspects; the political dimension and foreign equivalents of deregulation; the interaction of the creation of Special Economic Zones with constitutional considerations; freedom of contract and competition law; and the effects these zones may have in the areas of labor and innovation.

The conference was held to mark the 20th anniversary of the LL.M. Program in International Economic and Business Law, which was the first English-language study program for law students in Japan and one of the first postgraduate legal programs offered in English in Asia outside the countries using English as an official language. Over the years of its existence, it has attracted hundreds of students from across the globe. The international and business-law orientation of the curriculum has with regular frequency been supplemented by academic conferences such as the one on Special Economic Zones.

The editors have received valuable assistance from several persons both in Germany and Japan: in Hamburg, Shyam Kapila and Michael Friedman provided language editing while Janina Jentz and Sophie Knebel were busy with general editorial assistance; Marcelo Corrales maintained contacts with the Japanese participants in Fukuoka. Their help is gratefully acknowledged.

June 2016

Jürgen Basedow
Toshiyuki Kono

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III. Areas of Law Affected

Abbreviations

AcP	Archiv für die civilistische Praxis
Act of 1971	Act on Special Measures for Economic Stimulation and Development of Okinawa of 1971
AMA	Antimonopoly Act
Art./Arts.	article/articles
BGB	Das Bürgerliche Gesetzbuch
BGBl.	Bundesgesetzblatt
BGH	Bundesgerichtshof
BGHZ	Entscheidungen des Bundesgerichtshofs in Zivilsachen
BIS	business, innovation and skills
BSE	bovine spongiforme enzephalopathy
Ch.	chapter
CDU	Christlich-Demokratische Union
CEU	Central European University
Cong. Rec.	Congressional Record
DFZ	duty free zone
DNotZ	Deutsche Notar-Zeitschrift
E.C.R	European Court Reports
ECJ	European Court of Justice
ed./eds.	editor/editors
edn.	edition
e.g.	exempli gratia
EPA	Economic Partnership Agreement
EPZ	export processing zone
et seq.	et sequens
EU	European Union
FCZ	free commercial zone
FDI	foreign direct investment
FDP	Freie Demokratische Partei
FIAS	Frankfurt Institute for Advanced Studies
FP	free port
FTZ	free trade zone
FY	financial year
GWB	Gesetz gegen Wettbewerbsbeschränkungen
HIV	human immunodeficiency virus

IC	industrial cluster
ICN	International Competition Network
id.	idem
IE	industrial estate
i.e.	id est
ILO	International Labour Organization
INPO	Institute for Nuclear Power Operations
IP	industrial park
IP	intellectual property
IP laws	intellectual property laws
IP rights	intellectual property rights
IPO	initial public offering
IZA	Institute for the Study of Labor
JFTC	Japanese Fair Trade Commission
JILPT	Japan Institute for Labor Policy and Training
K.K.	Kabushiki Kaisha (Corporation)
LCA	Labor Contract Act
LMK	Kommentierte BGH-Rechtsprechung Lindenmaier-Möhring
LSA	Labor Standards Act
MENA	Middle East and North Africa
MHLW	Ministry of Health, Labor and Welfare
MLG	multi-level governance
MLIT	Ministry of Land, Infrastructure, Transport and Tourism
NGO	non-governmental organization
NIRA	National Institute for Research Advancement
NJW	Neue Juristische Wochenschrift
no./nos.	number/numbers
NPO	non-profit organization
NTT East	Nippon Telegraph and Telephone East Corporation
O.J.	Official Journal of the European Union
OECD	Organisation for Economic Co-operation and Development
ORDO	Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft
OVG	Oberverwaltungsgericht
P of M	promotion of manufacturing
p./pp.	page/pages
para./paras.	paragraph/paragraphs
R&D	research and development

SCM	supply chain management
SCP	structure, conduct and performance
Sec.	section
seq.	sequence
SEZ/SEZs	special economic zone/special economic zones
SMRJ	Organization for Small & Medium Enterprises and Regional Innovation, Japan
SNM	strategic niche management
SNS	social network services
SPD	Sozialdemokratische Partei Deutschlands
TA	technology assessment
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
TM	transition management
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
US/USA	United States of America
USAID	United States Agency for International Development
v.	versus
vid. supra	see above
vol.	volume
WIPO	World Intellectual Property Organization
WM	Wertpapier-Mitteilungen Zeitschrift für Wirtschafts- und Bankrecht

Introduction

Boosting the Economy

Special Economic Zones or Nationwide Deregulation?

Jürgen Basedow

In times of economic distress, governments will usually endeavor to stimulate investment, business activities and economic growth. Their measures will often include an increase in public spending designed to augment consumption, in particular through investments for the improvement of the country's infrastructure. Other measures are of a structural nature and purport to catalyze production by private actors. They consist of amendments to existing legislation intended to unleash private initiative and investment and, thus, produce a multiplier effect. To this end, states may subsidize certain activities, reduce and decentralize bureaucratic procedures or deregulate certain markets.

All of these measures can be adopted on a nationwide scale or can be confined to certain regions. In this respect, a comparative glance at economic policy in Europe and Asia discloses a surprising result: while European countries usually adopt measures applying to the whole national territory, so-called special economic zones or free economic zones are very popular in Asia. They designate geographical regions where the economic, labor, tax and other laws in force are more free-market oriented than those in the rest of the respective country.[1]

[1] See the entry Sonderwirtschaftszone in GABLER, Wirtschaftslexikon (16th edn., Wiesbaden 2004) 2684.

The following paper aims to shed light on the situation in some Asian countries, *infra* I., and will try to explain and assess the general trend towards a geographical limitation of economic policy measures, *infra* II. As a counter-model the variations of nationwide deregulatory policies will be outlined, *infra* III. One variant is market deregulation, the foundations of which will subsequently be explained, *infra* IV. Parts V and VI will provide a survey of the deregulation of markets conducted in Germany since the 1980s in the areas of services and labor, respectively.

I. Special Economic Zones in Asian Countries

1. Survey

Over the last 50 years or so, the creation of Special Economic Zones (SEZ) has become a popular device of economic policy in a number of Asian countries. Since the mid-1960s, India has established several so-called Export Processing Zones designed to facilitate the export of Indian products; they are regarded as the precursors of the subsequently established Special Economic Zones in that country.[2] The first and most successful example of a Special Economic Zone is usually considered to be Shenzhen in South China, where an SEZ was established in 1980.[3] Meanwhile SEZs have proliferated and comprehensive legislation has been adopted in India in 2005[4] and also in South Korea in 2003.[5] China, which has equally established several new economic zones including more recently that of Shanghai,[6] appears to proceed on a case-by-case basis.

Japan began to flag out Special Economic Zones during the government of *Junishiro Koizumi* between 2001 and 2006, when hundreds of SEZs were established.[7] The main purpose of the Japanese SEZ programme appears to be a

[2] See the website operated by the Government of India, Ministry of Commerce and Industry on Special Economic Zones in India: <http://sezindia.nic.in/about-introduction.asp>.

[3] MADELAINE MARTINEK, Special Economic Zones in China and WTO: Bleak or Bright Future? Zeitschrift für chinesisches Recht 2014, 41–51 at 41; a short survey is also provided by Y. BU, Einführung in das Recht Chinas (München 2009) 195 et seq.

[4] See the Special Economic Zones Act, 2005 (no. 28 of 23 June 2005), the Gazette of India, part II – section I, no. 31.

[5] Special Act on Designation and Management of Free Economic Zones of 30 December 2002; an English translation of the Act as amended by Act no. 11396 of 21 March 2012 can be found on the website of Korea Legislation Research Institute: <http://elaw.klri.re.kr/eng_service/main.do>; see also the website for Korean Free Economic Zones: <http://www.fez.go.kr.>

[6] See NICOLAUS SCHMIDT, Die neue Freihandelszone in Schanghai, Recht der Internationalen Wirtschaft 2014, Issue 9, I.

[7] "Abenomics – Zoning out – Can Japan finally make Special Economic Zones work?", The Economist, 10 August 2013, where "almost a thousand" SEZs are mentioned.

decentralization of administrative decisions. The local administrations, being closer to the needs of local business, are thought to be more suited to take decisions concerning the legal framework needed for economic success. However, the central government in Tokyo has retained the power to reject proposals for economic law reform made by the local administrations.[8]

According to observers, most of these zones failed, however, because attempts at liberalization made by the local administrations were rejected or watered down by the central government.[9] This may be due to the fear of spillover and free-rider effects inherent in special legal regimes confined to specific locations. The existing SEZs have a remarkable extent and cover: according to informed estimates, they are responsible for nearly 40% of Japan's gross domestic product.[10] Nevertheless, their stimulating impact on the national economy as a whole has so far not met expectations. The current Prime Minister, *Shinzo Abe,* has therefore announced the revitalization of the SEZ programme. He has thereby procured the subject of this conference, which is also closely linked with its venue since *Fukuoka* is one of the more important SEZs.[11]

2. Comparative observations

The laws and regulations enacted in the countries mentioned above deal with a great variety of subjects which differ from country to country and sometimes also from SEZ to SEZ within the same state. No comparative evaluation of the various national laws on SEZs appears to exist.[12] It might be promising for future research to engage in such a comparative law investigation of the matter in view of the effectiveness of the numerous national laws and regulations. However, such an inquiry would presuppose a prior assessment of the general economic, labor and tax laws that are in force in the various countries, since the SEZ legislation is meant to provide, by making a difference to those general laws, an incentive for businesses to intensify economic activities within the respective country in question.

Moreover, such an inquiry would have to take into account the more specific objectives pursued by the national economic policies. While economic growth appears to be a broad enough target shared by all the countries, the states men-

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[8] The objective of decentralization emerges very clearly from the article by HIROKI HARADA, Special Economic Zones as a Governance Tool for Policy Coordination and Innovation, Journal of Japanes Law 31 (2011) 205–221.

[9] See "Abenomics – Zoning Out", *supra* note 7.

[10] "Economic Zones for Japan – Some more special than others", The Economist, 31 March 2014.

[11] *Id.*

[12] Economists have apparently started to compare the economic effects of SEZ legislation and to draw some conclusions with regard to the type of legislation involved, see CHEE KIAN LEONG, Special Economic Zones and Growth in China and India: An empirical investigation, International Economics and Economic Policy 10 (2013) 549–567.

tioned before depart from specific national situations and consequently differ in respect of the particular policy goals pursued. Thus, in India, the promotion of exports, at least initially, was the main goal. The Korean legislation, which contains ample provisions on the status of foreigners and even on the establishment of private schools and hospitals for them, gives evidence of the lawmakers' intention to attract foreigners and foreign investment to the Korean Free Economic Zones.[13] In China, the Shenzhen SEZ rather constituted an experiment within the programme of economic opening initiated under the leadership of DENG *Xiaoping*; the SEZs were intended to pursue reforms "one step ahead" of other regions in the country, paving the way from socialist central planning to a market economy.[14]

The point of departure and the goals of economic reforms in Japan appear to be quite different again. For many decades Japan has been a highly industrialized country, one of the major players in world trade with a high share of foreign capital invested in Japanese business.[15] While it employs, just as the other Asian countries mentioned, the legal vehicle of Special Economic Zones, the objective of its current economic policy is not primarily directed towards the boosting of international trade and of foreign investment, but rather towards a stimulation of economic activities at home using funds that are basically available in the country. There is an ongoing exodus of domestic capital to foreign countries; in 2013 more than 135 billion US-Dollars of Japanese capital were invested abroad while foreign investment in Japan amounted to not more than 2.3 billion US-Dollars.[16] This trend is meant to come to a halt, which can best be achieved by offering attractive investment opportunities in Japan. The promise of a high rate of return to a large extent depends on the opportunities available for further economic activity within the country.

To summarize these observations it can be said that Special Economic Zones may appear to be a common form of economic legislation in Asian countries. But the commonality of the form conceals far-reaching differences: the starting

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[13] The Korean Act, *supra* note 5, contains a whole chapter on the "Improvement of living conditions for foreigners" (Chapter V, Articles 20 to 24-3); it deals with the provision of foreign language services, the use of foreign currency, the establishment of foreign educational and medical institutions, the operation of casinos for foreigners, the supply of construction sites for rental houses for foreigners, and immigration).

[14] See the references provided by MARTINEK, *supra* note 3 at 41.

[15] The market value owned by foreigners at Japanese stock markets has reached the height of 30% in 2013, see: "Abenomics picks up speed – The Battle for Japan", The Economist, 28 June 2014.

[16] United Nations Conference on Trade and Development (UNCTAD), World Investment Report (New York and Geneva 2014) 205. According to Figure 3 on p. XV, Japan is in second place in terms of outflows of foreign direct investment in 2012 and 2013, but according to Figure 2 on page XV, Japan was not within the top 20 countries receiving foreign direct investment in 2012 and 2013.

point designed by the general laws, the policy objectives, and the effects to be expected from the establishment of an SEZ, differ widely from country to country. Nevertheless, the use of the SEZ as a common form is in clear contrast to the situation in Europe. Except for the Russian Federation[17], Special Economic Zones are almost non-existent in European countries. In the Member States of the European Union, deregulatory measures have generally been applied to the whole of the given territory. Former geographical exemptions from economic laws have even been repealed over time. Under the impact of a growing uniform economic law for the whole of the Internal Market of the European Union, there was no reason anymore to maintain such special zones.

Our findings raise the question of why countries in Asia prefer the geographical limitation of economic reform legislation and do not embark upon the road to nationwide amendments.

II. Reasons for the Geographical Confinement of Reform Legislation

As pointed out above, states may pursue very different objectives when implementing Special Economic Zones. Only economic growth and the decentralization of administrative decisions could at best be considered common denominators; the latter may result from the particular strength of central government in some countries, while it may also be a reaction to the factual weakness of central government – as compared with local or regional entities – in others.

Apart from these goals, there are considerable divergences. Where a country, such as China back in 1980, contemplated a fundamental change of its economic order it may have been a command of prudence to start in a local or regional setting what at the time appeared to be a revolutionary innovation, and to cautiously test the new ideas on a trial-and-error basis.

There are also good reasons for a geographical limitation of economic legislation providing incentives to business where a government aims at the development of a specific town or region. Thus, the establishment of a Free Economic Zone at Incheon in Korea pursued the target of creating what has been called a "knowledge location", i.e. a new center of higher education and knowledge-based industry.[18] The local development strategy was meant to relieve the bur-

[17] For Russia see A. KOMISSAROV, Die neue russische Gesetzgebung über Sonderwirtschaftszonen, in: Boguslawskij/Trunck (eds.), Rechtslage von Auslandsinvestititionen in Transformationsstaaten – Festgabe für *Wolfgang Seiffert* zum 80. Geburtstag (Berlin 2006) 341–352.

[18] See W. VAN WINDEN/L. DE CARVALHO/E. VAN TUIJL/J. VAN HAAREN/L. VAN DEN BERG, Creating Knowledge Locations in Cities: Innovation and Integration Challenges,

den on the nearby mega-city of Seoul by the creation of a new center that would attract people and capital in the long run.

Of a different nature is the objective of the Japanese government to stimulate the national economy as a whole. This goal does not seem to be confined to particular parts of the national territory and it is therefore difficult to understand why the country uses policy tools that are selective in a geographical sense. In fact, the goals set by the present government seem to be much more in line with the nationwide objectives pursued by deregulatory policies in Europe from the late 1980s onwards. If the present Japanese government aims at a deregulation of sectors such as health care, farming and the labor market,[19] why should the implementing measures not apply to the whole country?

The reason, instead of being rooted in the substance of the respective area of the law, may rather be a political one: some measures are said to be so controversial that politicians may believe they are more likely to be adopted if confined to certain regions where they can be tested before being extended nationwide at a later stage.[20] But, if political caution is the reason, how can the actual selection of the SEZs be reconciled with this approach? The Japanese government has included in the list of SEZs regions such as Greater Tokyo, Kansai, Narita and Fukuoka,[21] which are not only important business centers with a high share of the country's gross domestic product; they are also likely centers of political influence and debate in the country. Thus, the political opposition aroused in these regions against local deregulatory measures may be more determined and more forceful than elsewhere. Moreover, the result of this selection could be quite the opposite of what the proponents of the new SEZ programme expect. Vested interests will resist such local deregulation from as early as the experimental phase and they may be inclined to lobby for the exercise of the remaining supervisory powers of the central government in order to produce a leverage effect diluting intended policy reforms.

The economic assessment of Special Economic Zones is not very favorable to this policy tool either. In a comparative inquiry into the SEZ programmes of China and India, the author concluded "that increasing the number of SEZs has negligible impact on economic growth. Taken together, these results suggest that what contributes to greater growth is greater scale of liberalization, rather than increasing the number of SEZs".[22] Another inquiry focusing on the slowdown of growth of the economy in Japan reaches similar conclusions. The authors identify three major reasons for the Japanese stagnation; one of them is

EURICUR – Department of Regional, Port and Transport Economics, ERASMUS University (Rotterdam 2010) 94–126.

[19] See "Abenomics picks up speed – The Battle for Japan", *supra* note 15.

[20] "Japan's Economy – Out of the Zone", The Economist, 5 April 2014.

[21] See the list in *id.*

[22] C. K. LEONG, *supra* note 12.

the lack of deregulation, in particular in the non-manufacturing industries. They conclude: "In the non-manufacturing sector, the industries that had the most deregulation grew fastest. On average starting in the late 1990s regulatory barriers to new entrants were actually increased."[23]

These inquiries raise some doubts about the SEZ approach in general and the Japanese reforms in particular. Would a nationwide deregulation policy not be more promising? Japan has apparently tested such a structural policy reform only in few sectors in the years after 1998: in the financial markets,[24] and in the labor market where attempts were made to liberalize the posting of temporary workers and to deregulate the limitation in time of employment contracts.[25] In view of the ongoing policy debate in Japan, it may be useful to take a closer look at the development of deregulation in Europe and in particular in Germany, where a comprehensive and nationwide deregulation policy was pursued from the beginning of the 1980s.

III. Variants of Deregulation in Europe and Germany

The concept of deregulation as employed in Western countries is not a single, coherent one. On closer inspection it essentially relates to three very different policy designs, which have one thing in common: they are meant to encourage private business activities.[26] But they address very different impediments to such activities.

The first concerns the review and where possible the repeal of provisions imposing unjustified or exorbitant costs on businesses; such cost-generating

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[23] T. HOSHI/A. KASHYAP, Why did Japan stop growing? NIRA Report of 21 January 2011, 35. The report can be accessed on the website of the National Institute for Research Advancement: <http://www.nira.or.jp/english/papers/index.html →NIRA Reports →Why did Japan stop growing?>. Other major reasons of stagnation identified by the authors are a tight monetary policy and the tendency of banks to keep heavily indebted "zombie" firms alive by granting additional credit.

[24] See T. KUBOTA, Regulation of Banking Services: The Japanese Perspective, in: Basedow/Baum/Kanda/Kono (eds.), Economic Regulation and Competition – Regulation of Services in the EU, Germany and Japan (The Hague 2002) 75–96 at 80 et seq.; H. KANDA, Regulation of Exchanges and Investment Services: A Japanese Perspective, *ibid*., 151–163 at 156 et seq.; see also H. ODA, Japanese Law (2nd edn., Oxford 1999) 32, 268 et seq., 290 et seq.

[25] S. NISHITANI/H.-P. MARUTSCHKE, Arbeitsrecht, Sozialversicherung Geschäftstätigkeit von Ausländern in Japan, in: Baum/Bälz (eds.), Handbuch Japanisches Handels- und Wirtschaftsrecht (Köln 2011) 403–459 at 407. The Japanese labor law in force prior to these cautious reforms is outlined in ODA, *supra* note 24, 354 et seq.

[26] B. MOLITOR, Deregulierung in Europa (Tübingen 1996) 7 (Walter Eucken Institut, Vorträge und Aufsätze, no. 150); MOLITOR, a former assistant secretary of state in the Federal Ministry of Economic Affairs, refers to an additional meaning, i.e. the reform of legislative procedures in order to allow for early input of proposals by citizens and business.

provisions are usually adopted for non-economic reasons: e.g. greater safety, the promotion of public health, the protection of the environment, or the preservation of historical landmarks or other cultural property. The implementation of this policy requires a careful analysis of the historical rationales of the various regulations on a case-by-case basis and a balancing of the conflicting objectives and costs. Most regulations are initially adopted for plausible reasons; sometimes, however, their effects or later changes in the social or economic environment deprive those provisions of their *raison d'être* or make them appear to be disproportionate.[27]

A second variant of deregulation relates to the simplification of administrative procedures, sometimes also designated as a reduction of bureaucracy. It targets slow or complicated planning and authorization procedures, the decentralization of administrative decisions, reporting duties for statistical purposes, bookkeeping obligations, the periods for the retention of records and the like. Such obligations often impose a particular burden on start-ups and other small and medium enterprises.[28] Bureaucracies tend to extend existing obligations of the kind mentioned above, thereby increasing the burden for businesses. Therefore, the reduction of bureaucracy nowadays is considered a permanent task of governmental economic policy. After attempts to solve the problem by independent *ad hoc* advisory committees in Germany[29] and the European Union[30] since the 1980s, Germany[31] has created, in 2006, a permanent body called the

[27] MOLITOR, *supra* note 26, p. 15–16 refers to the Directive 89/392/CEE providing for regulations relating to machinery which would for example have required about 300,000 butchers in Germany to adjust their meat slicers at a total cost of 150 to 300 million Euros.

[28] MOLITOR, *supra* note 26, p. 15 cites a Dutch inquiry which concluded that the average cost per employee in the Netherlands in 1993 amounted to 3,500 Euros in small undertakings with less than 10 employees, but only 600 Euros per employee in larger undertakings with a workforce exceeding 100 employees. For a similar and very recent political assessment see "Gabriel bläst zum Kampf gegen Bürokratie", Frankfurter Allgemeine Zeitung, 4 November 2014, 15.

[29] See Bundesministerium des Inneren (ed.), Unabhängige Kommission für Rechts- und Verwaltungsvereinfachung des Bundes 1983–1987 – Eine Zwischenbilanz (Bonn 1987); Bundesministerium des Innern (ed.), Unnötiger Aufwand durch Vorschriften? Bericht und Empfehlungen der Unabhängigen Kommission für Rechts- und Verwaltungsvereinfachung zur Entlastung der Unternehmen, Bürger und Verwaltungen von administrativen Pflichten (Bonn 1994). See also MOLITOR, *supra* note 26, 25–26.

[30] See Commission Decision (2007/623/EC) of 31 August 2007 setting up the High Level Group of Independent Stakeholders on Administrative Burdens, Official Journal of the European Union (O.J.) 2007 L 253/40; Commission Decision (2012/C 382/08) of 5 December 2012 amending Commission Decision 2007/623/EC setting up the High Level Group of Independent Stakeholders on Administrative Burdens, O.J. 2012 C 382/9; the mandate of the Group expired in October 2014 and has not been prolonged.

[31] Gesetz zur Einsetzung eines Nationalen Normenkontrollrats of 14 August 2006, Bundesgesetzblatt I, 1866 as amended; which requires the newly established body to assess the costs generated by compliance with new regulations. It has to prepare confidential assess-

Normenkontrollrat (norms control council) which submits proposals for the reduction of bureaucracy at regular intervals.

The third variant of deregulation aims at the liberalization of markets, in particular the abrogation of laws and regulations which limit market access and market exit, and which prescribe prices, the quality of products and the quantities of production. Contrary to the other two variants, the point of departure of this approach is not the structure and operation of state bureaucracies but the functioning of markets, i.e. the responsiveness of offer and demand for the price mechanism. This is deregulation proper and will be further discussed below. But all three variants have an impact on private business activities and are intended to allow private initiative to unfold more easily. All three overlap to a certain extent. They can and should be kept separate, however.

IV. Market Deregulation – Foundations

Markets can provide beneficial effects for economic welfare because an imbalance of supply and demand will lead to an adjustment of prices, which sends signals to both sides of the market. Where demand exceeds supply a rise in prices will make investment in supply lucrative and on the other side generate the willingness to reduce demand or to look for substitutes. Where supply exceeds demand prices will decline, thereby making production less profitable, sometimes down to the point of market exit; on the other side, a decline in price will stimulate additional demand. A continuous adjustment of supply and demand follows from the role of market prices as indicators of the scarcity of the products in question. This operation of the market depends on a number of economic peculiarities, and on basic market freedoms ensured by the legal system (in particular through the absence of market regulation).

1. Constitutive and restrictive regulations

Not all regulations are detrimental to the operation of markets; some are even necessary. Except for barter (i.e. the immediate exchange of goods between persons present on the same spot), market operations even need regulation: rules on proprietary rights and the binding force of contracts may be considered constitutive of markets. On the other hand, there are numerous laws that hamper the operation of markets. They may restrict market access: by the requirement of personal qualifications, by stipulating a certificate of public conven-

ments for the legislature with regard to proposed legislation and submits an annual report to the Federal Chancellor. See the website: <www.normenkontrollrat.bund.de> where for example the 2013 Annual Report is published – also in English – under the heading "Transparency of Costs Improved – Focus on further Burden Reduction".

ience and necessity to be issued by an administrative authority, by the establishment of maximum quantities, for example. They may also make market exit more difficult: by excluding insolvency for certain categories of businesses or prescribing a minimum level of supply, thereby prohibiting a gradual phasing out of certain services. Regulations on prices are not uncommon either, specifying fixed prices, maximum prices, or price margins. The myriad of such regulations existing in all countries has the effect of rendering the adjustment of supply and demand more difficult.

Market regulations often have historical reasons, and some have economic reasons rooted in the particular features of the respective market, which are labelled, in the theory of competition, as market failure or market imperfection. They include the occurrence of external effects which are not taken into account by the parties to any transaction (e.g. the damage to the environment); the existence of natural monopolies linked to high fixed costs that have to be incurred before the production of the first unit (e.g. the construction of a railway line); the asymmetry of information and motivation as between the parties to a transaction (e.g. between a trader and a consumer); and the opportunistic behavior which is common in long-term transactions such as labor relations. Market imperfections of this kind require some regulatory measures designed to ensure the positive overall welfare effects of a transaction.[32]

In addition, there are also reasons for regulation that emerge from policies and values outside the economic field and which conflict with economic targets. For example, many regulations in the medical and pharmaceutical sector are due to considerations of public health, and the closing of shops on Sundays in many European countries takes account of the religious commands of Christianity.

2. *Consequences of (de-)regulation*

a) Repeal of outdated regulations. – The flexibilization of markets in the interest of increased welfare and the reasons for regulation listed above require a balancing exercise for each single market. Sometimes the result is the complete repeal of a regulation; this may be the case where the historical reasons for its enactment have disappeared. An example are the former restrictions on long-distance coach lines in Germany. They were essentially prohibited after World War I when Germany had to pay reparations to the victorious Allied Powers and expected to receive funds for that purpose from the monopoly rents earned by the German railway company; the government therefore protected the railway against competition from road transport.[33] Although the Allies did not

[32] For a broader treatment of these justifications of market regulation, see J. BASEDOW, Economic Regulation in Market Economies, in: Basedow et al. (eds.), *supra* note 24, 1–24 at 6–11.

[33] For the background see J. BASEDOW, Wettbewerb auf den Verkehrsmärkten (Heidelberg 1989) 54 et seq., 61, 69.

insist on the payment of reparations after World War II, the restriction was in place for 90 years before Germany repealed it in 2012.[34]

b) Search for less restrictive alternatives. – The result of the balancing exercise is not necessarily a confirmation of existing regulations or their complete repeal. As shown by a number of examples, it may also be the search for a less restrictive alternative. One example is the former monopoly in the telephone sector and mail delivery market which came down to a prohibition of market access for all interested companies. It was initially intended to grant financial protection to a new technology and to ensure a nationwide provision of mail delivery services even in sparsely populated regions. The complete elimination of the monopoly might have jeopardized the latter objective; the market entrants could have indulged in cherry-picking, leaving the unattractive regions without an appropriate service. The solution implemented by the German legislature lifted the restrictions on access to the market, but at the same time allowed the supervisory authority to impose an obligation on all market entrants to provide so-called universal services, i.e. basic mail delivery services to all clients in the country.[35]

A similar example of downsizing an existing regulation in the interest of more flexibility can be seen in the area of health care insurance. Before deregulation the supervisory authority had to approve the general policy conditions before they could be used in the market. The authority made use of its powers *inter alia* by compelling insurers to offer cover to their policyholders' newborn children, regardless of whether they were healthy, sick or handicapped. Deregulation put an end to this practice, and insurers are now allowed to employ many policy conditions without prior approval, but subject to the judicial oversight of standard conditions of contract in civil courts. In order to maintain protection for sick and handicapped children, however, the legislature put insurers under a duty, laid down in the statute on insurance contract law, to offer cover for their policyholders' children.[36]

Thus the regulation no longer applies across the board, but is more focused on the needs of a specific group while allowing for more flexibility where that group is not involved. Moreover, that regulation has been toned down from prior administrative control to mandatory private law.

c) Geographic scope of markets and regulations. – Because of particular economic characteristics, some markets are local or regional; examples can be found in services such as catering or in the sale of liquid concrete. In both sec-

[34] See Gesetz zur Änderung personenbeförderungsrechtlicher Vorschriften of 14 December 2012, Bundesgesetzblatt (BGBl.) I, 2598; see, in particular, nos. 5 and 16 containing the amendments of § 13 (2) and the new § 42a of the Personenbeförderungsgesetz.

[35] See §§ 5 et seq. and 11 et seq. of the Postgesetz of 22 December 1997, BGBl. I, 3294 as amended.

[36] The rule is now contained in § 198 of the Versicherungsvertragsgesetz of 23 November 2007, BGBl. I, 2631 as amended.

tors long-distance transportation is excluded for economic reasons; the costs of keeping food fresh and concrete liquid are simply too high. In the course of modern developments many markets have been enlarged to a national or even international size.

The market's size affects the geographical scope of market regulation. Local markets can effectively be ordered by local regulations (e.g. those of a Special Economic Zone or – vice versa – those of the remaining part of the country that could also be regarded as a Special Economic Zone with a reversed approach to regulation). Where from an economic perspective markets are much larger, a local regulation will however remain ineffective unless it is protected by appropriate additional regulations (customs, import quota, non-tariff barriers) against competition from outside, i.e. from other areas not subject to the local regulation. The Japanese SEZ programme in part addresses markets such as health care and the labor market, which extend far beyond the local boundaries of the single SEZ. This appears questionable since it leads to the co-existence of, and arbitrage between, different market regulations within the same geographical market.

V. Market Deregulation – Implementation in Germany

The implementation of deregulation usually encounters determined resistance from incumbents of the targeted market. They expect more intense competition and fear a decline in profits. It is essential to take account of that opposition from the very beginning.

Deregulation started in the US in the late 1970s; the first major steps concerned domestic air transport and motor carriers.[37] In Europe, the United Kingdom took the lead in the field of road transport; further steps followed under Prime Minister *Margaret Thatcher* in the early 1980s.[38] The German government embarked on the road towards deregulation shortly after the election of Chancellor *Helmut Kohl* by the new coalition of Christian Democrats (CDU) and Liberals (FDP) in 1982. In fact, the Minister of Economic Affairs of the previous government of Social Democrats (SPD) and Liberals (FDP) Count *Lambsdorff* had fatally undermined that coalition when he published a paper entitled "Concept for a Policy to Overcome Weak Growth and to Combat Un-

[37] Airline Deregulation Act, Public Law 95-504 of 24 October 1978, 92 Statutes at large 1705; Motor Carrier Act, Public Law 96-296 of 1 July 1980, 94 Statutes at large, 793; further references in J. BASEDOW, Common Carriers – Continuity and Disintegration in United States Transportation Law, Transportation Law Journal 13 (1983) 1–42 (I) and 159–188 (II) at 169 et seq.

[38] The deregulation of road transport was implemented as early as 1970 under the Transport Act 1968 Ch. 73; see BASEDOW, *supra* note 33, 240 et seq.; for domestic air transport in the United Kingdom see *id.*, 204.

employment", a manifesto for a policy of deregulation.[39] This turned out to be unacceptable for the Social Democrats, and the Liberals left the government. In the successor government several liberal Ministers of Economic Affairs pursued the deregulation policy.

After encouraging academic activities in the early years after the change of government,[40] the cabinet, in 1988, appointed a committee of ten experts – four academics and six practitioners – to analyze the macroeconomic costs caused by market regulation and elaborate proposals for deregulation. According to the mandate, the Deregulation Committee could freely choose the subjects it wanted to deal with. It was expected to take into account foreign experience with deregulation and to assess the possibility of a transfer of foreign deregulatory models to the German context.[41]

Three years later, in 1991, the Deregulation Committee submitted its final report to the government.[42] It dealt with seven sectors and a large number of sub-sectors: insurance; transport including railways, road transport of both goods and passengers, taxis, internal waterways and maritime shipping, and carriage by air; the supply of electric power; technical inspection and monitoring; legal and economic advice including the services of lawyers and notaries, tax consultants and accountants; the various trades of craftsmen; and the labor market. The variety of subjects reflects the basic idea inspiring the work of the Committee: the greater the number of sectors of the economy affected the greater is the prospect of political success, because all stakeholders will expect not only to lose, but also to win through regulation and greater competition. With this perspective, almost 100 proposals for deregulation measures were suggested. Some of them, such as those relating to the supply of electricity, aimed at a price decrease for the manufacturing industry; others, such as the deregulation of taxis, coach lines and crafts, were expected to immediately create new jobs.

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[39] O. GRAF LAMBSDORFF, Konzept für eine Politik zur Überwindung der Wachstumsschwäche und zur Bekämpfung der Arbeitslosigkeit, 9 September 1982. The manifesto is known as the "Lambsdorff-Papier" and ranked among the most important documents of German 20th century history; it can be accessed at: <http://www.1000dokumente.de/index.html →100(0) Schlüsseldokumente zur deutschen Geschichte im 20. Jahrhundert> where a chronological list of the documents will appear.

[40] Results of those activities are, among others, R. SOLTWEDEL et al., Deregulierungspotentiale in der Bundesrepublik (Tübingen 1986); M. KRAKOWSKI (ed.), Regulierung in der Bundesrepublik Deutschland (Hamburg 1988).

[41] See DEREGULIERUNGSKOMMISSION – *Unabhängige Expertenkommission zum Abbau marktwidriger Regulierungen*, Marktöffnung und Wettbewerb (Stuttgart 1991) V (preface) with the mandate, and 187 with a list of the members. The author of this article was the only professor of law among the members of the Committee.

[42] See the previous note. An English translation of the report was prepared by the Ministry of Economic Affairs, but never published; it is on file with the author.

The next step on the road leading to deregulation was the screening of the Committee proposals by a small working group of influential members of the *Bundestag*, the German parliament, representing the coalition parties. It was only after the approval of the proposals by that group that the competent departments of the government were instructed to draft legislation for the implementation of the proposals.

Throughout the various stages the deregulation policy received much tail wind from the European Union. In the political arena proposals made by the European Commission for the establishment of the Internal Market pushed in the same direction as the deregulation policy. The opening of national markets for suppliers from other Member States in fact required some deregulation at home. Moreover, from the mid-1970s, the European Court of Justice turned to a new interpretation of the basic freedoms enshrined in the Rome Treaty.[43] In particular, the free movement of goods and the freedom to provide services were now understood as allowing a seller or supplier of services to offer its products in other Member States in accordance with the law of its country of origin.[44] Only mandatory requirements of the public interest could entitle a host state to interfere with the country-of-origin rule – again an important backing of deregulation in the host country. These political and legal pressures from outside are peculiar to the European Union. Other countries, such as Japan, would have to compensate for their absence through an autonomous will to increase competition on the domestic market by admitting foreign suppliers.

Within five years of the presentation of its final report, more than half of the Deregulation Committee's proposals were actually implemented.[45] The regulatory changes of this early phase concerned insurance and transport markets in particular, but also technical inspection and monitoring. In more recent years, additional liberalization measures have been adopted with regard to the supply of electric power, legal services and various trades of craftsmen. Even the liberalization of coach lines in 2012 was inspired by the Committee's 20-year-old report.[46] The policy of deregulation, initiated in 1982, achieved a remarkable number of its goals. However, its success cannot be measured by the rate of

[43] Treaty on the Establishment of the European Economic Community, agreed at Rome on 25 March 1957, United Nations Treaty Series vol. 298, p. 14; the current version of the version adopted at Lisbon in 2007 consists of two treaties: Treaty on European Union (TEU), consolidated version in Official Journal of the European Union (O.J.) 2012 C 326/13, and the Treaty on the Functioning of the European Union (TFEU), consolidated version in O.J. 2012 C 326/47.

[44] See for the free movement of goods (now arts. 34 and 35 TFEU) ECJ 20 February 1979 – Case 120/78 *(REWE-Zentrale AG v. Bundesmonopolverwaltung für Branntwein),* [1979] ECR 649 para. 14; for the freedom to provide services (now art. 56 TFEU) see ECJ 3 December 1974 – Case 33/74 *(van Binsbergen v. Bedrijfsvereniging voor de Metaalnijverheid),* [1974] ECR 1299 para. 12: "public good"; ECJ 25 July 1991 – Case C-76/90 *(Säger v. Dennemeyer),* [1991] ECR I-4239 para. 15: "imperative reasons relating to the public interest."

[45] MOLITOR, *supra* note 26, 26.

economic growth since the development of Germany's gross domestic product has been overshadowed by Germany's reunification in 1990.[47] The implementation of the deregulatory policy required considerable staying power. Until its very end in 1998 (i.e. over a period of 16 years), the coalition of Christian Democrats (CDU) and Liberals (FDP) kept on transposing the ideas of deregulation.

VI. Flexibilization of the Labor Market

Contrary to the other sectors, the rigid regulation of labor markets in Germany resisted any attempts at flexibilization during the 1990s; hardly any proposal of the Deregulation Committee was implemented. Unemployment kept rising to almost 5 million and the rate bypassed the threshold of 10% of the total workforce after the turn of the new millennium.[48]

In 1998 a new government under the social democratic Chancellor *Gerhard Schröder* took power. In 2002, it finally put the problem on its agenda and charged another expert group, the so-called *Hartz* Committee (named after its chairman *Peter Hartz*) to submit proposals for the reorganization and flexibilization of the labor market.

Within a period of six months the *Hartz* Committee finalized its report and suggested a comprehensive package of measures affecting all segments of the labor market. The proposals concerned retirement programs, the promotion of self-employment and part-time jobs, public unemployment insurance, social security payments and the reorganization and operation of employment agencies.[49] The reform cannot be explained here in detail. It was implemented in not less than four long statutes with hundreds of legislative amendments.[50] Next to

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[46] See *supra* notes 33 and 34; see proposition 28 of the Deregulation Committee, DEREGULIERUNGSKOMMISSION, *supra* note 41, 53 advocating an experimental liberalization of specific coach lines as a precursor of the complete deregulation to be adopted later on.

[47] The growth rate of the West German gross domestic product, as compared with the previous year, was boosted to 3.9% in 1989 when the Berlin Wall fell, and even to 5.3% and 5.1% in 1990 and 1991, see STATISTISCHES BUNDESAMT (ed.), Statistisches Jahrbuch Deutschland 2014, 321. Such rates have not since been achieved.

[48] The peak of unemployment was reached in 2005 when 4.571 million people were registered as unemployed. Given the total workforce of 43.441 million persons in that year, the unemployment rate was 10.5%; see the data in Statistisches Jahrbuch Deutschland 2014, *supra* note 47, 346.

[49] "Moderne Dienstleistungen am Arbeitsmarkt" (Modern Services on the Labor Market). The report is available on the website of the Federal Ministry for Labor and Social Matters: <http://www.bmas.de → Service, → Publikationen, → Moderne-Dienstleistungen-am-Arbeitsmarkt>. On that site the summary is translated into English.

[50] Erstes, Zweites, Drittes und Viertes Gesetz für moderne Dienstleistungen am Arbeitsmarkt of 23 December 2002, BGBl. I, 4607; of 23 December 2002, BGBl. I, 4621; of 23 December 2003, BGBl. I, 2848; of 23 December 2003, BGBl. I, 2954.

increased flexibility, the reform was intended to reduce workers' incentives to be registered as unemployed and receive, in that capacity, some kind of public support. Moreover, it pursued the objective of helping young people to get their first job and of reducing long-term unemployment of older workers.

With regard to the goal of greater flexibility in contracting, two measures should be mentioned. The posting of workers by temporary staffing firms to employers in need of additional manpower was further liberalized. It is now lawful for a period of up to one year. The posting of workers by an employer located in another Member State of the European Union for the purposes of a consortium agreed upon with a German employer is even completely exempted from the mandatory regulations of the statute.[51] This opens the German labor market to a certain extent for low-cost labor from other Member States. A further measure intended to reduce the risk for employers of hiring long-term unemployed workers above the age of 52 is the permission to enter into employment contracts of a limited period of time.[52]

The *Hartz* reforms have made substantial contributions to the reduction of unemployment in Germany, which is only little more than half of what it was before those reforms were implemented.[53] It should be noted that the new jobs have been created in an uneven manner in the various sectors: ever since the 1990s the number of new jobs in services has constantly been growing while fewer and fewer people are working in manufacturing and agriculture.[54] This observation connects the labor market reform to the deregulation of various services sectors in the 1990s. While the latter has increased the capacity of the services sectors to absorb more and more workers, the former has shaped the conditions of the labor market such as to encourage unemployed persons to accept jobs.

Whether the current trend will continue is an open question. The present German government, composed of Christian Democrats and Social Democrats, favors a certain reregulation of the labor market (as can be inferred from the recent

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[51] See Art. 6 of the first implementing statute, previous fn., BGBl. 2002 I, 4607, 4617.

[52] See § 14 (3) of the Gesetz über Teilzeitarbeit und befristete Arbeitsverträge of 21 December 2000, BGBl. I, 1966; art. 7 of the first implementing statute, *supra* note 47, BGBl. 2002 I, 4607, 4619 had lowered the relevant age from 58 to 52. The European Court of Justice had held that this rule is incompatible with EU law, see ECJ 22 November 2005 – Case C-144/04 *(Mangold v. Helm),* [2005] ECR I-10013; thereafter the German legislature, while keeping the age threshold of 52 years, added the requirement that the person in question must have been unemployed for a period of at least four months preceding the new employment.

[53] For the year 2013 only 2.770 million persons were registered as unemployed out of a total workforce of 44.053 million people; thus the unemployment rate was down to 6.3%, see the data in Statistisches Jahrbuch Deutschland 2014, *supra* note 47, 346. In November 2014 the total number of unemployed persons had further declined to 2.717 million, see "Erstmals arbeiten mehr als 43 Millionen", Frankfurter Allgemeine Zeitung, 28 November 2014, 19–20.

[54] See Statistisches Jahrbuch Deutschland 2014, *supra* note 47, 348.

introduction of mandatory minimum wages).[55] This may curtail the absorption capacity of some segments of the labor market. It also shows that deregulation in the labor market is a continuous task which cannot be regarded as accomplished once some deregulatory measures have been implemented. The situation is similar to that in other markets: there are constant, successful efforts to renew restrictions on the operation of market forces by regulation.[56] Consequently, deregulation efforts are necessary from time to time to reduce regulation.

VII. Conclusion

Japanese governments have concentrated their efforts to stimulate economic activity on the establishment of Special Economic Zones. As far as the formal use of this policy tool is concerned this is in line with the approaches taken in other Asian countries. The SEZ policy appears adequate where governments intend to develop specific locations, in particular by subsidizing investments. From a more general perspective, the economic assessment of the SEZ tool is, however, not very positive. Moreover, it is doubtful whether it makes sense to pursue nationwide economic objectives through policy tools confined to specific areas of the country; the expected contagion of other areas is far from ensured. Finally, flagging out a major part of the country as a SEZ is difficult to reconcile with the goal of uniform living conditions.

A counter-model that is however not exclusive of the SEZ program is constituted by a nationwide deregulatory policy targeting existing regulations in a variety of markets, in particular for services. Such a policy would facilitate competition and absorb unemployed workers. A comprehensive reform of the labor market could simultaneously encourage unemployed workers to accept those new jobs. Deregulation splits up into several variations. Market deregulation as discussed in this paper requires a careful analysis of the specific sectors and may often lead to less restrictive alternatives, and not only to a simple repeal of existing regulations. Given the tendency of economic policy-makers towards more regulation, deregulation appears to be a task that is here to stay.

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[55] Gesetz zur Regelung eines allgemeinen Mindestlohns of 11 August 2014, BGBl. I, 1348.

[56] The Directorate General for Trade of the European Commission monitors these efforts in countries which are key trading partners of the EU; in its Eleventh Report on Potentially Trade-Restrictive Measures it has recently identified 170 new potentially trade-restrictive measures adopted in a twelve-month period while only twelve previously imposed measures were repealed; the report is available on the website of the Directorate General for Trade: <http://www.ec.europa.eu/trade/policy/policy-making/index_en.htm, → Trade policy and you, → News archive, → Press release of 17 November 2014> with a link to the full report; see also "Protektionismus schreitet voran", Frankfurter Allgemeine Zeitung, 18 November 2014, 18.

I. Foundations

Historical Perspective on Special Economic Zones in Japan

Ren Yatsunami

I. Introduction

As one of the possible measures to stimulate economic growth, a country may designate a certain area as a special economic zone, in which different rules – generally more liberal rules compared to the national rules – in the field of economic regulation or taxation apply. As it is a measure concerning a geographically confined area, the direct and short-run impact of the designation would be observed most notably on the local economy of the designated area. However, the expected merits in setting up a special economic zone are not confined merely to the impact giving a boost to the regional economy. In fact, there is a trend in several countries to characterize a special economic zone as a tool for stimulating the national economy. Japan is one of the noteworthy examples of such countries.[1]

Since the beginning of the 21st century, the Japanese government has been actively establishing special economic zones with the major aim of

[1] H. HARADA, Special Economic Zones as a Governance Tool for Policy Coordination and Innovation, Journal of Japanese Law 31 (2011) 211–212, 219.

using them as test beds for developing pilot programs on deregulation or exceptional tax treatment that may contribute to nationwide policy reform. Nevertheless, if we look back across time, it becomes clear that the government in the 20th century had been prudently avoiding policy debates on the possibility of introducing special economic zones in Japan, with the exception of the case of Okinawa.

This chapter aims to clarify how the Japanese government developed a variety of special economic zones for the purpose of stimulating the national economy, with an attempt to examine when and how the government's attitude toward the policy debates on special economic zones switched from a passive to an active approach.

II. The Rise of Special Economic Zones in Japan

Speaking of the history of special economic zones after the end of World War II, the world's first free trade zone was the one established in 1959 adjacent to the Shannon Airport in Ireland.[2] Following the case of Shannon, a wide variety of special economic zones were developed from the mid-1960s.[3] As a famous example among developing regions, Kandla in India is known as the earliest export processing zone in Asia, being designated in 1965.[4] In addition, India's Special Economic Zones Policy from April 2000 received remarkable attention.[5]

Such policies of introducing special economic zones became popular in Japan's neighbor countries too. Taiwan also launched its first export processing zone in 1965, and new zones were added in 1969 and 1971. South Korea established the Masan Free Export Zone in 1971. In this period, similar policies were adopted also in Malaysia, the Philippines, Thailand, and Singapore. In China, four regions, including Shenzhen, Zhuhai and Shantou in the Guangdong Province and Xiamen in the Fujian Province, were assigned as special economic zones in 1979.[6]

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[2] J. WHITE, Fostering Innovation in Developing Economies through SEZs, in: Farole/Akinci (eds.), Special Economic Zones: Progress, Emerging Challenges, and Future Directions (Washington 2011) 186.

[3] T. FAROLE, Special Economic Zones in Africa: Comparing Performance and Learning form Global Experience (Washington 2011) 35.

[4] M. MURAYAMA/N. YOKOTA, Revisiting Labour and Gender Issues in Export Processing Zones: The Cases of South Korea, Bangladesh and India, IDE Discussion Paper No. 174 (2008) 22; available at <http://www.ide.go.jp/English/Publish/Download/Dp/pdf/174.pdf>.

[5] K. R. GUPTA, Special Economic Zones, in: Gupta (ed.), Special Economic Zones: Issues, Laws and Procedures (New Delhi 2008) 3.

The increased number of special economic zones in Japan's neighbor countries has led to emerging debates concerning topics on special economic zones in the Japanese Diet. Nevertheless, as will be examined in this section, in the latter part of the 20th century, a traditional principle of pursuing economic development without regional differences, namely the principle of "well-balanced land development", prevented the government from introducing special economic zones in Japan, with the exception of Okinawa.

This section reviews the caution and hesitation shown by the Japanese government in the introduction of special economic zones in the late 20th century (II.1.a), and it also reviews the process in which Japan, in that period, exceptionally accepted having a special economic zone policy for Okinawa (II.1.b). Then, from a historical perspective, this section attempts to identify the reason why Japan had been unwilling to set up special economic zones in that period (II.2.a) and the reason why the government could deal with Okinawa differently in the same period (II.2.b).

1. The government's view on Special Economic Zones in the past

a) Policy debates on Special Economic Zones in the late 20th century

In records of debates in the Japanese Diet, the words "special economic zone" first appear in 1980 as a reaction to the assignment of special economic zones in China in 1979.[7] As one of the earliest examples, in the meeting of the Committee on Commerce and Industry on 28 March 1980, Hisao Ishino, a member of the Social Party of Japan, addressed a question to Yoshitake Sasaki, the then Minister for Trade and Industry, asking his opinion about the Japanese government's policy of promoting trade with those special economic zones in China.[8] As to related debates in the Diet in 1980s, the focus had been put on the government's policy on commerce and industry in relation to special economic zones in China, and any discussion on the possibility of introducing special economic zones in Japan could not be found in its published minutes. However, from the 1990s forward, some ideas on introducing special economic zones in Japan began to be discussed.

One of the motivating incidents was the Great Hanshin-Awaji earthquake that struck on 17 January 1995.[9] At that time, some assembly mem-

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[6] See, for example, W. GE, Special Economic Zones and the Economic Transition in China (Singapore 1999) 45 et seqq.

[7] Minutes of the Committee on Commerce and Industry No. 11 (28 March 1980), House of Representatives, the 91st session of the Diet (1980) 2.

[8] *Ibid.*

[9] The Great Hanshin-Awaji earthquake is also known as the Kōbe earthquake. Facing the extremely severe damage caused by the earthquake, the prompt increase in the volun-

bers mentioned an idea that the concept of special economic zones could be used as one of various potential policy tools for providing reconstruction assistance. For example, in the House of Representatives Budget Committee on 24 February 1995, Kazuyoshi Akaba, a member of the New Frontier Party at that time, mentioned an idea of attracting businesses to the disaster-stricken area by making it a customs-free trade zone, learning from the examples of special economic zones in China.[10] At that time, the government apparently refrained from expressing any particular view on that idea, as it was not a point for discussion in that committee meeting.[11]

Subsequently, in the meeting of the House of Councillors, held on 14 March 1997, Shoji Motooka, on behalf of the Democratic Party of Japan, argued for the need to designate the disaster-stricken area as a special economic zone in which special tax treatment would apply to encourage its post-earthquake reconstruction.[12] In reply to Motooka's argument, however, Ryutaro Hashimoto, the Minister of State for Trade and Industry at that time, explained that special measures on tax treatment for post-earthquake reconstruction had already been adopted and implemented,[13] implying that the government had no thought of planning any redundant assistance in the form of a special economic zone designation.

The dialogue mentioned above seems to show how cautious the government of that period was in discussing the possibility of introducing special economic zones in Japan. Such prudence by the past government contrasts with the recent government's economic strategy underlining the continuing importance of increasing the number of special economic zones in Japan. To comprehend why the government hesitated in having special economic zones in the late 20th century, the traditional principle of national land planning, namely the "well-balanced land development" principle, deserves close attention, as will be shown below.

The policy-recommending comments in relation to the reconstruction assistance following the Great Hansin-Awaji Earthquake reflect a proposal originally raised by the local government of the disaster-stricken area. Toshitami Kaihara, the governor of Hyogo Prefecture at that time, has revealed that he originally made the proposal to create a special economic

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teer activities undertaken to help the afflicted people became a social phenomenon in that year. Thus, in the cabinet council in December 1995, the Japanese government declared 17 January a national "Disaster Prevention and Volunteerism Day" and also declared the week of 15–21 January a national "Disaster Prevention and Volunteerism Week".

[10] Minutes of the House of Representatives Budget Committee No. 18 (1) (24 February 1995), the 132nd session of the Diet (1995) 14.

[11] *Ibid.*

[12] Minutes of the House of Councillors No. 8 (14 March 1997), the 140th session of the Diet (1997) 5–6.

[13] *Ibid.*

zone around the Kobe Port, in which measures for deregulation and tax breaks were to be carried out like the enterprise zone of London Docklands in order to maximize the economic development for the earthquake disaster reconstruction.[14] However, according to him, this proposal was rejected by the government on the grounds that the creation of such a special zone might result in the situation of "one country, two systems" in Japan.[15]

Although the phrase "one country, two systems" is often used to refer to a constitutional principle in China formulated by Deng Xiaoping during the early 1980s, the same phrase is used differently in the context of policy debates on special economic zones in Japan. In such context, the phrase "one country, two systems" is used to refer to the criticism regarding the risk that the introduction of special economic zones exempt from nationwide regulation or taxation would result in widened economic gaps among regions. Thus, what we can observe here is the fact that the government, at least in the 20th century, maintained its hesitant attitude toward the idea of introducing special economic zones in Japan, with the firm commitment to its principle of pursuing economic strategy narrowing regional disparities.

However, the government's attitude in that period against the introduction of special economic zones became – as an exception – relaxed in the case of Okinawa, as explained below.

b) Special Economic Zones in Okinawa

The earliest special economic zone in Japan was established in Okinawa Prefecture during the period in which it was occupied by the United States of America.[16] In 1959, a roughly 8,000-square-meter area surrounding the Naha Port was designated as a free trade zone, in which the industry fabricating transistor radios for export to the United States of America was developed.[17] Thus there was a special circumstance in that the first exam-

[14] Minutes of the 3rd Meeting of the Reconstruction Design Council in Response to the Great East Japan Earthquake (30 April 2011) 11, available at <http://www.cas.go.jp/jp/fukkou/pdf/gijiroku/kousou03.pdf>.

[15] *Ibid.* See also HYOGO PREFECTURE (ed.), *Tsutaeru: hanshin awaji dai-shinsai no kyōkun* [Lessons from the Experience of the Great Hanshin-Awaji Earthquake] (Tokyo 2009).

[16] Okinawa was a major battlefield during World War II (code-named "Operation Iceberg", the Battle of Okinawa began on 26 March 1945), and even after the war it was occupied by the United States of America, this continuing until 1972. See, for example, H. KATO, *Okinawa sen de ushinawareta shūraku no saiken to beikoku no tōchi hōki ni yoru senryō seisaku* [Reconstruction of Villages Lost in the Battle of Okinawa and the Occupation Policy under the Administration Rules Established by the United States of America], Okinawa Bunka Kenkyū 42 (2015) 407 et seqq.

ple of a special economic zone in Japan was established under the initiative of the United States of America.

Even after Okinawa's 1971 reversion to Japanese sovereignty following its occupation by the United States of America, the prefecture was, in light of requests from the local business community to take advantage of the free trade zone for promoting economic growth in Okinawa,[18] allowed to keep the zone in existence pursuant to Art. 23 of the Act on Special Measures for Economic Stimulation and Development of Okinawa of 1971 (hereinafter: the Act of 1971).[19]

From 1996 to 1997, the local government of Okinawa Prefecture drafted a series of proposals called the "Project for the Creation of an International City" with the ambition of making the whole area of Okinawa Prefecture a free-trade zone in which special treatment on tax, deregulation, and infrastructure development were planned to be carried out.[20] However, the ambitious project was never carried out and ended up leading only to a partial amendment of the Act of 1971.[21]

In March 1997, the bill proposing the partial amendment to the Act of 1971 was adopted in the meeting of the Special Committee on Okinawa and Northern Problems.[22] In the meeting, it was also decided to attach a supplementary resolution to the bill proposing the partial amendment of the Act of 1971, in which the government manifested its intention of making efforts at creating a so-called free-trade port or the other special economic zones for the purpose of boosting the local economy and also the purpose of protecting and developing local industries. The bill was passed during the 140th session of the Diet, and the attachment of its supplementary resolution was also approved.[23]

As a result, the Act of 1971 was partially amended in 1998, and rules on a special free trade zone, a tourism industry promotion zone, and an infor-

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[17] S. WAKUGAWA, *Okinawa ken ni okeru tokku eno torikumi* [Efforts on Special Economic Zones in the Okinawa Prefecture], Sangyō Ritchi 41:9 (2002) 32.

[18] *Ibid.*

[19] *Okinawa shinkō kaihatsu tokubetsu sochi hō*, Law No. 131/1971.

[20] K. TAKAHARA, *Okinawa no 2002-nen ikō no sangyō seisaku to sono kenshō (bunken-gata shakai ni okeru chiiki jirutsu no tameno seisaku ni kansuru sōgōkenkyū)* [On the Industrial Policy in Okinawa after 2002 and its Estimates (General Research on the Policies toward Economic and Social Independence in a Decentralized Society (I))], Kaihatsu Ronshū 84 (2009) 66.

[21] *Ibid.*

[22] Minutes of the Special Committee on Okinawa and Northern Problems No. 5 (6 March 1997), House of Representatives, the 140th session of the Diet (1997) 1.

[23] Minutes of the House of Representatives No.16 (7 March 1997), the 140th session of the Diet (1997) 22; Minutes of the House of Councillors No. 14 (28 March 1997), the 140th session of the Diet (1997) 12.

mation technology industry promotion zone were legislated. Under the rules, certified businesses may enjoy special tax treatment such as the deduction of corporate tax or real-estate tax. These were the first special economic zones established under the initiative of the Japanese government.

For three decades after the reversion of Okinawa to Japan, the Act of 1971, partially amended in 1998, played a role in its local economic development. During that period, the Act also played a role as pioneer legislation that forged a breakthrough on the stalemate in the discussion concerning the possibility of introducing special economic zones in Japan. At the end of the century, there was a movement to expand the use of special economic zones in Okinawa, which resulted in new legislation replacing the Act of 1971.

In 2000, Tateo Kishimoto, the then mayor of the city of Nago, visited the International Financial Services Centre in Dublin, Ireland, and he decided that Nago should become a tax haven for financial businesses too.[24] Although it was not easy for him "to persuade politicians and the powerful Ministry of Finance to pass special laws allowing unprecedented tax breaks in just one region,"[25] the government eventually cooperated with his idea, enacting legislation in 2002 as will be shown below.

Not only the mayor of Nago but also the governor of Okinawa Prefecture played a role as a channel for proposing the idea on expanded uses of special economic zones. During his visit to Okinawa in August 2001, Toranosuke Katayama, the then Minister for Internal Affairs and Communications, received a proposal on making Okinawa Prefecture a special zone for the information technology industry from Keiichi Inamine, the governor of Okinawa Prefecture at that time. About two months later, Katayama, in the 12th meeting of the Council on Economic and Fiscal Policy, made a comment encouraging the realization of the proposal by the local government.[26]

As a consequence of these lobbying activities, in 2002 the Act of 1971 expired, and the Act on Special Measures for the Economic Stimulation of Okinawa[27] was enacted. Under the new Act, three types of special economic zones could be designated, namely the special free-trade zone, the information technology special zone, and the financial-industry special

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[24] H. URABE, *Keizai tokku zeisei: okinawa shinkō tokubetsu sochi hō ni okeru chiiki yūgūseisaku* [The Taxation System in Special Economic Zones: Regional Special Tax Treatment under the Law on Special Measures for the Economic Stimulation of Okinawa], Nichizeiken Ronshū 58 (2008) 154–159.

[25] "A tax haven for Japan: In Nago's fair city", The Economist, 6 June 2002.

[26] Minutes of the 12th meeting of the Council on Economic and Fiscal Policy (13 May 2002) 4–5, available at <http://www5.cao.go.jp/keizai-shimon/minutes/2002/0513/shimon-s.pdf>.

[27] *Okinawa shinkō tokubetsu sochi hō*, Law No. 14/2002.

zone. In these zones, certified businesses could enjoy tax breaks provided by the new Act.

As anticipated by the local government, in July 2002, the city of Nago in Okinawa Prefecture was designated as a financial-industry special zone.[28] Towards the idea of establishing a "tax haven" in Okinawa, there was a positive expectation that having special economic zones for financial business in Japan was meaningful for making Japanese markets more attractive internationally in the era of institutional competition.[29] In reality, the preferential treatment on corporate tax in the special zone in Okinawa has not proven capable of being a sufficient incentive for companies to develop new financial businesses there because evaluations have shown that the effective corporate tax rate there is rather expensive compared to tax havens found in the other countries, including Japan's neighbors.[30] As background on the modest preferential tax treatment, it has been pointed out that the low tax rate in Dublin, listed as a harmful practice by the Organisation for Economic Co-operation and Development (OECD), led to the cautious approach in Okinawa on easing the tax rate.[31]

To briefly summarize, the government began to pay particular attention to the special economic zones in the neighboring countries in the 1980s, but the government maintained its cautious attitude in the debates on the possible introduction of special economic zones in Japan. However, Okinawa was dealt with differently in this context, and special economic zones were established ahead of the other regions in Japan. Thus, a question may be raised as to how one can account for these apparently contradictory political decisions by the Japanese government. In searching for a historical account on this question, the following sub-section clarifies what circumstances prevented the government from discussing the possible introduction of special economic zones in the 20th century (II.2.a), and it also examines why the establishment of special economic zones were approved exceptionally in Okinawa in that period (II.2.b).

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[28] OKINAWA PREFECTURE, *Keizai kinyū kasseika keikaku* [The Plan on the Promotion of Financial Business] (July 2014) 4; available at <http://www.pref.okinawa.jp/site/kikaku/chosei/kikaku/documents/keikinnkeikaku.pdf>.

[29] T. SHIMABUKURO, *Okinawa kokusai jouhō kinyū tokku* [Okinawa International Information & Financial Special Zone], Ryūdai Hōgaku 67 (2002) 188–190.

[30] K. TAKAHARA, *Okinawa no 2002-nen ikō no sangyō seisaku to sono kenshō* [Evaluation on the Industrial Policy in Okinawa after 2002] Kaihatsu Ronshū 84 (2009) 74.

[31] T. KONDŌ, *Gen-teiansha ga mondaiten wo tsuku: okinawa kinyū tokku wa naze kinō shinainoka* [The Reason for a Special Financial Zone in Okinawa], Jiji Top Confidential 11161 (2004) 3.

2. Historical analysis

a) The "well-balanced land development" principle

As reviewed in the previous sub-section, in the 20th century the criticism of "one country, two systems", born from a concern about widened regional differences, was a major factor leading to the government's cautious attitude regarding the debates on the possibility of adopting special economic zones in Japan. In this period, the need for reducing gaps in regional development had been expressed by the principle of "well-balanced land development". The following paragraphs examine the political reason why the government placed importance on a unified approach for national land development.

The earliest usage of the phrase "well-balanced land development" can be found in the 1940s. In 1940, the Shōwa Research Association, the policy research group for Fumimaro Konoe, the Prime Minister at the time, formulated the phrase of "well-balanced land development" in a document titled "Memorandum on Land Planning".[32] Since then, the principle has been repeatedly adopted in governmental documents, such as the "General Guideline for Location Planning" issued by the Manchukuo State Council[33] and the "Draft for Central Planning" authored by the State Planning Ministry.[34]

A question that may be raised here is what explains the heavy use of the principle as is observable in that period. To provide a historical account for this observation, it should be noted that the principle was originally formulated by the government during World War II. More specifically, it has been pointed out that the related documents on land planning, mentioned above, were drafted in connection with the government's efforts to mobilize all domestic resources in support of total war.[35]

In the drawn-out wartime period, the government's policy on total war became apparent. In particular, beginning in 1937 the government started its campaign of "*Kokumin Seishin Sōdōin Undo* [The National Spiritual Mobilization Movement]" in order to rally the nation for waging total war against China. It can be observed that the patriotic slogans that Konoe's government adopted for this movement show the aim of strengthening the

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[32] T. ITŌ, *Chihō ni totte "kokudo no kinkōaru hatten" towa nan de attaka* [The Idea of "Well-balanced Land Development": How Has It Worked for the Country of Japan?], Chiiki-keizai Kenkyū 14 (2003) 3.

[33] Manchukuo State Council, *Sōgō Ritchi Keikaku Sakutei Yōkō* [General Guidelines for Location Planning], available in: Sugai (ed.), *Shiryō: Kokudo Keikaku* [Materials on Land Planning] (Tokyo 1957) 1 et seqq.

[34] STATE PLANNING MINISTRY, *Chūō Keikaku Soan* [Draft for Central Planning], available in: Sugai (ed.), *supra* note 33, 86 et seqq.

[35] ITŌ, *supra* note 32, 3.

unity of the nation. For example, the slogan of "*Kyokoku Icchi* [National Unity]" called for the necessity for all people standing together for their common purpose. Also, under the slogan of "*Kennin Jikyū* [Untiring Perseverance]", civilians were encouraged to conserve in their daily lives in order to allocate resources for military use to the greatest extent possible.

Alongside the movement, with the enactment of the National Mobilization Law in 1938,[36] the government was authorized to control the use of both human and material resources. It is known that uses of certain materials, such as steel, copper, zinc, lead, gum, and wool, were exclusively confined to military uses.[37] In order to maintain such repression in private economic activities, the series of patriotic slogans underlying the importance of national unity was used as a tool to suppress people's frustrations and to crack down on criticisms against total war.

Taking these situations into account, the political motive, in 1940, for the government's preferring the idea of "well-balanced land development" becomes understandable. That is to say, considering the copious use of the "well-balanced land development" principle by the government in this period, it would be presumable that this principle also worked as one of the telling phrases for the government's requiring people to put up with their inconvenient and self-sacrificing lives in support of the public goal of total war.

Because of the war defeat, the National Mobilization Law lost its justification for existing, and it was abolished by legislation in 1945.[38] However, the principle of "well-balanced land development" still remained in effect until 1998, when the government adopted the "Grand Design of National Land in the 21st Century".[39] It was thus a legacy of the regime in place during the era of total war that prevented the government in the late 20th century from actively discussing the possibility of introducing special economic zones in Japan.

b) Special Economic Zones as an institution for regional economic gap adjustment

Subsequently, in tackling the question of why the government could deal with Okinawa differently in the 20th century debate on special economic

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[36] *Kokka Sōdōin Hō*, Law No. 55/1938.

[37] S. TŌYAMA/S. IMAI/A. FUJIWARA, *Shōwa Shi* [History of Shōwa] (Tokyo 1959), 160–161.

[38] *Kokka Sōdōin Hō oyobi Senji Kinkyū Sochi Hō Haishi Hōritsu*, Law No. 44/1945.

[39] ITŌ, *supra* note 32, 12. See also T. OKADA, *21-seiki no gurando dezain: chiiki no jiritsu no sokushin to utsukushii kokudo no sōzō: shin-zensō to jūtaku seisaku no tenbō* [Grand Design of National Land in the 21st Century: Promotion of Regional Independence and Creation of Beautiful Land: New Comprehensive National Development Plan and Perspective on Housing Policy], Gekkan Kensetsu 42:6 (1998) 18–20.

zones, let us remember that it was China's decision to have special economic zones that initially led to the discussion on their possible introduction in Japan. To better comprehend the government's view at that time, it is worthwhile to compare the situation of Okinawa and that of China.

In the 3rd plenary session of the 11th National Congress of the Communist Party of China in 1978, China formulated the principle of a structural reform for opening China to the outside world. Then, in a related working conference in April 1979, Deng Xiaoping suggested the establishment of special economic zones when he heard the report on how to develop the economy of Guangdong Province.[40] In accordance with Deng Xiaoping's suggestion, four special economic zones were assigned as the areas in which direct investments from the other countries would be allowed. The role of special economic zones in China had been to pursue reform and economic opening in certain locations ahead of other regions in the country.

As long as the premise behind the role of a special economic zone was to proceed at a given location with regulatory reform one step ahead of other regions, like in China at that time, it was difficult for the government in Japan to actively discuss the possibility of designating special economic zones in an era during which the principle of "well-balanced land development" was in effect. However, the exceptional situation in Okinawa provided a number of justifications for the government to adopt special economic zones there as a legitimate policy.

As one of the justifications, there was the problem that Okinawa had been experiencing a high rate of unemployment after World War II as well as a regional economic stagnation in connection with the occupation under US military rule. Thus the government recognized the need for decreasing the gap between the economic development in Okinawa and that in other regions of Japan.[41] With such a situation, the government could have theorized that the criticism of "one country, two systems" was not applicable as long as the introduction of special economic zones was carried out for the purpose of reducing the regional gap in economic development. This theory of course relies on the understanding that the purpose of reducing the regional gap accords with the principle of "well-balanced land development".

Additionally, the fact that American military bases in Japan were concentrated in Okinawa Prefecture may have provided a justification. It is

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[40] G. SHANGQUAN/C. FULIN (eds.), New Progress in China's Special Economic Zones (Beijing 1997) 2 et seqq.

[41] S. WAKUGAWA, *Okinawaken tokubetsu jiyūbōeki chiku to kōzō kaikaku tokku ni tsuite* [The Free-trade Zone in Okinawa and Special Zones for Structural Reform], Chiiki Kaihatsu 460 (2003) 24.

pointed out that the preferential treatment associated with special economic zones "can be interpreted as compensation for the disproportionate burden associated with the US military presence".[42]

In this way, the Japanese government could accept the offer to establish – as an exception – the special economic zones in Okinawa even in a period during which the principle of "well-balanced land development" had been believed to be important. This experience of Okinawa is noteworthy since it demonstrates the earliest examples of special economic zones in Japan. However, the role of special economic zones in Okinawa at that time was rather limited, and it was far from the adoption of special economic zones as a means of stimulating the national economy.

III. Special Economic Zones for Stimulating the National Economy

It was at the beginning of the 21st century when the government formulated the concept of special economic zones as a means of stimulating the national economy and carried it into effect. As a background development, the 21th century has seen criticism openly voiced against the principle of "well-balanced land development". For instance, the principle has been criticized as an outdated socialistic approach to land planning.[43] Furthermore, some commentators have pointed out that the outdated principle was responsible for the government's irrational regional policy that resulted in increased public debts.[44] With the increasing criticism of the "well-balanced land development" principle, the major concern of the government's growth strategy has shifted from the policy of "national minimum" to the policy of "local optimum".

Also, we should note that the introduction of this type of a special economic zone began in the period in which Jun-ichirō Koizumi took the post as the prime minister. Under his administration, Koizumi placed the greatest importance on policies designed to carry out structural reform based on the idea of neo-liberalism and supply-side economics.[45] Accordingly, the government considered the institution of special economic zones to be useful as a policy tool for promoting this structural reform.

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[42] HARADA, *supra* note 1, 207.

[43] N. TANAKA, *Kōzō kaikaku towa nanika* [What is Structural Reform?] (Tokyo 2001) 159.

[44] N. YASHIRO, *Keizai zaisei kōzō kaikaku eno shinario* [Scenario for Structural Reform of Economic and Fiscal Policy], Nihon Keizai Shinbun, 5 March 2001.

[45] K. NAKAKITA, *Jimintō seiji no hen-yō* [Transition in the Politics of the Liberal Democratic Party] (Tokyo 2014) 208 et seqq.

This idea resulted in the introduction of "*kōzō kaikaku tokku* [Special Zones for Structural Reform]". A question we may have here is as to where this idea came from and how it has developed into actual legislation on special economic zones.

In tackling the historical question, this section initially examines how the proposal to introduce special zones for structural reform was formulated and presented to the government (III.1.a) and how the related legislation was carried out (III.1.b). Subsequently, this section reviews the development of another type of special economic zones called "*sōgō tokku* [Comprehensive Special Zones]", which are also expected to stimulate the national economy (III.2.a), and then gives an overview of a distinctive feature in comprehensive special zones (III.2.b).

1. Special Zones for structural reform

a) Proposal through multiple channels

In a Diet committee on 5 March 2002, Tatsuya Tanimoto, a member of the Liberal Democratic Party, criticized the conventional principle of "well-balanced land development" and expressed his opinion that an expanded use of special economic zones may be meaningful in breaking away from the outdated principle.[46] He also suggested the possibility of advancing regulatory reforms in these zones, raising in concrete terms suggestions on "Education Special Zones", "Radio Special Zones", and "Environment Special Zones".[47] In response, Toranosuke Katayama, the Minister for Internal Affairs and Communications at that time, made a positive comment that it would be preferable to discuss whether other types of special economic zones can be introduced in Japan besides in Okinawa.[48]

As can be seen in this dialogue, the government's attitude on the introduction of special economic zones had already totally shifted compared to that of the late 20th century. In fact, in the early 21st century the idea of introducing a new framework of special economic zones has been preferred by the government. Thus, the legislative process for the first comprehensive framework of special economic zones, which was expected to promote nationwide structural reform, proceeded at an astonishing speed in Japan. From a historical perspective, an interesting fact in the early stage of this process is that the proposals on special economic zones for structural reform were communicated to the legislative body through mul-

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[46] Minutes of Committee on Public Management, Home Affairs, Posts and Telecommunications Administration No. 14 (5 March 2002), House of Representatives, the 154th session of the Diet (2002) 10–11.

[47] *Ibid.*

[48] *Ibid.*

tiple channels around the same time. In an attempt to trace a common source of the original proposals, the following paragraphs review how the conception of special economic zones for structural reform arose.

It is known that a paper entitled "Guidelines on Future Investigations in the Regulatory Reform Council (Revised Memorandum)", dated 15 February 2002 and written by Naohiro Yashiro,[49] was shared in the Regulatory Reform Council of that year (hereinafter: Yashiro Proposal).[50] In the Yashiro Proposal, it is suggested to create a "special zone for regulatory reform" in which a certain pilot project on deregulation can be tried out.[51] Then, if such deregulatory measure is evaluated as favorably effective not only for the local economy but also for the national economy, it is planned that the project of deregulation is expanded on a nationwide basis.[52] Yashiro Proposal also reflects the idea of conceptualizing such zone as a model for local economic revitalization without financial assistance from the central government.[53]

Almost simultaneous to the Yashiro Proposal, in the meeting of the Council on the Strategy for Industrial Competitiveness on 4 March 2002, Takeo Hiranuma presented an opinion that the government should work hard on a positive utilization of special economic zones for the purpose of regulatory reforms, stating that it would be specifically effective in the field of education or in the information technology industry.[54] As to the origin of that idea, Hiranuma revealed in the press conference after the cabinet meeting on 5 March 2002 that a suggestion on special economic zones for regulatory reform was raised by some members of the Council on the Strategy for Industrial Competitiveness, and he agreed with that suggestion.[55]

Then, in his paper submitted on 15 March 2002 to the meeting of the Council on Economic and Fiscal Policy,[56] Hiranuma conceptualized spe-

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[49] Yashiro worked as a member of the Regulatory Reform Committee from 1998 to 2006.

[50] S. KAWATE, *Kōzō kaikaku tokku no seiritsu katei to seido unyō hōhō* [The Process of Legislation and the Operation of Special Zones for Structural Reform], in: M. NISHIO (ed.), *Kenshō kōzō kaikaku tokku* [Assessment on Special Zones for Structural Reform] (Tokyo 2007) 14–16.

[51] *Ibid.*

[52] *Ibid.*

[53] *Ibid.*

[54] *Daijin kakugi go kisyakaiken no gaiyō 2002/03/05* [Summary of the press conference after the cabinet meeting on 5 March 2002], *Katsudōhōkoku* [Activity Report], the website of Takeo Hiranuma's Office <http://www.hiranuma.org/new/note/note2002 0305.html>.

[55] *Ibid.*

[56] This council was established in the Cabinet Office as one of the Councils on Important Policies, pursuant to Art. 18 of *Naikakufu Setchi Hō* [Cabinet Office Establishment Law], Law No.89/1999. See also, *Keizai zaisei shimon kaigi rei* [Council on Economic and Fiscal Policy Ordinance], Government Ordinance No. 257/2000.

cial economic zones for regulatory reform as a framework for promoting competition among local governments, a framework that hopefully would result in diversified local economic strategies suitable for regional circumstances on a case-by-case basis.[57] To make the idea more specific, in the meeting of the same Council held on 24 April 2002, Hiranuma submitted his proposal on "special zones for regulatory reform" (hereinafter: Hiranuma Proposal).[58] The Hiranuma Proposal formulates the purposes of "special zones for regulatory reform" as follows.[59] Firstly, such zones are established to promote competition among local governments and their independent development. Secondly, such zones are to be established as a test bed for a pilot deregulation project which is proposed by a local government and approved by the central government. Thirdly, in such zones, the local government carries out the pilot deregulation project without relying on any financial assistance from the central government. The Hiranuma Proposal was referred to in the Regulatory Reform Council as well, and it played an important role as a basic concept shared within the government.[60]

Another simultaneous proposal appears in the meeting of the Council on Economic and Fiscal Policy on 15 March 2002. In this meeting, four private sector experts, including Jiro Ushio, Hiroshi Okuda, Masaaki Honma, and Hiroshi Yoshikawa, submitted a paper suggesting the creation of "special zones for structural reform".[61] They submitted a more detailed proposal in the meeting of the same Council held on 24 April 2002 (hereinafter: Proposal by Private Sector Experts).[62] In their proposal, each designated zone is experimentally exempt from the national regula-

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[57] T. HIRANUMA, *Keizai kasseika kyōsōryoku kyōka ni muketa kihonteki shiten* [Basic Perspective for the Economic Revitalization and Enhancement of Competitiveness], the 7th Meeting of the Council on Economic and Fiscal Policy (15 March 2002), available at <http://www5.cao.go.jp/keizai-shimon/minutes/2002/0315/item5.pdf>.

[58] T. HIRANUMA, *Kisei kaikaku tokku kōsō ni tsuite* [Plan for Special Zones for Regulatory Reform], the 11th Meeting of the Council on Economic and Fiscal Policy (24 April 2002), available at <http://www5.cao.go.jp/keizai-shimon/minutes/2002/0424/item3.pdf>.

[59] *Ibid.*

[60] Ministry of Economy, Trade and Industry, *Kōzō kaikaku tokku ni kansuru Keizai-sangyōshō no kangaekata* [View of Ministry of Economy, Trade and Industry on Special Zones for Structural Reform], the 4th Workshop on Special Zones for Structural Reform in the Regulatory Reform Council (9 October 2002) 1, available at <http://www8.cao.go.jp/kisei/giji/02/wg/tokku/siryo4-2-1.pdf>.

[61] J. USHIO/H.OKUDA/M. HONMA/H. YOSHIKAWA, *Keizai kasseika senryaku no jisshian* [Working Plan for Economic Revitalization Strategy], the 7th Meeting of the Council on Economic and Fiscal Policy (15 March 2002), available at <http://www5.cao.go.jp/keizai-shimon/minutes/2002/0315/item1.pdf>.

[62] J. USHIO/H. OKUDA/M. HONMA/H. YOSHIKAWA, *Kōzō kaikaku tokku ni tsuite* [Proposal on Special Zones for Structural Reform], the 11th Meeting of the Council on Econom-

tion in a certain field, and it is asserted that such socioeconomic experiments in deregulation within a specified area can be expected to result in a promotion of nationwide structural reform.[63] They also point out that this institution should not be seen as a framework for providing financial aid to local governments given its aim of promoting the independent development of the local economy.[64]

Interestingly, the Yashiro Proposal, the Hiranuma Proposal, and the Proposal by Private Sector Experts reflect parallel ideas. Firstly, all of the simultaneous proposals demonstrate the purpose of using special economic zones as social experiments for promoting national structural reform. Secondly, all of the proposals reject the possibility of the central government providing financial assistance to the designated zones. Consequently, a question we may have here is why multiple proposals sharing almost the same conception were submitted to the government during roughly the same period.

Some articles suggests that it was more than coincidence and that the idea of introducing a system of special economic zones in order to make a breakthrough for regulatory reform in Japan originally came from a study group organized by young bureaucrats in the Ministry of Economy, Trade and Industry.[65] The members of the study group vigorously lobbied certain assembly members who have a strong connection to the prime minister as well as certain opinion leaders in private sectors who are politically well-connected. In particular, it is known that they presented the draft plan for special economic zones to Hiranuma and to the Council on Economic and Fiscal Policy.[66] In relation to private sectors, for instance, Shinichi Ichikawa, a strategist in the brokerage industry,[67] has revealed that he received a detailed explanation in February 2002 directly from one of the members of the study group.[68] Thus, it would be fair to conclude that it was the lobbying activity by the members of the study group that

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ic and Fiscal Policy (24 April 2002), available at <http://www5.cao.go.jp/keizai-shimon/minutes/2002/0424/item2.pdf>.

[63] *Ibid.*

[64] *Ibid.*

[65] N. FUKUSHIMA, *Watashi ga kasumigaseki wo "dappan" shita riyū* [The Reason Why I Retired from the Ministry], Chūōkōron 1443 (2003) 116–124. See also; *Tokku wo tsukutta 3-nin no wakate: jōshikiyaburi no seisaku kettei ga kisei wo kechirashita* [Three Young Bureaucrats Who Made Special Zones: Bold Policy Shift for Deregulation], Nikkei Bijinesu (24 March 2003) 38–40.

[66] *Ibid.*

[67] Ichikawa also worked in the Assessment Committee in the Structural Reform Promotion Headquarters from 2003 to 2006.

[68] S. ICHIKAWA, *Kisei no kara yaburu ugoki hirogare* [Hope for the Promotion of Regulatory Reform], Nikkei-bijinesu (5 September 2005) 123.

caused parallel policy proposals to be submitted simultaneously over multiple channels.

b) Legislative history

On 2 May 2002, the Working Group on Special Zones for Regulatory Reform was established within the Council on Regulatory Reform in order to prepare for the related legislative works. In the working group, the main focus of discussion had been on how to legislate the system in order to promote regulatory reform through social experiments in special economic zones. A possible solution raised in the working group was a way for the central government to authorize, through the designation of a special zone, a local government to work on deregulation by passing ordinances.[69] However, such a solution was not adopted since it would result in a complicated process expanding deregulation from the regional to the national level. Eventually, the working group decided to legislate a comprehensive law on special economic zones, which had been tentatively called "*tokku hō* [the Special Zones Act]" in the drafting process.

In the cabinet decision of 25 June 2002, called the "Basic Policies for Economic and Fiscal Management and Structural Reform 2002" (hereinafter: Basic Policies 2002),[70] the government officially announced its plan to introduce special zones for structural reform and its plan to establish specialized bodies for this project.[71] Shortly after the Basic Policies 2002 was adopted, the Office for the Promotion of Special Zones for Structural Reform was established on 5 July 2002; subsequently, its ruling body, titled the Headquarters for the Promotion of Special Zones for Structural Reform, was established on 26 July 2002.

Regarding the name of the special economic zones being discussed here, while the Yashiro proposal and the Hiranuma proposal call them "*kisei kaikaku tokku* [Special Zones for Regulatory Reform]", the Proposal by Private Sector Experts call them "*kōzō kaikaku tokku* [Special Zones for Structural Reform]". It was a natural result that the latter name

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[69] K. SHIRAISHI, *Kisei kaikaku tokku teian wo meguru hōteki mondai nit suite: jō*, [Legal Issues in Relation to the Proposal on Special Zones for Structural Reform (1)], Jichi Kenkyū 78:7 (2002) 51.

[70] The series of cabinet decisions titled "Basic Policies for Economic and Fiscal Management and Structural Reform" is also called "*Honebuto no hōshin* [large-boned policies]". See I. IIJIMA, *Koizumi kantei hiroku* [Undisclosed Records of the Koizumi Cabinet] (Tokyo 2006) 62.

[71] COUNCIL ON ECONOMIC AND FISCAL POLICY, *Keizai zaisei unei to kōzō kaikaku ni kansuru kihonhōshin 2002* [Basic Policies for Economic and Fiscal Management and Structural Reform 2002], Cabinet Decision of 25 June 2002, available at <http://www.kantei.go.jp/jp/singi/keizai/kakugi/020625f.html>.

was adopted in the Basic Policies 2002, in conformity with the wording in the slogan of the "Koizumi Structural Reform", also known as "*sei-iki naki kōzō kaikaku* [Structural Reform without Allowing a Sanctuary]".

In the same manner, the draft law tentatively called "*tokku hō* [the Special Zones Act]" was re-named as "*kōzō kaikaku tokubetsu kuiki hō* [the Special Zones for Structural Reform Act]" and adopted as a legislative bill by a cabinet decision on 5 November 2002.[72] Then, on 18 December 2002, the Special Zones for Structural Reform Act[73] was enacted, and it became a milestone in the history of special economic zones in Japan.

Since then, a wide variety of proposals on creating special economic zones have been approved.[74] The most distinctive feature of special zones for structural reform can be seen in their dual function. That is to say, they are established for the purpose of promoting both regional economic growth and nationwide structural reform.[75] In fact, however, putting a greater importance on the latter aim, the government expects special zones for structural reform to function as a socioeconomic experiment promoting nationwide policy innovation.[76]

2. Comprehensive Special Zones

a) Historical background

In the previous sub-section, we reviewed how the concept of special zones for structural reform was formulated at the initiative of Koizumi under the politics of the Liberal Democrat Party. This was not the only example of special economic zones for stimulating the national economy. Another type of special economic zone for promoting national development was established in the period under the politics of the Democratic Party of Japan from 2009 to 2012.

The 45th general election for the House of Representatives held on 30 August 2009 was noted as a remarkable moment in Japanese history since the election caused a change in the government's ruling party, the transition being from a coalition of the Liberal Democratic Party and the New Kōmeito Party to a government headed by the Democratic Party of Japan. After

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[72] *Kōzō kaikaku tokubetsu kuiki hō-an* [Legislative Bill on the Law on Special Zones for Structural Reform], Cabinet Decision of 5 November 2002, available at <https://www.kantei.go.jp/jp/singi/kouzou/houan/021105/021105kuiki.html>.

[73] *Kōzō kaikaku tokubetsu kuiki hō*, Law No. 189/2002.

[74] See, for example, S. MISONO/A. HATTORI/K. ŌMAE (eds.), *Tokku, chiiki-saisei no tsukurikata* [The Way of Making Special Zones and Local Regeneration] (Tokyo 2008) 76–223.

[75] Art. 1 of *Kōzō kaikaku tokubetsu kuiki hō*, Law No. 189/2002.

[76] H. FUKUI, *Shakai jikken to shiteno kisei kaikaku tokku* [Special Zones for Regulatory Reform as Social Experiments], Sangyō Ritchi 41:9 (2002) 8 et seqq.

the landslide election victory, Yukio Hatoyama, the Prime Minister at the time, announced his policy of giving highest priority to thoroughly eliminating wasteful spending in the government in order to allocate more money to households in an attempt to increase consumption.[77] The economic policy adopted by the regime in those days placed an emphasis on the importance of redistributing resources rather than having a specific growth strategy.[78] This is known as the "de-growth" strategy of the Hatoyama cabinet.

However, with continuing economic stagnation, the government had little choice but to shift its policy, and the cabinet decision on 30 December 2009 announced the "New Growth Strategy".[79] The announcement of this cabinet decision was so sudden that it has been criticized as a "two-week crash program" in order to prepare for the ordinary session of the Diet from January 2010.[80] Before long, Hatoyama resigned from his position as the prime minister in June 2010 so as to take responsibility for the party funding scandals and the failure in settling the dispute on the relocation agreement for US military bases.[81] Thereafter, Naoto Kan became the next leader.

Under the Kan administration, the government decided to create a new system of special economic zones, named "*sōgō tokku* [Comprehensive Special Zones]", as manifested in another "New Growth Strategy" announced by the cabinet decision of 18 June 2010.[82] The following paragraphs review the characteristics of comprehensive special zones in an

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[77] *Dai 173 kai kokkai ni okeru hatoyama naikaku souri-daijin shoshin hyōmei enzetsu* [The First Policy Speech by Prime Minister Hatoyama in the 173rd session of the Diet], 26 October 2009, available at <http://www.kantei.go.jp/jp/hatoyama/statement/200910/26syosin.html>.

[78] M. SHIRAKAWA, *Keizai-seichō wa iranai: datsu seicho no keizai e* [The Non-necessity of Having a Growth Strategy], People's Plan 49 (2010) 110–119.

[79] *Shin seichō senryaku (kihon hōshin): kagayaki no aru nippon e* [New Growth Strategy (Basic Policies): Toward a Radiant Japan], Cabinet Decision of 30 December 2009, available at <http://www.kantei.go.jp/jp/kakugikettei/2009/1230sinseichousenryaku.pdf>. The provisional English translation is available at <http://japan.kantei.go.jp/topics/2009/1230sinseichousenryaku_e.pdf>.

[80] M. KANEKO/T. TAKEMOTO, *Hatoyama seiken "shin seichō senryaku" wa kokumin e no uragiri de aru* [The New Growth Strategy of the Hatoyama Administration is a Betrayal of the People], Sekai 802 (2010) 150–151.

[81] M. ITŌ, *Minshutō no manifesuto to seiken un-ei* [Manifesto and Political Administration of the Democratic Party of Japan], in: Itō/Miyamoto (eds.), *Minshutō Seiken no chosen to zasetsu: sono keiken kara nani wo manabu ka* [Challenge and Collapse of the Democratic Party of Japan: What Lessons Can be Drawn from the Experience] (Tokyo 2014) 27.

[82] *Shin seichō senryaku: "genki na nippon" fukkatsu no sinario* [The New Growth Strategy: Blueprint for Revitalizing Japan], Cabinet Decision of 18 June 2010, available at <http://www.kantei.go.jp/jp/sinseichousenryaku/sinseichou01.pdf>. The provisional English translation is available at <http://www.meti.go.jp/english/policy/economy/growth/report20100 618.pdf>.

attempt to clarify how they are designed to function as special economic zones for stimulating the national economy.

b) Selection and focus

The New Growth Strategy adopted by the Kan administration emphasizes the policy of "making a focused allocation of financial resources" to policies and programs in accordance with priorities and "avoiding duplication of similar programs" in terms of "selection and focus".[83] This basic attitude of underlining the importance of resource allocation and the need of eliminating waste shares a similarity with the viewpoint of the Hatoyama administration. The principle of "selection and focus" is reflected as well in the "*sōgō tokubetsu kuiki hō* [Comprehensive Special Zones Act]"[84] enacted in 2011.

Under the Comprehensive Special Zones Act, there are two subcategories of comprehensive special zones, namely "international strategic comprehensive special zones" (Art. 8 para. 1) and the "comprehensive zones for local revitalization" (Art. 31 para. 1). While the former are expected to enhance the international competitiveness of Japan through the formation of industry clusters promoting national economic growth, the latter are expected to contribute to local revitalization by maximizing utilization of regional resources. This legal distinction of the subcategories can be noted as a distinctive feature of the Comprehensive Special Zones Act, compared to the Special Zones for Structural Reform Act.

Another characteristic is that the government may carry out tax, fiscal, or financial support, in addition to the special measure of deregulation, for comprehensive special zones. Compared to the rejection of tax, fiscal, and financial support in the framework of special zones for structural reform, this characteristic of comprehensive special zones can be comprehended as a reflection of the basic Kan administration idea emphasizing the importance of resource allocation policy.

The principle of "selection and focus" can be clearly observed in the limited number of designated comprehensive special zones. In reference to the initial selection, while as to the special zones for structural reforms the government approved 1,197 projects, as to the comprehensive special zones it approved only 44 projects. Obviously, in the framework of comprehensive special zones, the government is demonstrating an intention to invest exclusively in highly promising projects which are more than likely to stimulate the national economy.[85]

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[83] *Ibid.*

[84] *Sōgō tokubetsu kuiki hō*, Law No. 81/2011.

IV. Special Economic Zones in Abenomics

As examples of special economic zones for stimulating the national economy, the previous section reviewed two categories, including special economic zones for structural reform and comprehensive economic zones. Under the Abe administration, another category, called "*kokka senryaku tokku* [National Strategic Special Zones]", was added in 2014 as a part of the strategy in "Abenomics", i.e. the economic reform policy advocated by Shinzō Abe, the prime minister.

Abenomics consists of the so-called "three arrows", including bold monetary relaxation (the first arrow), flexible fiscal spending (the second arrow) and the new growth strategy aiming at structural reform (the third arrow). The creation of national strategic special zones is understood as a major part of the third arrow. As the main goal in the introduction of national strategic special zones, the government aims to realize "the world's most business-friendly environment" in Japan.[86]

Also, under the Abe administration, special economic zones named "*chihō sōsei tokku* [Special Zones for Regional Revitalization]" appeared in 2015. They are legally categorized as special economic zones designated under the National Strategic Special Zones Act,[87] but at the same time they are politically dealt with as constituting a sub-category within the framework of national strategic special zones in order to emphasize their expected role in boosting the local economy. As a result, the national strategic special zones selected in March 2015 (designated in August 2015) and in December of 2015 (designated in January 2016) are also called special zones for regional revitalization, but there is no sub-category name for the national strategic special zones selected in March 2014 (designated in May 2014).

Considering the situation above, a question may be posed regarding what accounts for this apparently awkward categorization in the concept of national strategic special economic zones. To examine this question from a historical perspective, this section first clarifies how national strategic special zones were created (IV.1.a) and reviews some criticisms levied against them (IV.1.b). Subsequently, this section examines how the need for local revitalization became a major topic in the policy debates in Abenomics

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[85] Y. NAKATA, *Tokku seido ni kansuru ronten seiri to kokka senryaku tokku no kongo no tenbō* [Summary of Issues on Special Economic Zones and the Future Perspective of National Strategic Special Zones], Chiginkyō Geppō 648 (2014) 13–16.

[86] Y. KWAK, *Igyō no keizai seido: kokka senryaku tokku* [An Unusual Economic Institution: National Strategic Special Zones], Sekai 859 (2014) 78.

[87] *Kokka senryaku tokku hō*, Law 107/2013.

(IV.2.a) and considers what motivated the government to create the subcategory called special zones for regional revitalization (IV.2.b).

1. National strategic Special Zones

a) The Takenaka proposal

It was Heizo Takenaka, a member of the Industrial Competitiveness Council, who provided the original idea of creating a new type of special economic zone as the major policy of the third arrow in Abenomics. By the meeting of the Industrial Competitiveness Council held on 3 April 2013, at the latest, he formulated the basic proposal on special economic zones under Abenomics (hereinafter: Takenaka Proposal) and shared it with the cabinet members, as can be seen in the minutes from the meeting.[88] In his proposal, Takenaka criticized that the economic impact caused by the existing special economic zones has been limited and argued for the need to create a new type of special economic zone.[89] Unlike the existing special economic zones, in his proposal it is planned to establish a "special economic zone advisory council" in which the prime minister plays the central role.[90] Thus, from the very beginning of the policy debate, there has been the principal idea that the operation of the recently introduced special economic zones should be carried out at the initiative of the central government.

Based on the Takenaka Proposal, he also submitted a paper that includes a detailed plan on how to carry out the proposal on special economic zones operated at the initiative of the central government, the so-called Takenaka Paper, presented in the meeting of the Industrial Competitiveness Council on 17 April 2013.[91] In the Takenaka Paper, the proposed system of special economic zones is tentatively entitled "Abenomics Strategic Special Zones".[92] Putting an emphasis on the purpose of enhancing Japan's global competitiveness, Takenaka specifies the possibility of establishing the "most-advanced international super special zone", which is planned to be a zone attracting cutting-edge businesses from across the globe.[93]

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[88] Minutes of the Industrial Competitiveness Council, 3 April 2013, available at <http://www.kantei.go.jp/jp/singi/keizaisaisei/kaigou/pdf/h250403_gijiyousi.pdf>.

[89] *Ibid.*

[90] *Ibid.*

[91] H. TAKENAKA, *Ritchi kyōsōryoku no kyōka ni mukete* [Towards the Enhancement of Location Competitiveness], Handout for the 6th meeting of the Industrial Competitiveness Council, 17 April 2013, available at <https://www.kantei.go.jp/jp/singi/keizaisaisei/skkkaigi/dai6/siryou14.pdf>.

[92] *Ibid.*

[93] *Ibid.*

The Takenaka proposal was accepted by the government, and the National Strategic Special Zones Working Group was established. Then, by the cabinet decision on 14 June 2013, the Japanese government released the growth strategy aiming at structural reform under the Abe administration.[94] In the cabinet decision on the growth strategy, it is stated that the number of national strategic special zones should be limited in accordance with priorities from the perspective of the national strategy.[95]

In this way, the government followed the Takenaka Proposal for formulating the third arrow of Abenomics, and on 13 December 2013 the National Strategic Special Zones Act[96] was enacted. Under the Act, the prime minister becomes the chairman of the National Strategic Special Zones Advisory Council.[97] It is pointed out that this top-down planning mechanism is a distinctive feature of national strategic special zones.[98] In March 2014, the Tokyo area,[99] the Kansai area,[100] Niigata,[101] Yabu, Fukuoka,[102] and Okinawa Prefecture[103] were decided to be the first national strategic special zones.

b) Drill to break through the bedrock of vested interests

After the second Abe cabinet was formed in December 2012, Abe repeatedly manifested in various speech-making opportunities his intention to

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[94] *Nippon saikō senryaku:* Japan is Back [Japan Revitalization Strategy: Japan is Back], Cabinet Decision of 14 June 2013, available at <https://www.kantei.go.jp/jp/singi/keizaisaisei/pdf/saikou_jpn.pdf>. The provisional English translation is available at <https://www.kantei.go.jp/jp/singi/keizaisaisei/pdf/en_saikou_jpn_hon.pdf>.

[95] *Ibid.*

[96] *Kokka senryaku tokku hō*, Law 107/2013.

[97] Art. 32 para. 1 of *Kokka senryaku tokku hō*, Law 107/2013.

[98] K. YAMAMOTO, *Chiiki keizai to kokka senryaku tokku* [The Local Economy and National Strategic Special Zones], in: Yasuda (ed.), *Nippon keizai no saisei to kokka senryaku tokku* [Revitalization of Japanese Economy and National Strategic Special Zones] (Tokyo 2015) 10–11.

[99] See, for example, T. CHIBA, *Tokyo ken: kokusai bijinesu inobēshon no kyoten* [Tokyo Area: Central Zone for International Business Innovation], in: Yasuda (ed.), *supra* note 98, 23 et seqq.

[100] See, for example, H. ŌURA, *Iryō wa kansai: kankō to tomoni nihon keizai wo hipparu keizai ken zukuri* [Kansai as the Central Zone of Medical Services: Creation of Economic Zone Leading to the Revitalization of Japan], Zaikai 63 (6) (2015) 54–57.

[101] See, for example, K. UCHIYAMA, *Niigata shi ni okeru kokka senryaku tokku no torikumi* [Projects in the National Strategic Special Zone in Niigata], Kokusai Jinryū 27 (12) (2014) 7–10.

[102] See, for example, T. OKAZAKI, *Kokka senryaku tokku nado ni yoru fukuoka shi no sōgyo shien* [Support for Start-up Businesses in Fukuoka through National Strategic Economic Zones], Kyūshu Keizai Chōsa Geppō 69 (833) (2015) 11–16.

[103] See, for example, S. YASUDA, *Okinawa ken: kokusai kankō tokku* [Okinawa Prefecture: Special Zone for International Tourism], in: Yasuda (ed.), *supra* note 98, 147 et seqq.

"serve as the drill bit" to break through the bedrock of vested interests preventing regulatory reform.[104] In the World Economic Forum 2014 Annual Meeting, he declared, "no vested interests will remain immune from my drill."[105]

Likewise, the role of national strategic zones is to break through the bedrock of regulations in order to promote policy innovation.[106] However, this function of national strategic zones often becomes the subject of criticism mainly from the perspective that there are some regulations that should never be drilled so as to ensure a minimum social security.[107]

For example, there is the criticism that the competition principle of market mechanisms should not be introduced in the fields of education and healthcare since in such fields a uniform quality of service should be realized nationwide.[108] From the perspective that it is meaningful to apply uniform regulations on education and healthcare throughout the country, it is argued that special economic zones for related deregulation should not be adopted.[109]

Similarly, it is criticized that deregulation in the field of labor law should not be carried out in the mechanism of special economic zones considering its social impact.[110]

As reviewed in this sub-section, national strategic special zones were initially conceptualized as a mechanism for promoting deregulation with the purpose of enhancing Japan's global competitiveness. However, the Abe administration additionally manifested the aim of promoting local revitalization in the press conference on 3 September 2014.[111] This political decision affects the operation of national strategic special zones too.

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[104] See, for example, Economic Policy Speech by H.E. Mr. Shinzo Abe, Prime Minister of Japan, Speech of 19 June 2013 at Guildhall, City of London, available at <http://japan.kantei.go.jp/96_abe/statement/201306/19guildhall_e.html>.

[105] A New Vision from a New Japan, World Economic Forum 2014 Annual Meeting, Speech by Prime Minister Abe, Speech of 22 January 2014 at the Congress Centre, Davos, Switzerland, available at <http://japan.kantei.go.jp/96_abe/statement/201401/22speech_e.html>.

[106] K. SAKAMURA, *Kokka senryaku tokku no risō to genjitsu* [Ideal and Reality of National Strategic Economic Zones], Chiginkyō Geppō 648 (2014) 7.

[107] See, for example, T. NAKAJIMA, *Kenpō kara mita "kokka senryaku tokku"* [National Strategic Special Zones from the Perspective of the Constitution], Sekai 859 (2014) 70 et seqq.

[108] KWAK, *supra* note 86, 86–88.

[109] *Ibid.*

[110] S. TŌKAIRIN, *Rūru naki koyō shakai wa yurusenai* [Society without Rules on Employment should not be Allowed], in: Pacific Asia Resource Center (ed.), *Tettei kaibō kokka senryaku tokku* [In-depth Examination of National Strategic Special Zones] (Tokyo 2014) 55 et seqq.

So, in the next sub-section, it is examined how the government has begun to deal with local revitalization as a major topic under Abenomics.

2. Local Abenomics

a) Impact of the Masuda Report

Some commentators pointed out that Abe started to emphasize his policy on local revitalization in the summer of 2014 simply as a preparatory activity for the unified local elections held in April 2015.[112] However, if we put the issue of unified local elections aside, it has often been pointed out that, recently, the major incentive for the government to put great importance on local revitalization has been the growing worry over the population problem in Japan. Accordingly, the following paragraphs examine how concerns over the population problem resulted in the conception of Local Abenomics, which eventually led to the establishment of special zones for regional revitalization.

According to a report released on 21 February 2011 by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), there is the prospect that approximately 60% of the land area in Japan will be unpopulated by 2050 as a result of the continuing depopulation.[113] The report shows that an increasing tendency in population figures can be observed only in 1.9% of the national land, located in the Tokyo and Nagoya areas.[114] This tendency of depopulation in local regions and the concentration of the population in a few urban areas is expected to be even further reinforced by the 2020 Olympics in Tokyo and the introduction of the Linear Chūō Shinkansen Line between Tokyo and Nagoya in 2027.[115]

Amid growing concern over the population problem, the so-called "Masuda Report" made a huge social impact. The Masuda Report is a

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[111] *2014/9/3 Abe naikaku sōri daijin kisha kaiken* [Press Conference of the Prime Minister Abe on 3 September 2014], available at <http://www.kantei.go.jp/jp/96_abe/statement/2014/0903kaiken.html>.

[112] See for example T. OKADA, *Jichitai shōmetsu ron wo koete* [Overcoming the Theory of Local Extinction] (Tokyo 2014) 58.

[113] National Land Development Council of the Japanese Ministry of Land, Infrastructure, Transport and Tourism, *Kokudo no chōki tenbō: chūkan torimatome* [Long-term Prospect of National Lands], 21 February 2011, available at <http://www.mlit.go.jp/common/000135853.pdf>.

[114] *Ibid.*

[115] M. SASAKI, *Sōzō nōson toha nanika, naze ima, chūmoku wo atsumerunoka* [What is a Creative Agricultural Community?: Why does it Receive Attention Now?], in; Sasaki/Kawaida/Haguhara (eds.), *Sōzō nōson: kaso wo kurieithibu ni ikiru senryaku* [Creative Agricultural Community: A Strategy to Live Creatively in Coping with Depopulation] (Tokyo 2014) 10–11.

series of publications warning about the seriousness of population problems written under the initiative of Hiroya Masuda. The first publication was prepared as a policy recommendation by the Declining Population Issue Commission of the Japan Policy Council.[116] The commission released on 8 May 2014 a policy recommendation entitled "Strategy to Stop the Declining Birthrate and Revitalize Local Areas".[117] Then, based on that policy recommendation, Masuda and his study group published an article to demonstrate publicly the result of their "horrendous simulation".[118] Follow-up articles, bearing sensational titles, have been continuously published[119] and edited as books on "local extinction".[120]

As soon as the first publication of the Masuda Report was released on 8 May 2014, the Council on Economic and Fiscal Policy began to discuss the population problem based on the Report, as can be seen in the handout from its committee meeting held on 13 May 2014.[121] The analysis on the population problem depicted in the Masuda Report was also reflected in the "Grand Design of National Land 2050".[122] In this manner, the Masuda Report has had a wide-reaching influence on policy debates in the government.

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[116] The Japan Policy Council is a body of private sector experts aiming to make policy recommendations on socioeconomic problems, including the population problem. The council was established in May 2015 by the Japan Productivity Center, a think tank doing researches on various socioeconomic problems.

[117] The Declining Population Issue Commission of the Japan Policy Council, *Seichō wo tsuzukeru 21 seiki no tameni: stoppu syōshika chihō genki senryaku* [Strategy to Stop the Declining Birthrate and Revitalize Local Areas], Policy Recommendation of 8 May 2014, available at <http://www.policycouncil.jp/pdf/prop03/prop03.pdf>.

[118] H. MASUDA/THE DECLINING POPULATION ISSUE STUDY GROUP, *Senritsu no simyurēshon: 2040-nen chiōshōmetsu: kyokuten syakai ga tōrai suru* [A Horrendous Simulation: Regional Cities Will Disappear by 2040: A Polarized Society will Emerge], Chūō Kōron 1561 (2013) 18–31. The English translation is published in: Discuss Japan – Japan Foreign Policy Forum 18 (2014), available at <http://www.japanpolicyforum.jp/pdf/2014/vol18/DJweb_18_pol_01.pdf>.

[119] See, for example, H. MASUDA/THE JAPAN POLICY COUNCIL, *Sutoppu "jinkō kyūgen syakai"* [Stop the Rapidly Depopulating Society], Chūō Kōron 1567 (2014) 18–43; H. MASUDA/THE JAPAN POLICY COUNCIL, *Tōkyō ken kōreika kiki kaihi senryaku* [Strategy to Avoid the Danger of an Aging Tōkyō Area], Chūō Kōron 1580 (2015) 30 et seqq.

[120] H. MASUDA (ed.), *Chihō shōmetus* [Local Extinction] (Tokyo 2014); H. MASUDA/M. KAWAI, *Chihō shōmetus to tōkyō rōka* [Local Extinction and Aging in Tōkyō] (Tokyo 2015); H. MASUDA/K. TOYAMA, *Chihō shōmetus: sōsei senryaku hen* [Local Extinction: Strategy for Local Revitalization] (Tokyo 2015).

[121] *Mirai e no sentaku (an)* [Choices for the Future (Draft)], Handout for the 7th *sentaku suru mirai* Committee Meeting of the Council on Economic and Fiscal Policy, available at <http://www5.cao.go.jp/keizai-shimon/kaigi/special/future/0513/shiryou_04_1.pdf>.

b) Special Zones for Regional Revitalization

Under the strong influence of the Masuda Report, Tatsuya Itō, the chairman of the Research Commission on Small and Medium-Sized Enterprises and Small Businesses (hereinafter: the Research Commission),[123] formulated and provided the concept of "Local Abenomics" to Abe in their personal meeting at the end of 2013.[124] In the meeting, Abe agreed to the idea and asked Itō and the Research Commission to prepare a policy recommendation on the concept.[125] In compliance with Abe's request, the Research Commission held 10 discussion sessions with experts from March to May of 2014,[126] and the policy recommendation on Local Abenomics was released on 29 May 2014.[127]

The policy recommendation was promptly reflected in the cabinet decision released on 24 June 2014 manifesting the revised growth strategy under the Abe administration.[128] In keeping with the revised growth strategy, the campaign promise of the Liberal Democratic Party for the general election of the House of Representatives on 14 December 2014 manifested the creation of special zones for regional revitalization.

Soon after the general election, on 19 December 2014 the National Strategic Special Zones Advisory Council decided to work on the selec-

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[122] MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM (MLIT), *Kokudo no gurando dezain 2050: tairyū sokushin gata kokudo no keisei* [Grand Design of National Land 2050: Creation of a Country Generating Diverse Synergies among Regions], 4 July 2014, available at <http://www.mlit.go.jp/common/001047113.pdf>.

[123] The Research Commission on Small and Medium-Sized Enterprise and Small Business is one of the research commissions operating under the Policy Research Council of the Liberal Democratic Party.

[124] *Tokushū: rōkaru abenomikusu jitsugen e* [Feature Article: Towards Realization of Local Abenomics], the website of Tatsuya Itō, a member of the House of Representatives, available at <http://www.tatsuyaito.com/feature>.

[125] *Ibid.*

[126] *Kaisai kiroku* [Record of Discussion Session of Experts], available at <http://www.tatsuyaito.com/CMS/wp-content/uploads/2014/05/20140529_kaisaikiroku.pdf>.

[127] The Research Commission on Small and Medium-Sized Enterprise and Small Business, the Policy Research Council of the Liberal Democratic Party, *Chiiki Keizai no kōjunkan jitsugen no tameno teigen: "rōkaru abenomikusu" no jikkō ni mukete* [Policy Recommendation for a Positive Growth Cycle in Local Economies], Policy Recommendation of 29 May 2014, available at <http://www.tatsuyaito.com/CMS/wp-content/uploads/2014/05/20140529_text.pdf>.

[128] *Nippon saikō senryaku kaitei 2014: mirai e no chōsen* [Japan Revitalization Strategy Revised in 2014: Japan's Challenge for the Future], Cabinet Decision of 24 June 2014, available at <http://www.kantei.go.jp/jp/singi/keizaisaisei/pdf/honbun2JP.pdf>. The provisional English translation is available at <https://www.kantei.go.jp/jp/singi/keizaisaisei/pdf/honbunEN.pdf>.

tion of special zones for local revitalization.[129] Then, on 19 March 2015, as the first selection of special zones for regional revitalization – which means the second selection of national strategic special zones – three projects were selected from 206 proposals submitted by 48 local governments and 109 businesses.[130] The three selected zones include Senboku in Akita Prefecture, Sendai in Miyagi Prefecture, and Aich Prefecture. The second selection of special zones for regional revitalization was carried out in December 2015.

In spite of its purpose of local revitalization, as long as they are designated as special economic zones pursuant to the National Strategic Special Zones Act, the special zones for regional revitalization should be expected to work as devices to mobilize local governments in accord with the national goal of overcoming the population problem.[131]

V. Conclusion

From a historical perspective, the rise of special economic zones in Japan may be traced back to the social regime advanced in World War II. In the late 20th century, as a result of the continuing operation of the "well-balanced land development" principle, which had been originally formulated decades earlier as a means of supporting total war, the government could not actively participate in the policy debates on the possibility of introducing special economic zones in Japan, with the exception of Okinawa. The earliest special economic zone that appeared in Okinawa was, moreover, initially established under American military occupation.

From the beginning of the 21st century, released from the influence of the "well-balanced land development" principle, the government started to discuss the possibility of pursuing the aim of structural reform through socioeconomic deregulation experiments in the form of special economic zones. In this manner, the post-war shift from a policy of "national minimum" to a policy of "local optimum" has led to the development of several types of special economic zones aimed at stimulating the national economy in Japan.

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[129] Minutes of the 10th meeting of the National Strategic Special Zones Advisory Council, 19 December 2014, available at <https://www.kantei.go.jp/jp/singi/tiiki/kokusentoc/dai10/gijiyoushi.pdf>.

[130] *Chihōsōsei tokku, akita, senboku to sendai to aichi ni, seihu kettei* [Government Decides to Select Senboku in Akita, Sendai, and Aichi as the Special Zones for Local Revitalization] 19 March 2015, Nihon Keizai Shinbun.

[131] H. SHINDŌ, *Mietekita abe naikaku no chihō seisaku* [Perspective on the Local Policies of the Abe Cabinet], Chingin to Shakai Hoshō 1625–1626 (2015) 14.

The Structure and Functions of Special Economic Zones

Toshiyuki Kono/Kazuaki Kagami

I. Introduction

Special Economic Zones (SEZs) have recently been drawing attention as useful policy tools. There are many similar concepts to SEZs, such as industrial estates (IEs), industrial parks (IPs), industrial clusters (ICs), free ports (FPs), free trade zones (FTZs), free commercial zones (FCZs), duty free zones (DFZs), and export processing zones (EPZs).[1] Economic development

[1] Regional industrial agglomerations could be added to this list as well.

needs innovation. Innovation depends upon each region's specificities.[2] Regionally-focused policy tools and region-specific phenomena affect each other.[3] We therefore focus on those policy tools that target a specific geographic area for economic development, and illustrate existing policy tools to chart the role of law.

II. Preliminary Discussions

1. Definition of SEZ

External features of SEZs differ, and include geographical location and area, the number of offices located in the SEZ, the composition of industries in the SEZ, as well as the purpose and functions of the SEZ.[4] Earlier literature tried to classify and divide SEZs into a number of subcategories, in accordance with their purpose, function, structure or components. Such classification is useful for collecting data under specific conditions. But, for the aims of this article – to illustrate the various SEZs and chart the role of law – the definition of SEZs should cover as many types of SEZs as possible.[5] Secondly, in order to see the link to law, SEZs should be differentiated from naturally occurring industrial zones. The involvement of public authorities should therefore be included in the definition of an SEZ.[6] Thirdly, this article assumes that both formal and

[2] OECD, Regions and Innovation: Collaborating across Borders, OECD Reviews of Regional Innovation (2013); OECD, Innovation-driven Growth in Regions: The Role of Smart Specialisation, OECD (2013).

[3] Some of the literature implies the similar recognition. See A. AGGARWAL, Special Economic Zones: Revisiting the Policy Debate, Economic and Political Weekly (4 November 2006) 4533–4536, and T. FAROLE, Special Economic Zones: What Have we Learned?, The World Bank Economic Premise 64 (Washington DC 2011)

[4] FIAS, Special Economic Zones: Performance, Lessons, Learned and Implications for Zone Development (The World Bank, Washington DC 2008); MENA-OECD Investment Program, Towards Best Practice Guidelines for the Development of Economic Zones, A Contribution to the Ministerial Conference by Working Group 1 (Marrakech 23 November 2009) 4. FAROLE, *supra* note 3, 23; T. FAROLE/G. AKINCI (eds.), Special Economic Zones: Progress, Emerging Challenges, and Future Directions, The International Bank for Reconstruction Development/The World Bank (Washington 2011) 3; D. ZHIHUA ZENG, Global Experiences with Special Economic Zones (Investing in Africa Forum) (Washington DC 2015).

[5] FAROLE/AKINCI, *supra* note 4, 23 proposes a broader definition than others, but seems to apply existing specified types to SEZs.

[6] Privately established and managed economic zones have been increasing. It is therefore necessary to analyze what the role of public entities should be and to what they could contribute. FIAS, *supra* note 4, 18 reported that the number of privately established zones was considerably larger than that of publicly established zones (see also 45–47). For more detail, see FAROLE, *supra* note 3, 37–40.

informal rules are equally important as business conditions.[7] Formal rules include taxation and regulations, while informal rules include custom and trust. Some earlier works focus only on formal rules and assume that powerful government could produce ideal results through its laws and policies.[8] Some other articles pay attention only to informal rules and claim that autonomous and desirable results can be achieved without public policy.[9] But this article follows none of these approaches. Fourthly, since the link to law is our concern, business conditions in SEZs must be supported by public authorities. This means not only their control and regulations, but also indirect support which affects business conditions. Examples of such indirect support include the standardization of specific types of techniques for the purpose of nurturing future workers; the establishment of places or opportunities for information exchanges; and the introduction of conflict resolution schemes where existing customs and cultures are taken into consideration.

From these considerations, an SEZ is defined in this article as:

A specific area established by policy, with the involvement of public authorities, in order to accelerate economic development in a broader sense, in which region-specific business conditions are publicly supported.

2. *Overview of SEZs*

SEZs were developed in the 1960s and expanded rapidly from the 1970s.[10] According to Boyenge, while in 1986 there were 176 EPZs in 47 countries, approximately 3,500 EPZs existed in 130 countries in 2006 (Chart 1).[11]

Chart 1: The number of EPZs[12]

Year	Countries	EPZs
1975	25	79
1986	47	176
1997	93	845
2002	116	3,000
2006	130	3,500

[7] See A. RODRÍGUEZ-CLARE/F. RODRÍGUEZ/R. FISCHER, Coordination Failures, Clusters, and Microeconomic Interventions [with Comments], Economía 6:1 (2005) 1–42.

[8] For example, H. CHRISTIAN and A.W. SCHULZE, The Legal Implications of the Establishment of Free Trade Zones in South Africa, The Comparative and International Law Journal of Southern Africa, 31:1 (1998) 1–17 regarded law as almighty.

[9] For example, OECD, National Innovation Systems (1999) 41–42 did not mention the role of law, while it considered policy implications.

[10] About the history of SEZs, which could go back the Roman period, see FAROLE, *supra* note 3, Ch. 2.

[11] J. P. S. BOYENGE, ILO Database on Export Processing Zones, Revised (Geneva 2007).

[12] BOYENGE, *supra* note 11, 1.

In fact, as Farole and Akinci[13] illustrate, SEZs have played an important role in attracting investment and creating jobs, and have contributed to the economic development of the country. However, there have recently been important changes and new phenomena, which this article deals with later.

3. Traditional types of SEZs

Earlier literature tends to focus on the purpose and structure of SEZs,[14] but we differentiate SEZs according to their functions: (1) the expansion of transaction volumes and (2) the promotion of manufacturing.

a) Basic stance of differentiation

As we have seen above, there are many similar concepts to SEZs. However, it is generally recognized that EPZs and SEZs are closely linked. For example, in China, SEZs means "EPZ in China", which means that an SEZ is a subcategory of an EPZ.[15] However, the current leading opinion takes the position that various types of EPZ led to the expansion of the concept of the EPZ and a transformation to SEZs.[16,17] In this context, the SEZ is the umbrella concept of regulatory policy with regional focus,[18] to which an EPZ is subject as a subcategory.[19] This position is similar to our basic stance in defining the SEZ broadly.

SEZs emerged as a type of zone where two functions were combined: the expansion of transaction volumes (E of T/V) and the promotion of manufacturing (P of M) (ILO, World Bank)[20]. Therefore, a useful criterion to classify SEZs would be on the basis of which of the two functions is more empha-

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[13] FAROLE/AKINCI, *supra* note 4

[14] See FIAS, *supra* note 4, 3. Also OECD, Towards Best Practice Guidelines for the Development of Economic Zones, A Contribution to the Ministerial Conference by Working Group 1 (Marrakech 23 November 2009); FAROLE/AKINCI, *supra* note 4.

[15] ILO, Economic and social effects of multinational enterprises in export processing zones (Geneva 1988) 4–5.

[16] The concept of EPZs has been expanded to be more comprehensive and general in the 2000s. See M. ENGMAN/O. ONODERA/E. PINALI, Export Processing Zones: Past and Future Role in Trade and Development, OECD Trade Policy Working Paper No. 53 (Paris 2007).

[17] AGGARWAL, supra note 3, 4533‑4536 posited expressly that the concept of EPZs had been replaced by that of SEZs.

[18] K. J. HAZAKIS , The rationale of special economic zones (SEZs): An Institutional Approach, Regional Science Policy & Practice 6:1 (2014) 86, said, "[u]sually, research efforts do not clarify how special a free zone's regulatory framework should be before it can be considered as a SEZ."

[19] The recent literature, such as FIAS, *supra* note 4, and FAROLE/AKINCI, *supra* note 4, take the same position.

[20] ILO, *supra* note 15, WORLD BANK, Export Processing Zones (Washington 1992).

sized. For examples, free ports, free trade zones and free commercial zones are SEZs which mainly focus on the expansion of transaction volumes. On the other hand, industrial estates and industrial parks are SEZs where emphasis is put on the promotion of manufacturing. The EPZ has both functions at the same time. Duty free zones were used either as SEZs with both functions or as SEZs with one of these functions, but they were later accepted as a similar concept to EPZ. These different SEZs types can be summarized as in Chart 2.

Chart 2: The classification of SEZs

P of M / E of T/V	Emphasized	Not emphasized
Emphasized	EPZs (Duty free zones)	Free ports Free trade zones
Not emphasized	Industrial estates Industrial parks	

b) Type I: Expansion of transaction volumes

This type of SEZ is expected to be a hub for the flow of goods, information and merchants by introducing and maintaining appropriate business conditions to for the expansion of transaction volumes. Hong Kong is a good example of this type of SEZ. Some SEZs in this category specialize in a specific type of transaction, such as financial transactions.[21]

Appropriate business conditions to expand transaction volumes include the reduction of taxes and tariffs, the simplification of procedures and deregulation concerning transactions, storage or transfers. These concern not only hard infrastructure such as traffic systems or storage facilities, but also soft infrastructure such as financial services, the judiciary or the police.

In addition, technology would be a crucial condition to establish SEZs of this type. For example, the availability of technologies for transportation, storage and communication are decisive to determine where large-scale SEZs could be located. In addition, geography could be a condition for large-scale transactions.[22]

c) Type II: Promotion of manufacturing

This type of SEZ is expected to be a hub of production by attracting manufacturers through the introduction and maintenance of an appropriate business environment for manufacturing. Some SEZs of this type are self-organized,

[21] For examples, City of London, Wall Street of New York, Frankfurt am Main, and Dubai.

[22] L. P. BUCKLIN, A Theory of Distribution Channel Structure (Berkeley 1966).

while others are developed by policy. Self-organized SEZs have traditionally been considered to be key for industrial development.[23] But they have recently drawn attention again as key for innovation. The contribution of space economics should be noted in this context.[24]

d) Type III: Hybrid

From the 1970s a new type of SEZ has emerged where the two above-mentioned policies are combined. Its pioneer was Shannon District in Ireland, developed in 1959, where materials and parts were imported from outside the District, processing and manufacturing took place within the District and the final products were exported outside the District. Since then this type of SEZ has been established all over the world as an EPZ or duty free zone.[25] In this type of SEZ, neither manufacturing nor transaction could be completed within the area of the SEZ. Therefore the link between the area of the SEZ and neighboring areas is the key to success. The following are a list of conditions for success: first, labor, energy and materials should be supplied economically and in a stable fashion from neighboring areas; secondly, direct investment or technology transfer from outside of the area should take place smoothly; thirdly, sales outside of the area, tax reduction, deregulation and the simplification of procedures should be promoted. Until the 1980s, the promotion of manufacturing was more important than the expansion of the volume of transactions, but since the 1990s both functions have been better integrated.[26]

e) Changes to the SEZ's character

The above-stated types of SEZs presume that the structural factors which would frame the conditions of business activities remain fixed. Based on fixed structural factors, SEZs were designed to expand transaction volumes or promote manufacturing. However as long as such conditions are fixed, expected outcomes would be limited.[27] For example, if cheap labor or materials were exhausted, or if direct investment from outside of the SEZ area is diminished, the SEZ would face serious risks. If another area were to be developed

[23] We will discuss this in section IV.6.

[24] M. FUJITA/P. KRUGMAN/A. J. VENABLES, The Spatial Economy: Cities, Regions, and International Trade (Cambridge 1999).

[25] WORLD BANK, *supra* note 20, 1 explains: "The EPZ thus combines two critical features: it is both an industrial estate with links to trade infrastructure and a policy instrument providing suitable trade and regulatory regimes."

[26] See FAROLE/AKINCI, *supra* note 4.

[27] For example, see S. CHISHTI, Myths and Realities, Economic and Political Weekly 20:14 (1985) 588–589, pointing out that the benefits of SEZs would decline in the long-run. Actually, ILO *supra* note 15, 2 shows that a considerable number of cases of failure appeared in the period of 2002–2006.

as a new SEZ, which could supply similar products more cheaply, investments would stop flowing into the area of the first SEZ.
Therefore, since the 1990s, SEZs have been changing in nature from static to dynamic-function-oriented.[28] This change is still on-going today and leads SEZs toward the promotion of structural reform.

4. Contemporary types of SEZs

a) SEZs to promote structural reform

This type of SEZ is designed to fundamentally change SEZ-specific business conditions in the longer term, instead of fixing them. Such SEZs often aim at achieving some bigger goals rather than direct effects. For example, foreign direct investment, the number of jobs and the transfer of technology are often expected to be direct effects of SEZs. However in SEZs with dynamic perspectives, such effects may not be so important. Although an SEZ could increase the volume of foreign direct investment, it may not be highly valued if it did not lead to reforms of industrial structures, the enterprise system, the financial system, the property system, or insolvency schemes. Similarly, an increase in the number of jobs would not be appreciated, if it is not accompanied by improvements in the level of labor skill, the educational system, or the social welfare system. The same applies to the transfer of technology if it does not lead to the nurturing of entrepreneurs or the promotion of the research and development system. We could label such types of SEZs, which are oriented towards dynamic functions, SEZs for the promotion of structural reforms.

b) Role of law

If we focus on the dynamic functions of SEZs, the role of law becomes more important for the development and management of SEZs. This is because this type of SEZ aims at fundamental changes of business conditions, which is ultimately close to the comprehensive reform of social systems. For example, to increase foreign direct investment or the number of jobs would need deregulation to some extent, but for fundamental changes, a series of laws, such as corporate law, financial law or labor law should be properly developed and established.

c) Dilemma

SEZs are popular in the contemporary context, especially because of their dynamic and reforming functions. SEZs to promote structural reform need a set of conditions, such as sophisticated management, a stable political regime

[28] See FAROLE/AKINCI, *supra* note 4, 13–17.

and a strong legal system.[29] On the other hand, the structural reform could alter these conditions radically. If such changes are not accepted by the majority in a country, SEZ-policy might be neglected, even if it were desirable for the country as a whole.[30] This would apply especially to developed countries, since a number of stakeholders who have vested rights under the pre-SEZ regime and fear the loss of their interests and privileges would be against such policy measures.[31]

5. Two analytical perspectives: macro and micro

Previous sections have illustrated how SEZs have been developing and that objectives of scientific analysis have been getting more complex. We adopt two analytical approaches in this article: macro and micro analysis. Macro analysis takes the SEZ as a unit and focuses on relationships between SEZs and other areas. Macro analysis does not analyze the internal structure or the mechanical workings of SEZs. Micro analysis, on the other hand, takes an SEZ as a complex system with various components and focuses on its internal structures and mechanisms as well as its intra-relationships and appropriate designs. In previous discussions, these two approaches were not clearly differentiated. This has also complicated the legal discussions on the topic.

III. Macro Analysis

1. Introduction

Macro analysis takes the SEZ as a single unit or institution and is interested in its functions. For example, according to FIAS[32] and Farole,[33] SEZs are designed to achieve the following four policy objectives:

(i) Attracting foreign direct investment (FDI);
(ii) Serving as "pressure values" to alleviate large-scale unemployment;
(iii) Supporting a wider economic reform strategy; and

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[29] See FAROLE, *supra* note 3, Ch. 6 and 7, and ZENG, *supra* note 4 (especially 5–6).

[30] This idea is implied in D. C. NORTH, Structure and Change in Economic History (New York 1989) Ch. 3.

[31] The factors behind the success of SEZs in China include not only strong and continuous support by the central government, but also restraints on over-intervention by the central government because of the distance of SEZs from Beijing. See ZENG, *supra* note 4 and M. RUIS, The Anatomy of Special Economic Zones (colloquial: Urban and Architectural Research and Development 2012), <www.cllql.com>.

[32] FIAS, *supra* note 4.

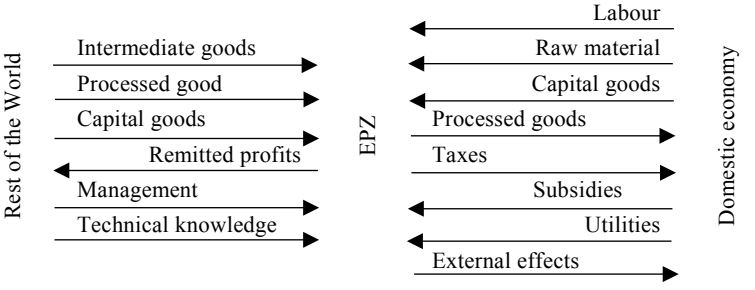
[33] FAROLE, *supra* note 3, 1.

(iv) Acting as experimental laboratories for the application of new policies and approaches.

All of them are based on the macro perspective.

Empirical analyses of SEZs often adopt the macro approach. Warr[34] for example, the first work of cost-benefit analysis, focusing on EPZs, treats the EPZ as a single player and evaluates flows between the EPZ and other players from monetary viewpoint (chart 3).

Chart 3: Flows between an EPZ and other areas (players)[35]



These examples show that a macro approach was adopted in mainstream discussions on SEZs. It is notable that discussions on SEZs in the 1980s, as Warr's model illustrates, simplified the types of players, such as the developing country as "own country" and the developed country as "foreign country". However, boundaries between countries could become blurred, much like those of member countries of the EU. In addition, economic development often occurs on a regional level, not on a state level. Hence discussions solely based on state-to-state relationships are inappropriate. Therefore we adopt the following concepts to support classification:

- *Surrounding area of the SEZ:* an area which is another player under the same authority and geographically close to the SEZ, but under different business conditions;
- *Other SEZ in the same country:* an area which is another player under the same authority, but geographically remote and under different business conditions;
- *Another SEZ in a foreign country:* an area which is a player under foreign authority, geographically close or remote and under different business conditions.

[34] P. G. WARR, Export Processing Zones: The Economics of Enclave Manufacturing, World Bank Research Observer 4 (1) (1989) 65–88.

[35] Source: WARR, *supra* note 34, 76, Figure 2.

Business conditions include abundant funding, sophisticated technology, vast demand, cheap labor and/or energy, excellent managers and entrepreneurs.

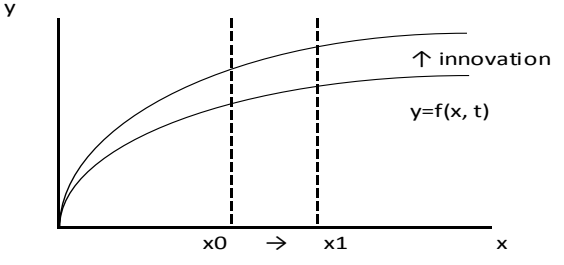
2. Isolated SEZs

This is the simplest type of SEZ, where the SEZ is separated from all other areas and all activities and outcomes can be completed in the area of the SEZ. This type of SEZ is usually not the subject of analysis. Adopted policy measures could be justified only in relevant SEZs.

a) Development of the isolated SEZs

The success or otherwise of an isolated SEZ is determined by the volume and price of resources (capital, labor force, materials, energy, etc.) put into the area, the level of available technology (for sale, production, management, etc.) and its costs. Needless to say, if a greater volume of cheaper materials is acquired and better and cheaper technology applied, excellent outcomes could be expected. The following graph illustrates this (*x:* input, *t:* technological level, *y:* output, *f:* mapping between inputs and outputs) (Chart 4)[36].

Chart 4: Production function of the isolated SEZ



In order to increase *y*, either *x* should be increased or the transformation from *x* to *y* should be more efficient by improving the technological level through innovation. If an increase in *y* is chosen, the following points should be noted: if the availability of funding, the labor force or real property is limited, it would be difficult to input more. If input is costly, the situation is similar. If adjustment costs,[37] such as costs for training or education, are high, input would similarly be discouraged.

[36] Although both input *x* and output *y* are a set of several factors in general, we take them as single factors for the sake of simplicity.

[37] The adjustment costs for growth had never been discussed explicitly before E. T. PENROSE, The Theory of the Growth of the Firm (Oxford 1959). This book was influential in rapidly advancing both investment theory and growth theory.

b) Implication for policy

Isolated SEZs could develop only if various business resources are abundant and properly used. Institutions that enable these resources to expand and which facilitate their use should be established. For this purpose, property law, contract law, company law, labor law and IP law are especially important.[38] In addition, reducing adjustment costs is indispensable.

3. SEZs and the link to surrounding areas I: Static functions

SEZs usually have certain links to neighboring areas. The following functions are typically performed through these links.

a) Supply of business resources

Certain types of business resources, such as underground resources, agricultural products, aquatic resources, and energy are unevenly distributed. If the transportation costs of certain types of resources are high, the choice of supply center will be limited. Thus industries which need specific types of resource have often been developed in areas very close to the supply center of such resources.[39] In such cases, the development of the original industries could stimulate other types of business activities.

Another example of supply is labor. Cheap access to a pool of disciplined workers with excellent skills is not always possible. But labor is different from underground resources: First, the mobility of workers often depends on cultural or institutional factors. Accordingly, whether labor in surrounding areas of an SEZ is available or not cannot be determined solely on the basis of geographical distance. Secondly, while labor constitutes a resource input into a specific area, workers are also consumers in the area of SEZ as well as its surrounding areas. Therefore employees in an SEZ not only contribute to consumption in the SEZ, but also bring about spreading effects in surrounding areas.

b) Trickle-down effect – spreading from SEZs to its surrounding areas

SEZs could spread their effects throughout their own zones and surrounding areas in two possible ways. If the salaries of workers in an SEZ were to be increased, employees would spend more money in the surrounding areas of the SEZ as well, which would contribute to the economic development of these areas. This is called as trickle-down effect.[40]

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[38] See D. C. NORTH/R. P. THOMAS, The Rise of the Western World: A New Economic History (Cambridge 1973).

[39] For the main concepts and methods, see A. WEBER, Alfred Weber's Theory of the Location of Industries, English edition, with an introduction and notes by Carl Joachim Friedrich (Chicago 1929).

Trickle-down is dismissed in general discussion,[41] where trickle-down means making wealthy people wealthier as a trigger of economic development. In the context of SEZs, trickle-down is defined differently and its hypothesis is that the process of some people in an SEZ who are not wealthy becoming rich will act as a trigger for others outside of the SEZ themselves becoming wealthy. As long as this hypothesis holds, SEZs could facilitate the growth of the society.

c) Spillover – spreading effects from SEZs to surrounding areas

Another way of spreading an SEZ's effects is spillover or linkage effects: knowledge, skills or technologies of the SEZ could be transferred to surrounding areas, and the surrounding areas could further develop. It could happen through transactions or cooperation between business people in the SEZ and the surrounding area, through workers' moving from the SEZ to other municipalities, or through technology transfer from the SEZ by setting up companies or obtaining jobs in surrounding areas. It would be rare that technology would be transferred from abroad without these processes.[42]

The kind of technology and the extent to which it can to be transferred cannot be determined *a priori*, as it depends on the recipient's capacity and level of technology. To be noted in this context is that industries with similar and inferior technology in surrounding areas may be extinguished as a result of competition with the SEZ.[43]

d) Outflow of business resources from surrounding areas

Outflow of resources from surrounding areas means that specific business resources are supplied to SEZs from those surrounding areas. This happens as long as the market economy properly functions. As a result of outflow, supply could decrease and prices may go up in these surrounding areas. This would badly impact the economy of these areas. The development of the SEZ would then lead to the impoverishment of its surrounding areas. On the other hand, if the SEZ were to hire jobless people from surrounding areas, both the SEZ and surrounding areas may concurrently develop.[44]

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[40] See Y.-S. CHENG/J. Y. S. CHENG/Y. ZHENG, China in the Post-Deng Era (Hong Kong 1998); and A. PALIT/S. BHATTACHARJEE, Special Economic Zones in India: Myths and Realities (Anthem South Asian Studies) (London, New York 2008).

[41] See OECD, Focus on Inequality and Growth, December 2014, <https://www.oecd.org/social/Focus-Inequality-and-Growth-2014.pdf>.

[42] See FAROLE/AKINCI, *supra* note 4, 188.

[43] P. AGHION et al., The Effects of Entry on Incumbent Innovation and Productivity, The Review of Economics and Statistics 91:1 (2009) 20–32.

[44] See J. R. HARRIS/M. P. TODARO, Migration, Unemployment and Development: a Two-Sector Analysis, American Economic Review 60 (1970) 126–142.

e) Diverse conditions for business activities

If an SEZ and its surrounding areas have divergent conditions for business activities, these conditions could be considered a local public good.[45] Consider, for example, an SEZ in which the fundraising costs are high, but the sanction in the event of insolvency is not severe, while in its surrounding areas there are less-costly fundraising opportunities with more severe sanctions in the event of insolvency. Under such circumstances, if players' mobility is sufficiently high, those who prefer the business conditions in the SEZ would move into the SEZ. Through such a voluntary choice, the social welfare of the SEZ and its surrounding areas could be better off. In this context, one thing to be noted is the timing of choice. If business people prefer a less-costly system at the time of fundraising, while they want to avoid severe sanctions later in the event of insolvency, their mobility may be restricted or an inter-temporal mechanism between the two systems should be created. Conflict of laws could contribute to deepening this consideration.

f) Implications for policy making

Collaboration between an SEZ and its surrounding areas has been taken into consideration in policy-making practice. As SEZs in developed countries do not need to collaborate with foreign countries, more attention should be paid to collaboration with surrounding or other remote regions in the same country. Smart Specialization Policy in EU is a good example of this model.[46]

4. SEZs and the link with surrounding areas II: Dynamic functions

This section focuses on the dynamic functions of the link between SEZs and their surrounding areas. The analysis here may apply also to the link with other remote areas in the same country.

a) Policy laboratory

This is one of the most popular goals of SEZs with dynamic functions: If there is some risk in implementing a policy on the national level, SEZs could be used as a laboratory to experiment with the policy.[47] For example, some policy change is on the national or local level agenda, but there is uncertainty as to the effects of the new policy. In the event of failure significant sunk costs may result. Therefore the new policy should be trialed in a smaller area.

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[45] We will examine this in IV.4.c) in detail.

[46] D. FORAY/P. A. DAVID/B. HALL, Smart Specialisation – The Concept, Knowledge Economists Policy Brief No. 9 (June 2009), European Commission.

[47] See FAROLE/AKINCI, *supra* note 4, 13–17.

The policy could be expanded if it is successful in the area. In this way, better policies could be introduced, avoiding the risk of huge loss.[48]

This argument has been developed to determine which approach to adopt, gradualism or the big bang. SEZs were introduced, favoring gradualism, especially in developed countries, to avoid the potentially huge costs resulting from failure. However gradualism may not achieve its goal. Say, for instance, two areas, A and B, adopt the same policy, Y, but its benefit is an unsatisfactorily "2" in each area. X as new alternative policy could bring about benefit of "10", providing both areas would adopt X. But if only A changes its policy to X, it would bring about loss of "-15" to A and benefit of "1" to B. If this situation could be known to A, A would maintain its new policy X and wait until B changes its policy to X. However, the fact that SEZs are used experimentally implies that both A and B do not know, or are uncertain, whether they each could benefit by "10", provided that both of them would adopt X. As soon as A suffers a loss of "-15", the experiment as SEZs would be evaluated negatively by B and B would stop introducing X. Hence, a policy experiment based on gradualism would not work. In other words, in order for an SEZ to be successful as a policy experiment, certain perspectives for the structure of the game between A and B should be shared by both areas (see Chart 5).

Chart 5: Case of coordination failure

A \ B	Policy X	Policy Y
Policy X	10, 10	-15, 1
Policy Y	1, -15	2, 2

b) Breakthrough to change policies and institutions – the order matters

This is also based on gradualism. Uncertainty is not presumed in this case, but there are several policy change processes. And the costs of change differ, depending upon what process is chosen. Consequently a total change of policy could be possible only through a specific process. An SEZ could be used as a milestone of this process.[49]

For example, areas A and B adopt policy Y, and the benefit for each area is only "2". If area B changes its policy to X, each area would be worse off. If area A changes its policy to X, its benefit increase from "2" to "4" without detri-

[48] M. DEWATRIPONT/G. ROLAND, The Design of Reform Packages under Uncertainty, American Economic Review 85 (1995) 1207–1223.

[49] See R.FERNANDEZ/ D. RODRIK, Resistance to reform: status quo bias in the presence of individual-specific uncertainty, American Economic Review 85 (1991) 1146–1455, and S.-J. WEI, Gradualism versus Big Bang: Speed and Sustainability of Reforms, The Canadian Journal of Economics/Revue canadienne d'economique 30:4b (1997) 1234–1247.

mentally affecting area B. If area A were to change its policy to X first, the subsequent policy change in area B would lead to both areas being better off.

Chart 6

A \ B	Policy X	Policy Y
Policy X	10, 10	4, 2
Policy Y	1, -5	2, 2

An SEZ could function as a breakthrough in such a case. For example, changing, on the national level, a heavily-controlled planned economy to a market economy could be messy. Therefore, only after institutions necessary for a market economy are created (for example, a corporate system, a financial system, a legal systems, a legal service, etc.) and capacity building is made (for workers, lawyers, managers, etc.) in a restricted area, can a market economy be expanded nationwide.

5. SEZs linked to foreign countries

a) Introduction of resources

SEZs usually do not have all necessary resources, which include capital and technologies, to achieve their goal. Production could be enhanced by introducing resources from abroad.[50] The technology needed could be technology for manufacturing, the management of production process, the formation of business organizations, the promotion of sales, and customer acquisition.[51]

Let's assume that in area A resource *a* is cheap and abundant, but its transportation costs are high and its direct export not possible. In area B, resource *b* is cheap and abundant and its transportation costs are zero. In area A, obtaining *b* is not possible, while in area B *a* is not obtainable. To simplify the situation, we assume that the prices of *a* and *b* are zero and do not change.[52] The price of final product is *p*. The production function in areas A and B is respectively f^A and f^B. The existing amounts of resource *a* and *b* are also labelled *a* and *b* respectively.

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[50] As a recent survey of international capital movement and FDI, see S. KURTISHI-KASTRATI, Impact of FDI on Economic Growth: An Overview of the Main Theories of FDI and Empirical Research, European Scientific Journal 9:7 (2013) 56–77; and D. NAYAK/R. N. CHOUDHURY, A Selective Review of Foreign Direct Investment Theories, United Nations ESCAP, Working Paper No. 143 (March 2014).

[51] This analysis is inspired by G.D.A. MACDOUGALL, The Benefits and Costs of Private Investment from Abroad: A Theoretical Approach, Economic Record 36:73 (1960) 13–35.

[52] Therefore, it is optimal to input all available resources.

If business resources do not move from one area to another, i.e. there is no link between two areas, only business resources available in each area would be installed. Hence the profits of area A would be $pf^A(a, 0)$ and in area B $pf^B(0, b)$.

Assume b^* is transferred from area B to area A and its price r is paid. This transfer changes the profit in area A to $pf^A(a, b^*) - rb^*$ and the profit in area B to $pf^B(0, b-b^*) + rb^*$.

As long as profits in both areas increase, resource b would be transferred more. In this case, the two areas are better off through the link between them. This is an advantage of free trade.[53]

Chart 7

	No link	Transfer of business resource b for price r
Area A	$pf^A(a, 0)$	$pf^A(a, b^*) - rb^*$
Area B	$pf^B(0, b)$	$pf^B(0, b-b^*) + rb^*$

The quantity of business resources b which A would obtain is determined by the level at which A's profit could be maximized. If an increase in A's profit is bigger than its costs in obtaining the resources, the transfer of b will take place, i.e. transfer of resources b will take place in case of $[pf^A{}_b - r > 0]$, and the optimal quantity of b is such quantity which makes $[pf^A{}_b - r = 0]$.[54] On the other hand, the quantity of outflow from area B is determined by the level at which area B's profit could be maximized. If the remuneration received for the outflow exceeds the decrease in profit caused by the outflow, a transfer will take place, i.e. in the case of $[-pf^B{}_b + r > 0]$, outflows of b will take place and the quantity which makes $[-pf^B{}_b + r = 0]$ is optimal.[55]

If A imposes a tax with rate t on inter-regional transfers of resources rb^*, transferrable resources would be $(1\text{-}t)rb^*$. B will allow the outflow of resource b insofar as $-pf^B{}_b + (1 - t)r$ is bigger than zero. Raising tax would restrict the outflow of resources from B. If area A wants to receive more of resources b, area A should reduce tax.

If area A improves its business conditions, such as its infrastructure or legal system, productivity in A improves. $f^A{}_b$ would be expanded by additionally brought resources b. This would raise the unit price r to be paid to B. Outflows of resources b into A would be further incentivized. Hence, if A wants

[53] To grasp the overview of economic theory of international trade, see R.C. FEENSTRA, Advanced International Trade: Theory and Evidence (Princeton 2003).

[54] We denote $f^A{}_b$ as an incremental product by increasing a unit of resource b input into area A.

[55] We denote $f^B{}_b$ as an incremental product by increasing a unit of resource b flowing out of area B.

to obtain more resources from B, A should improve those business conditions which could enhance the productivity of resources *b*.

It may be difficult for A to reduce the tax rate only in order to increase the quantity of *b* from B, since it would distort A's taxation system. Business factors in favor of increasing the quantity of resources *b* may not be relevant for other business considerations. In addition, improving the entire infrastructure in area A would need excessive expenditure. SEZs can be justified in this context, i.e. if the reduction of tax or improvement of business conditions could be arranged only within a small area (SEZs), the above-mentioned problems could be avoided. It must be noted, however, that an SEZ's effectiveness as a tool for attracting business resources from abroad depends upon several external factors, such as the existing volume of business resources, its prices, transportation costs, production functions, producer prices, etc.[56]

b) Expansion of exportation

If the supply of products in a specific area drastically increases as a result of some policy measures, demand in the area and surrounding areas may not be sufficient to absorb it. Therefore products from SEZs should be transported to remote places (in the same country or foreign country) for sale. In this context there are two issues. One is the impact on the foreign market where the products should be sold. As a result of the rise in exportation, the price of the products would go down. And because of competition with others, the quality and service would improve. Hence consumers would benefit. On the other hand, conventional suppliers would suffer from a lower income, i.e. lower prices, decreases in sales, and increases in the costs of sales promotion and product development.

Another issue is conflict of laws. Business conditions in an SEZ are usually designed for the SEZ's specific purpose, thus its business conditions tend to be different from other countries'. Therefore, when products are exported to other countries, business activities in an SEZ may collide with other countries' laws. For example, exportation from an SEZ where manufacturing is more important than consumer protection, to other countries where the protection of the consumer is crucial, could cause problems.[57] The way to avoid such conflicts or, in the event of failure, deal with the legal consequences should be further elaborated.

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[56] In fact, empirical studies have found few evidence that capital movements or technology transfers from foreign countries could contribute directly to the growth of the domestic economy. See KURTISHI-KASTRATI, *supra* note 50.

[57] L. E. RIBSTEIN/E. A. O'HARA O'CONNOR, From Politics to Efficiency in Choice of Law, University of Chicago Law Review 67 (2000) 1151.

c) Support of infant industry

A country may support still undeveloped industries, hoping that these undeveloped industries would lead its economy in the future. There are mainly two ways to develop infant industries. First, by restricting inflow of competing products or the business activities of competing companies, for example, by applying tariffs or non-tariff barriers. The restriction of foreign investment or the foundation of foreign companies could be introduced in this context. Second, infant industry could be directly supported by various means, such as subsidies, loans, or mergers and acquisitions.

The protection of infant industries began as early as the 19th century and is still often attractive to policy makers. This policy however means shifting certain resources from the country's more competitive industries to the infant industry, worsening the otherwise-more-competitive business conditions of the country and subjecting its residents to more expensive and insufficiently supplied products. For the short term, the welfare of the country would worse off. Therefore, unless the infant industry could bring about bigger benefits than the lost welfare, this policy could hardly be justified.[58] In fact, according to various research papers, most of supported infant industries have not developed further.[59] This is because many industries prefer to be supported rather than be engaged in competitive struggle, and once supported the industry would lose incentives to improve productivity. Therefore careful examination is needed to judge whether infant industry should be supported.[60]

d) Inter-regional competition[61]

SEZs may be established not by central government, but by local authorities. In this case, each area would try to differentiate its business conditions from others for survival in the competitive marketplace. Such competition positively affects the country's or world's welfare. This idea is in principle similar to the inter-state competition in the US[62] or the Smart Specialization policy in the EU.

It should be noted that inter-regional competitions do not always result in desirable outcomes, such as the formation of efficient business conditions and

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[58] M. C. KEMP, The Mill–Bastable Infant Industry Dogma, Journal of Political Economy 68 (1960) 65–67.

[59] Much and varied empirical research has been accumulated after A. O. KRUEGER/B. Tuncer, An Empirical Test of the Infant Industry Argument, American Economic Review 72:5 (1982) 1142–1152. See NATHAN ASSOCIATES INC., Infant-Industry Protection and Trade Liberalization in Developing Countries, Research Report (USAID/Washington May 2004).

[60] G. M. GROSSMAN, Promoting New Industrial Activities: a Survey of Recent Arguments and Evidence, OECD Economic Studies (1990).

[61] The discussion of this section is taken as an expanded version of section III.3.e) from the dynamic perspective.

their convergence. Interactions between myopic or irrational regions would often lead to failure. Even if regions are perfectly rational, coordination failure might occur. And each region might not adjust its business conditions to globally unified conditions. Instead they may try to differentiate from others. Outcomes through inter-regional competitions should be deliberately examined.

6. SEZs linked with foreign and surrounding areas

Many SEZs are concurrently linked with other areas in the same country and foreign countries. To be noted is that there are interactions among the various links of an SEZ as well. For example, the link with foreign countries may affect the link with other areas in the same country. Such interactions should be examined as well in order to properly evaluate the outcomes of an SEZ.

a) Theoretical analysis

Hamada[63] formally analyzed the effects caused by restricting the import of capital-intensive goods. Suppose that there are two small countries, A and B.[64] They produce capital-intensive goods and labor-intensive goods, using capital and labor. The domestic labor market is efficient and achieves perfect employment. The international trade of goods and transfer of capital do not result in any costs. However labor does not move over the border. Country A has plenty of labor, while capital in Country B is abundant. Therefore, without regulation or barriers, Country A would focus on producing labor-intensive goods and Country B specialize in capital-intensive goods. Each country's welfare would expand through trading these products.

If Country A restricted the importation of capital-intensive goods, the supply of this kind of good in Country A would become insufficient and its price would rise. Thus the production of capital-intensive goods would start in Country A. At this stage capital would start to shift from Country B to Country A. In addition, within Country A, the labor force would shift from labor-intensive industry to capital-intensive industry. The input of the labor force in labor-intensive industry would decrease. As its result, the competitiveness of labor-intensive industry in Country A would be weakened and Country A's welfare would be worse off.

As Hamada clarified above, the protection of less-competitive industries would help them develop, but not enable them to become internationally

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[62] See R. ROMANO, Law as a Product: Some Pieces of the Incorporation Puzzle, Journal of Law, Economics & Organization 1:2 (1985) 225–283, and L. E. RIBSTEIN/E. O'HARA, The Law Market (Oxford 2009).

[63] K. HAMADA, An Economic Analysis of the Duty Free Zone, Journal of International Economics 4 (1974) 225–241.

[64] 'Small' means that the player's action does not have feedback effects on the world.

competitive. In addition, it would sacrifice the same country's competitive industry. Hence, the imposition of tax on imported goods or quantitative restrictions are not desirable. (Also see Rodriguez; Hamilton and Svenson.[65]) These researches have been criticized in that, for example, perfect employment is assumed; only the trade of final goods is analyzed; and externality or dynamic factors are disregarded.[66] Beyond these criticisms, however, it is stressed that SEZs could theoretically be considered desirable, by more broadly interpreting externality (such as spillover) and dynamic effects (such as structural reform).[67]

b) Empirical studies

Whether SEZs are really desirable or not cannot generally be said. It depends upon whether a specific SEZ has achieved its goal or not. However there is various empirical research on SEZs.

According to the World Bank[68] about 60 of 86 SEZs in 27 economies could be evaluated as being successful. Out of 60 successful areas, 25 were predominately successful; 10 had results nearly similar to these 25; 7 were partially successful. 18 were clearly unsuccessful. Most of unsuccessful cases were from the 1970s when not much experience of SEZs was shared, so that "mistakes have been fewer and smaller with the more recent zones" (p. 15). Up to now, a number of researchers have empirically analyzed various statistics, such as FDI, employment, and foreign currency.[69]

To evaluate the achievements of SEZs, a proper cost-benefit analysis is needed. A pioneer work of this kind is that of Warr.[70] He conducted case

[65] C. RODRIGUEZ, A note on the Economics of the Duty Free Zone, Journal of Development Economic 6 (1976) 385–388; C. HAMILTON/L. SVENSON, On the Welfare Economics of a Duty-Free Zone, Journal of International Economics 20(1982) 45–64.

[66] Much literature attempts to amend the Hamada model. For example, L. YOUNG/K. F. MIYAGIWA, Unemployment and the formation of duty-free zones, Journal of Development Economics 26:2 (1987) 397 and T. D CHAUDHURI/S. ADHIKARI, Free trade zones with Harris-Todaro unemployment: a note on Young-Miyagiwa, Journal of Development Economics 41:1 (1993) 157–162 set their model where domestic unemployment would occur. L. YOUNG, Intermediate Goods and the Formation of Duty-Free-Zones, Journal of Development Economics 25 (1987) 369–384 and A. G. SCHWEINBERGER, Special Economic Zones and Quotas on Imported Intermediate Goods: A Policy Proposal, Oxford Economic Papers 55:4 (October 2003) 696–715 focus on intermediate goods. And M. DIN, Export processing zones and backward linkages, Journal of Development Economics 43: 2 (1994) 369–385 considers externalities.

[67] See FIAS, *supra* note 4, 14, FAROLE/AKINCI, *supra* note 4, 13–17, and FAROLE, *supra* note 3.

[68] WORLD BANK, *supra* note 20, 14–15.

[69] See, for example, BOYENGE, *supra* note 11, FAROLE/AKINCI, *supra* note 4 and FAROLE, *supra* note 3.

[70] WARR, *supra* note 34, 65–88.

studies on Indonesia, Korea, Malaysia and Philippines, and analyzed the flows between the EPZs and the rest of the world as well as the flows between the EPZs and the host country (p. 76). As components of a cost-benefit analysis, he paid attention to foreign exchange earnings, employment, technology transfer, domestic sales, purchase of domestic materials and capital goods, use of electricity, domestic borrowing, taxes, and development and recurrent costs (pp. 77–81).

Chart 8: Results of Warr's analysis (1) (millions of 1982 US dollars)[71]

Category	Indonesia	Korea	Malaysia	Philippines
Employment	4	39	111	59
Foreign exchange earnings	0	65	94	72
Local raw materials	5	16	18	3
Local capital equipment	0	0	10	0
Taxes and other revenue	23	18	10	11
Electricity use	-1	-13	-53	-4
Administrative costs	-13	-17	-4	-23
Infrastructure costs and subsidies	-3	-68	-43	-196
Domestic borrowing	0	0	0	-147
Total net present value	15	40	143	-225
Internal rate of return (percent)	26	15	28	-3

Chart 9: Results of Warr's analysis (2) (percent of gross benefits)[72]

Category	Indonesia	Korea	Malaysia	Philippines
Employment	13	28	46	41
Foreign exchange earnings	0	47	39	50
Local raw materials	16	12	7	2
Local capital equipment	0	0	4	0
Taxes and other revenue	72	13	4	8
Electricity use	-3	-9	-22	-3
Administrative costs	-41	-12	-2	-16
Infrastructure costs and subsidies	-9	-49	-18	-135
Domestic borrowing	0	0	0	-101
Total	47	29	59	-155

Based on this analysis, Warr concluded that Indonesia, Korea and Malaysia were successful, while the Philippines was not. While his work is highly regarded by the World Bank[73] and further developed by other scholars, such

[71] Source: WARR, *supra* note 34, 82, Table 6: Welfare Impact of EPZs: Net Present Value.

[72] Source: WARR, *supra* note 34, Table 7: Composition of Net Present Value.

[73] WORLD BANK, *supra* note 20.

as Jayanthakumaran,[74] it has been criticized for its limited number of case studies and vague definitions.[75]

As a fundamental criticism against empirical studies, Gibbon *et al*.[76] state that a "more serious problem, however, is that of identifying a credible counterfactual. Meaningful impact analysis is not equivalent to measuring, for example, how rapidly exports or foreign investment grow in a given country after establishing an EPZ. Rather, one needs to establish how these variables would have evolved in the absence of the EPZ" (p. 23). Furthermore: "a number of observations may still be made", i.e.: 1. FDI: the level of FDI is very diverse among EPZs; 2. Export growth and diversification: "in many cases only relatively small gains are generated by EPZs"; 3. Employment creation: "the effect of EPZ development on employment creation is low"; 4. Backward linkages: performance depends on the nature of industries and companies in EPZs, as well as the nature of host economy; 5. Technology transfer and diffusion: it "is difficult to estimate, though most studies seem to agree that it is relatively low in low-income countries"; and finally, 6. Employee learning effects and skill diffusion: they "also appear to be low in EPZs" (p. 41).

Another critical approach is to focus on factors which would determine success, instead of focusing on evaluation. Farole[77] focuses on the following four factors, i.e. traditional factors, zone investment climate, national investment climate and market access[78] to empirically verify the performance of SEZs. (pp. 116–129). He concludes that the last three factors are correlated to the SEZ's performance, but there is no evidence that traditional factors – low

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[74] K. JAYANTHAKUMARAN, Benefit-Cost Appraisals of Export Processing Zones: A Survey of the Literature, Development Policy Review 21:1 (2003) 51–65.

[75] See C. BAISSAC, A Critique of Cost-Benefit Analysis in the Evaluation of Export Processing Zones, Journal of the Flagstaff Institute 20:1 (1996) 28–38.

[76] P. GIBBON/S. JONES/L. THOMSEN, An Assessment of the Impact of Export Processing Zones and an Identification of Appropriate Measure to Support Their Development, for the Royal Danish Ministry of Foreign Affairs, Danish Institute for International Studies (April 2008).

[77] FAROLE, *supra* note 3.

[78] FAROLE, *supra* note 3, 117 explained these categories as follows:

"1. Traditional factors – the trio of fiscal incentives, low wages, and trade preferences. These factors are the basis on which most EPZ programs have been designed and positioned. The first two affect a firm's cost of producing (directly or indirectly), while the third affects trade costs.

2. Zone investment climate – the infrastructure and administrative environment for firms operating in the zones, which will affect net production costs.

3. National investment climate – the infrastructure, administrative, and governance environment at the national level, which will also affect net production costs.

4. Market access – the position of the SEZs relative to national, regional, and global markets, which will affect trade costs."

wages, fiscal incentives, and trade preferences – influence an SEZ's performance (p. 129).

c) Implications for policy

Following these empirical studies, it seems that the performance of an SEZ is more influenced by long-term and fundamental conditions, such as the institutionalized business and investment environment, rather than short term conditions, such as lower tariffs or temporary regulation. This can be explained also by theory. If an SEZ aims at desirable business outcomes, an environment should be created that enables business activities to be proper, stable and comprehensive.

IV. SEZs from the Micro Perspective

1. Introduction

Macro perspectives are useful for identifying SEZs' law-related issues. But they have limits stemming from their assumption that the goals and functions of SEZs can be taken for granted. To devise effective policies on SEZs, however, it is necessary to also pay due attention to the internal structures and functions of the SEZs. Thus, we will examine structures and functions of SEZs in the micro-perspective.

First, in the case of SEZs, where traditional goals such as expanding FDI, creating employment and increasing exportation are to be pursued, links among these goals and resources to achieve the goals have to be analyzed. Warr[79] implies that the process from the input of resources up to final performance differs in each case. Without an analysis of this process it would be difficult to analyze adequately the manner in which to establish and manage SEZs with traditional goals.

Second, in the case of dynamic SEZs, which aim at comprehensive and fundamental changes to business conditions (i.e. SEZs to promote structural reforms), it is not possible to identify the kind of results that could be expected without an analysis of the internal process. For example, even if excellent engineers, abundant resources, active entrepreneurs and the most advanced facilities are gathered in an area, it would not be clear what kind of functions an SEZ would perform (for example creation of innovation), if the links among these factors remain unanalyzed. For an analysis from the macro perspective, the functions of SEZs are assumed as given, so that it is impossible to investigate why and how such functions could be achieved. But in order to use SEZs effectively, such investigation seems indispensable.

[79] WARR, *supra* note 34.

2. SEZ as a system

a) System approach

The system approach is a methodology which takes the objectives of analysis as *a* system and pays attention to the nature of the system. Although there are multiple definitions of a system, according to Bertalanffy, "[a] system may be defined as a set of elements standing in interrelation among themselves and with the environment."[80]

Following this definition, we begin our discussion by specifying the elements of SEZs, such as the players and environment, and understanding the interrelations among them in, and around, SEZs.

b) Elements of SEZs (1): players

A player is an entity which conducts activities for its own purpose. It can be further divided into an individual, a firm or a government. Individuals could be entrepreneurs, engineers, skilled or simple workers, intermediaries, lawyers, consumers, and so on. Their religion or personal networks may play a crucial role. Firms are divided into profit and non-profit organizations. Firms for profit could have various features, such as juridical personality, size, type of industry, executives and employees, financial state, brand, reputation, and group companies. Non-profit organizations could be, for example, universities, research institutions, and business associations. Governments include central and local governments as well as relevant policy-making organizations.

What is important is to identify the purposes and abilities of each player and to analyze relationships between the players' features and decisions. For example, two equally skilled workers may make different decisions, if they have different ages or family statuses. Since each player's decision would affect the outcome of the system, it is necessary to investigate players' decisions and the key factors influencing them.

c) Elements of SEZs (2): environment

The environment includes all factors which may affect each player's decision-making process and its outcome, which includes climate, geography, the number and quality of labor, the number of companies, income, available technology, laws and regulations, custom, culture, and history.

It is widely known that economic and geographical factors are crucial for the existence and continuation of SEZs through works such as Weber's eco-

[80] L. VON BERTALANFFY, General System Theory: Foundations, Development, Applications (New York 1968) 55.

nomic-geography, Piore and Sable,[81] Krugman[82] and empirical studies of Warr[83] and Farole.[84] These factors are exogenously provided to the system and unilaterally affect it.

Custom, culture and history are factors of environment as well. They are exogenously provided to a system and affect each player's decision-making process and outcomes. To be noted however is that the future environment will be affected by the current decision-making process and its outcomes. Therefore, for static analysis, these factors could be considered within the meaning of environment, but for dynamic analysis they should be understood as environment *and* outcomes of the system at the same time.[85] Especially in SEZs, where relatively a small number of constituents build very intensive relationships, original customs, culture and history could be created and affect the long-term outcomes of each individual SEZ.[86]

Relationships with other players need careful analysis. For example, a company's decision-making process and its performance could be influenced by other competing companies. In this case, other companies' reactions are a part of the environment. On the other hand, their reactions also constitute decision-making within a system, so that relationships with other players are a part of the endogenous factors. Lawmakers may believe that they can control the environment through laws and regulations. But lawmakers are also constituents of a system. Legal decisions and legislation are endogenously determined factors within a system.

d) Interrelations among elements in SEZs

Relationships between players and the environment

The environment unilaterally affects a player's decision-making process and performances, so that no feedback could be given from the player's side to the environment and the player can assume that there is an optimal solution in the same environment. A business entity could therefore decide to adopt concrete business projects and business methods, presuming that environment would remain unchanged.

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[81] M. J. PIORE/C. F. SABEL, The Second Industrial Divide: Possibilities for Prosperity (New York 1984).

[82] See P. KRUGMAN, Geography and Trade (Cambridge 1991).

[83] WARR, *supra* note 34.

[84] FAROLE, *supra* note 3.

[85] D. C. NORTH, Institutions, Institutional Change and Economic Performance (Political Economy of Institutions and Decisions) (Cambridge 1990).

[86] A.L. SAXENIAN, Regional Advantage: Culture and Competition in Silicon Valley and Route 128 (2nd edn. Cambridge 1994).

Relationship between players

Multiple players make decisions interdependently in the provided environment. In this situation, even if one player predicts other players' actions and tries an optimal solution for him/her, it would be insufficient. When a player makes decisions, he/she should infer not only from other players' reactions and predictions against the player's previous actions, but also from other players' reactions and predictions against the player's upcoming decisions. In other words, a player has to endlessly continue this chain of inference. For such a situation, game theory is the analytical tool to be applied.[87]

In order to analyze the internal structures and functions of SEZs, the focus should be placed on the relationship between players. For example, whether firm A should invest in an SEZ or not depends on the business plan of another firm B. On the other hand, B's plan depends on A's investment plan. Thus the functions and outcomes of the SEZ should be analyzed through both players' interrelationships.

3. SCP approach

a) Introduction to the SCP approach

In order to understand SEZs as systems, the SCP approach is useful; this pays attention to Structure, Conduct and Performance.

Performance here means outcomes concerning the market, industry, enterprise, region or state as the objective of analysis. Performance is evaluated in accordance with criteria such as development, profit, welfare and so on.

The performance that could be achieved depends on the concerned players' conduct. Conduct here means all possible acts and attitudes which might affect performance, for example, information collection, negotiation, investment, consumption, production, sale, pricing, and advertisement.

Conduct could be determined based on structure. Structure here means all environment and conditions to be taken into account when players determine their conduct, such as the number and the nature of the players, the nature of the goods, the available information and technologies, the natural environment, and social institutions.

The ordinal SCP approach postulates that although performance is a matter of ultimate concern, performance is determined by conduct, and conduct is influenced by structure. Thus, it asserts consideration of structure first, conduct second, and the last in sequence being performance. This approach was established by the 1960s,[88] and until the 1990s was the sole analytical tool.[89]

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[87] See D. FUDENBURG/J. TIROLE, Game Theory (Cambridge 1991) especially Ch. V.

[88] See J. S. BAIN, Industrial Organization (New York 1959).

[89] F. M. SCHERER/D. ROSS, Industrial Market Structure and Economic Performance (Boston 1990); R. SCHMALENSEE, Inter-industry Studies of Structure and Performance, in:

Because of the development of game theory and information economics,[90] the SCP approach is no longer the sole tool, but is still a leading methodology.

b) Complexity: cyclicality between structure, conduct and performance

The SCP approach usually assumes that the structure is given exogenously. But conduct or performance may change the structure. In this case, the output of a system becomes the input of the same system at the beginning of the next cycle. Systems with such a cyclical or feedback mechanism can be named systems with complexity.

Complexity here means a not-simplistic nature,[91] for example, nature which is not simple to describe, understand, calculate, predict, decide, manipulate, or stabilize. The extent of complexity depends upon context and intention. Therefore the substance of complexity could be unlimited in its variety.

Although complexity may vary significantly, certain patterns of systems with a cyclical structure are identified. First, circumstances of a system at a certain time would have an effect in the future. Therefore, an accidental event in the past could affect present and future situations (path-dependence). Second, small accumulated outcomes may finally bring about extremely big impacts (butterfly effects). Third, in a system with complexity, spontaneous order may exist without external support.[92]

Especially for analyzing SEZs more profoundly, due attention should be paid to complexity. For example, in an area specializing in machine manufacturing, located next to a large coal mining zone, machine manufacturing industry may survive as a result of path-dependence, despite the closure of the coal mine. Or as an example of butterfly effects, in the same SEZ specializing in machine manufacturing, a politician who favors the industry may be elected who introduces policy measures to drastically develop the industry. If there is unique business custom in the SEZ and a number of parties follow the custom, this custom could be maintained as spontaneous order.

This complexity should be properly taken into consideration, especially when SEZ-related laws and regulations are designed. Otherwise expected effects may not occur or unexpected outcomes may occur.

Schmalensee/Willig (ed.), Handbook of Industrial Organization, Vol. 2 (New York 1989) 952–1009.

[90] The epoch-making work is J. TIROLE, Industrial Organizations (Cambridge 1988).

[91] For a brief explanation on complexity, see H. A. SIMON, The Sciences of the Artificial (3rd edn. Cambridge 1996) Ch. 7 and 8.

[92] This means that system with perfect cyclical mechanism is self-sustaining.

c) SEZs through the lens of the SCP approach

In this section, SEZs are analyzed as systems through the three elements of the SCP approach, i.e. structure, conduct and performance. Thus our definition of SEZs could be rephrased through the SCP approach as "area where, with the involvement of public authority, own business conditions are integrated into its structure, for encouraging conduct to bring about economic development in the broader sense".

The first factor is the players in an area and its surrounding areas, i.e. what type of business people, relevant organs, entrepreneurs, engineers, and workers are in the area; how many they are; where in the area they are and so on. Players could be differentiated in accordance with individual characteristics, such as knowledge, information, income, culture, behavioral pattern and so on. Especially important is each player's mobility and its costs.

The second factor is the relationships between players. As long as SEZs are not a simple space of co-existence, but places where various entities interact, the external exchange existing between players and how to control it is therefore crucial. Examples are ways of contact, communication, coordination, control, and prediction about other player's attributions and behaviors.

The third factor is the environment of SEZs. The following constitutes a list of environment types: (1) the natural environment, such as topography and climate, mineral resources, flora and fauna, (2) the physical environment, such as facilities for transport, information and communication, energy, commerce, entertainment, (3) the social environment, such as unofficial networks, culture, or income distribution. The natural environment is difficult to control by policies of SEZs. Thus the natural environment can be handled as an exogenous factor. The physical environment could be manipulated, this should therefore be handled as endogenous factor. Its cyclicality is relatively easy to understand.[93] The social environment is often considered as easy to manipulate, but it is often not the case.

d) Classification of SEZs from the SCP approach

In principle, an analysis based on the SCP approach should be made for each case. However the classification of SEZs would facilitate the development of analytical methods. We focus on four factors, i.e. the mobility of the player,[94] the homogeneity and heterogeneity of players, subsidiarity and substitutes of factors, and complexity.

There are other ways to classify. For example, Gordon and McCann focus on local inter-enterprise relationships and offer three classifications, i.e. pure

[93] See investment theory and growth theory in economics.

[94] Mobility of players could be interpreted as variability of their characteristics.

agglomeration, industrial complex, and the social network.[95] Saxenian compares Route 128 as an accumulation of integrated and closed organizations and Silicon Valley as dispersive and open networks.[96] To be noted is that inter-enterprise relationship is not only the structure, but also the conduct or the performance of players. Therefore such a relationship is involved with complexity in the SEZs, which would be unstable and difficult to control. Hence the classification here is based on stable structural factors.

4. Marshall's model of industrial agglomeration

a) Marshall's externality and industrial agglomeration

According to Marshall,[97] if a number of similar players in proximity of each other work together, the productivity of each player could improve (Marshall's externality[98]). In this case, it is more advantageous for each player to work in a location close to other players than being disperse and separated from them. This would lead to agglomeration and provides continuity to their activities. Accordingly, unique and sustainable business conditions could emerge.[99] This kind of agglomeration may autonomously appear, but can be fostered and maintained with the involvement of public authority. The latter case would fit our definition of SEZs.

Marshall's externality has three components: spillover, local common resources and local labor pooling. To be noted is that each component contains its own mechanism, as the following chapters will illustrate.

b) Spillover

Knowledge spillover means such phenomena that someone's knowledge is transferred to others or used by others without sufficient remuneration. Other players' productivity improves through the diffusion of excellent knowledge.[100] These phenomena could occur not only through direct observation or communication, but also through products, customers, suppliers or employees. The process of spillover depends upon the players' proximity or density, so that spillover tends to adhere to a specific area.

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[95] I. R. GORDON/P. MCCANN, Industrial Agglomerations: Complexes, Agglomeration and/or Social Networks, Urban Studies 37:3 (2000) 513–532.

[96] See Saxenian, *supra* note 86.

[97] A. MARSHALL, Principles of Economics, Book IV (8th ed. London 1920) Ch. X.

[98] More strictly, Marshall's externality could occur even among heterogeneous players. But its mechanism – explained below – works more effectively among homogeneous players.

[99] However, some costs of agglomeration, such as congestion, restrict its infinite expansion.

[100] See P. M. ROMER, Increasing Returns and Long-Run Growth, The Journal of Political Economy 94:5 (1986) 1002–1037.

Marshall's externality depends not only on players' proximity, but also technical transferability of knowledge as well as its legal protection.

Knowledge has the nature of a public good,[101] but its spillover occurs through action, and not automatically. Whether spillover occurs or not depends upon many factors, such as similarities or differences between old and new knowledge, and the players' ability to capture new knowledge.

It is necessary in this context to stress in that the transferability of formal knowledge is high, while the transfer of tacit knowledge is more difficult.[102] On the other hand, it is broadly known that the use of tacit knowledge is crucial for companies' performances.[103] Therefore policy makers should support activities promoting spillover. For example, besides expanding opportunities to transfer tacit knowledge,[104] transforming tacit knowledge to formal knowledge[105] or promoting co-ownership of formal knowledge[106] could be useful policy measures to promote spillover.

Legal protection relies on the intellectual property (IP) system adopted. The scope, level and enforcement of IP protection affect players' activities. Strong protection of IP could encourage investment in order to obtain new knowledge,[107] but it would discourage spillover.[108] (See Chart 10).

Chart 10: Type and nature of knowledge

	Transferability	Legal protection
Tacit knowledge	Low	Low
Formal knowledge	High	High

Relaxing the level of IP protection for the sake of spillover would lead to excessive nationwide relaxation of protection, because the effects of IP pro-

[101] P. M. ROMER, Endogenous Technological Change, The Journal of Political Economy 98:5 (1990) S71–S102.

[102] E. VON HIPPEL, "Sticky Information" and the Locus of Problem Solving: Implications for Innovation, Management Science 40:4 (1994) 429–439; G. SZULANSKI, Exploring Internal Stickiness: Impediments to the Transfer of Best Practice within the Firm, Strategic Management Journal 17 (1996) 27–43.

[103] I. NONAKA/H. TAKEUCHI, The Knowledge-Creating Company (Oxford 1995).

[104] For example, building facilities for exchange, promoting networking, or organizing technical competitions.

[105] For example, the promotion of technical standards or creation of database.

[106] For example, the development of educational programs or establishment of educational institutions.

[107] It is not yet proven whether legal protection of IP promotes investment in order to obtain new knowledge. Some empirical studies show negative results.

[108] Theoretical and empirical research on this point is scarce. See, Z. J. ACS/M. SANDERS, Patents, Knowledge Spillovers, and Entrepreneurship, Small Business Journal 39 (2012) 801–817; R. M. SAMANIEGO, Knowledge Spillovers and Intellectual Property Rights, International Journal of Industrial Organization 31 (2013) 50–63.

tection cannot be limited to certain areas. This trilemma between spillover, tacit and formal knowledge can only be solved by law.
Another possible policy would be to keep knowledge as tacit. Legal protection and transferability would remain low, but in order to make spillover happen, knowledge holders could stay closer, be less open and keep frequent contact with other knowledge holders. This could create a balance between the nationwide legal system and special local mechanism designed to promote spillover. This explains the reason for agglomeration.

c) Local common resources

Local common resources are those resources which can be shared or used commonly by players in specific areas; a kind of local public good. Local common resources include traffic systems (e.g. road, railways, port, and airport), energy systems, information and communication systems, subsidiary industries (e.g. consulting firms, law firms, and research institutes), the local brand and reputation, social networks, culture and customs.

Local common resources are usually unequally located and difficult to move. These resources are similar to the concepts of social overhead capital or territorial capital.[109]

These local common resources improve the productivity of a specific area as a whole by improving players' activities in the area. However costs for establishing and maintaining local common resources are often prohibitive for individual users. Concentrating users in an area would enables them to divide the costs. Each user contributes to cost sharing and establishing and maintaining local common resources. This brings about an improvement to other players' productivity as well. Such a positive externality should be welcome, as long as beneficiaries bear appropriate costs as well. However, this is not always the case, for two reasons.

First, investment could be distorted. For example, assume that there are two firms, A and B, in an area. If resource X were available, both A and B could benefit from X. If the use of resource X is not restricted, both A and B will prefer to free-ride and no investment will be made. If resource X is restricted, for example a railway which connects the area and other areas, both A and B are likely to be interested in investment, possibly leading to inefficient overinvestment. Or the firm C, which created resource X, may introduce discriminatory pricing for other companies. In any case, investment would be distorted and the development of the area would suffer.

Second is common agency. This is the situation where a player/agent's activities affect multiple other players/principals simultaneously.[110] For exam-

[109] See OECD, OECD Territorial Outlook (Paris 2001).

[110] The first formal analysis is B. D. BERNHEIM/M. D. WHINSTON, Common Agency, Econometrica 54:4 (1986) 923–942.

ple, a bus company which exclusively operates commuter buses in an area, is a common agency. Their decisions on infrastructure affect the players' payoffs in the area. A subcontractor which supplies its products to various prime contractors is another example of common agent.

Suppose that the interests of principals are identical. If a principal successfully controls the agent, other principals will take advantage of it without taking costs. On the other hand, if the interests of principals are not identical, a principal's control over the agent will bring about disadvantages to other principals, so that other principals will try to stop or hamper the agent's control, even if they would have to suffer costs. In both cases, costs are not properly shared and spent for constructive activities. As its result, local common resources would be distorted.

Therefore it would perhaps be desirable that the authority makes direct investment in local common resources. If direct investment is not appropriate, another possible policy would be to allow a company to monopolize the resource (e.g. railway), regulating its price and investment strategy.

d) Local labor market for specific skills

If an area specializes in specific industries, a labor market for specific skills will emerge. Such a labor market fulfills various functions: from a static viewpoint, a firm could easily find appropriate workers for its business; a worker could find a job suitable for his/her skills; the market reduces costs for searching, matching, negotiation, or monitoring. From a dynamic viewpoint, such a market will enhance the mobility of human resources between the area and other areas; investment to improve specific skills increases, for example for education or training; investment to improve the market's functions increases, for example by reducing costs through development of databases; these investments could further increase, if economies of scale apply.

Thus the development of local labor market for specific skills improves the productivity of firms in the area as well. Smooth functioning and an appropriate expansion of the market would be desirable. Furthermore, creating a standard labor contract, speedy labor dispute resolution mechanisms, and clear rules for dismissal would contribute to such functioning and expansion.

e) Valid policy measures

If an area specializes in specific industries and similar players are concentrated in the area, law and policy specifically targeted at the area would work well.

For example, let's assume that an area specializes in a specific industry (e.g. the steel industry) and that the external environment is stable and the nature and number of players remain unchanged. All players in the area desire the development of the steel industry. Therefore the costs for conflict

management could be reduced; due to homogeneity of players in the area, goals and means of law and policy could be easily chosen by sampling; even if law and policy might not be efficient, the situation could easily be improved through trial and learning as a result of the homogeneity of the players. It is therefore very crucial to identify the goals of the area and area specific conditions.[111]

f) Public choice[112]

There are two particular issues of public choice theory concerning local development.

The first is how to control a policy maker's conduct in letting him/her design and implement appropriate policy measures for local development. Policy makers may not target the development of the area. Even if they are concerned with the area's development, he/she may not have the sufficient capabilities or information. The second is that the policy maker could be captured by specific groups of residents or companies. In the industrial agglomeration of Marshall's model, homogenous labor and firms are concentrated in a specific area, so that they can easily form the political majority. For policy makers, this majority group's views are politically crucial and the policy maker could be politically captured.

g) Criticism

Materializing Marshall's model or the problems arising from such a model are no longer crucial. A recently indicated shortcoming of Marshall's industrial agglomeration model concerns its fundamental function. Marshall's model is designed to produce industrial products more efficiently, but not to create innovation. In the time where the creation of innovation is believed to be a driving force of local development, Marshall's model does not properly fulfill this expectation.

5. Jacob's agglomeration model

a) Basic concepts and functions

This chapter focuses on the specific area where heterogeneous players are concentrated and create dynamic changes and innovations through mutual exchange among themselves. We call this Jacob's model.[113]

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[111] See W. OATES, Fiscal Federalism (New York 1972).

[112] J. M. BUCHANAN/G. TULLOCK, The Calculus of Consent: Logical Foundations of Constitutional Democracy (Michigan 1962).

[113] J. JACOBS, The Death and Life of Great American Cities (New York 1961); J. JACOBS, The Economy of Cities (New York 1969).

Heterogeneity characterizes Jacob's model and players in an area do *not* have steady technical subsidiarity.[114] Assume two kinds of activities, *a* and *b*. If the combination of the activities *a* and *b* is more profitable than keeping them separate, *a* and *b* have subsidiarity. For example, in the car manufacturing industry, combining the production of the engine and the chassis would reduce production costs. The costs of combining two productions could be reduced more by locating two production sites close together.

But Jacob's model assumes a concentration of players without such subsidiarity, like an area in which the manufacturer of machine tools and a steak restaurant, a magician and a construction company, a medical doctor and a carpenter stand in proximity. They are not expected to be a part of a system. No fixed, stable, long-term and mutual co-work is planned in advance. Instead their relationships are accidental, fluid and unilateral. Contacts assumed in Jacob's model are unstable and minor, but they could lead to innovation. According to Granovetter, innovation is more likely to occur from weak contacts than strong ones.[115] As output originating from unstable contacts would also be unstable, support measures will be necessary. These measures would be (1) collect weak contacts and increase total number of outputs, (2) put weak contacts close together, enhance density and improve the probability of occurrence, and (3) support processes for stabilizing and materializing occurred output. To introduce and maintain these measures, a public authority would intervene and support them. At this stage, Jacob's model is included in our definition of SEZs.

b) Three key concepts (1): diversity

To better understand Jacob's model, it is indispensable to elaborate its three key conceptual components. The first is the characteristics of the player, which represents diversity or heterogeneity. Diversity is further elaborated by other researchers: some research focuses on the ethnic diversity of workers at the industrial level,[116] while other research looks at employees' cultural diversity at the company level,[117] or technical diversity and its influence on

[114] The concept of steady technical subsidiarity will be explained in more detail in the next section on industrial cluster.

[115] See M. S. GRANOVETTER, The Strength of Weak Ties, American Journal of Sociology 78:6 (1973) 1360–1380.

[116] For example, see A. ALESINA/E. LA FERRARA, Ethnic Diversity and Economic Performance, Journal of Economic Literature 43:3 (2005) 762–800, and C. SPARBER, Racial Diversity and Aggregate Productivity in U.S. Industries: 1980–2000, Southern Economic Journal 75:3 (2009) 829–856.

[117] C. OZGEN/P. NIJKAMP/J. POOT, The Impact of Cultural Diversity on Firm, Innovation: Evidence from Dutch Micro-data, IZA Journal of Migration 2:18 (2013).

innovative activities at the company level.[118] Furthermore, many other factors could constitute thresholds to evaluate diversity, such as size, history, the organization of company, nationality, academic career, family composition, and the age of employees.

The meaning of diversity could also be different. It could mean either "mutual difference" or "divergence from a pre-set standard". From the former viewpoint, diversity is high if a number of various types of players are present, while from the latter viewpoint diverse industries (for example, art or culture),[119] organizations (for example, universities and research institutions)[120] and professions (for example, artists, professors, PhD holders)[121] are crucial.

c) Three key concepts (2): form of contacts

This is about relationships among players, but Jacob's model assumes weak and unstable ones, so we name here contacts. Contacts could be characterized by frequency, strength, flexibility and openness.

Frequency is the number of contacts made during certain period of time. Contacts between the same players and between different players should be differentiated. This difference also reflects differences between Route 128 and Silicon Valley.[122]

Strength is defined as the grade which may affect player's nature or conduct. Contacts that players frequently have tend to be weak. According to Granovetter,[123] close players share much information, and contacts would not affect their nature or conduct. On the other hand, remote players do not share much information, and each player could obtain new valuable information through contacts, which can be functionally strong. To be noted is that the grade of strength may be affected not only by shared information, but also credibility, trust and shared values.[124]

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[118] M. GARCIA-VEGA, Does technological diversification promote innovation?, An empirical analysis for European firms, Research Policy 35:2 (2006) 230–246.

[119] See C. LANDRY, The Creative City (London 2000), and UNITED NATIONS/UNDP/UNESCO, Creative Economy Report (Special Edition 2013), <http://www.unesco.org/culture/pdf/creative- economy-report-2013.pdf>.

[120] See H. ETZKOWITZ, The Triple Helix: University-Industry-Government Innovation in Action (London 2008)

[121] See R. FLORIDA, The Rise of the Creative Class: And How It's Transforming Work, Leisure, Community and Everyday Life (New York 2002); *idem*, The Rise of the Creative Class – Revisited: 10th Anniversary Edition – Revised and Expanded (New York 2012).

[122] SAXENIAN, *supra* note 86, reported that players have a tendency of open and flexible contacting in Silicon Valley, while closed and fixed in Route 128.

[123] See GRANOVETTER, *supra* note 115.

[124] See M. GRANOVETTER, The Strength of Weak Ties: A Network Theory Revisited, Sociological Theory 1 (1983) 201–233, and M. W. H. WEENING/C. J. H. MIDDEN, Communication Network Influences on Information Diffusion and Persuasion, Journal of Personality and Social Psychology 61:5 (1991) 734–742.

Flexibility concerns the changeability of contents or forms of contacts. If contents or the form of contacts could be determined irrespective of place, time and contact partner, flexibility is high. Flexibility and strength may be traded-off. Contacts based on contractual agreement would be less flexible, but it would be strong because of enforceability. A contact made with someone encountered in a cafe would be free for its content and form, but not as strong.

Openness means non-fixation of contact partners. Openness is not necessarily constant and could change during a certain period. For example, contacts at the early stage of a project could be intensive and closed, but could change and be open at later stage.

d) Three key concepts (3): institutional support

Contacts in Jacob's model are unstable and minor, so that it would be difficult to produce useful outputs. In successful cases of Jacob's model, various institutional supports are integrated.[125] Without such supports, this model would usually fail.

e) Conduct and performance

In Jacob's model, accidental contacts among unspecified players could occur and mutual observation and communication would then take place. As a result of this conduct, knowledge could be transferred or new knowledge be created. The circumstances under which innovation could occur have not yet been identified,[126] but it is widely accepted that the core factors of Jacob's model (i.e. concentration of diverse players,[127] various institutional supports[128] and flexible and open contacts)[129] are crucial for innovation.

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[125] For example, the role of brokers was examined by L. FLEMING/S. MINGO/D. CHEN, Collaborative Brokerage, Generative Creativity, and Creative Success, Administrative Science Quarterly 52:3 (2007) 443–475; venture capitalists were considered in M. FERRARY/M. GRANOVETTER, The Role of Venture Capital Firms in Silicon Valley's Complex Innovation Network, Economy and Society 38:2 (2009) 326–359; some kinds of NPOs were mentioned in P. COOKE, The New Wave of Regional Innovation Networks: Analysis, Characteristics and Strategy, Small Business Economics 8:2 (1996), Special Issue on Geography and Regional Economic Development: The Role of Technology-Based Small and Medium Sized Firms, 159–171. And on culture, atmosphere, conventions and customs, there are many works, such as C. DUPUY/A. TORRE, Local agglomerations, trust, confidence and proximity, in: Christos/Sugden/Wilson (eds.), Agglomerations and Globalisation: The Development of Urban and Regional Economies (Cheltenham et al. 2006) Ch. 8.

[126] See R. E. LUCAS JR., On the Mechanics of Economic Development, Journal of Monetary Economics 22 (1988) 3–42.

[127] G. A. CARLINO/S. CHATTERJEE/R. M. HUNT, Urban Density and the Rate of Invention, Journal of Urban Economics 61 (2007) 389–419.

[128] See FLEMING/MINGO/CHEN, *supra* note 125; FERRARY/GRANOVETTER, *supra* note 125; C. DUPUY/A. TORRE, *supra* note 125.

Generally speaking, Marshall's model aims at improving productivity through positive externality among homogenous players, while Jacob's model brings about innovation through accidental contacts between heterogeneous players. Both effects are empirically confirmed.[130] For example, Glaeser *et al.* confirmed that positive externalities occur more easily between different industries rather than one industry. In other words, Jacob's model seems to have proved more successful.[131] But their analysis was based solely on data in the USA during a specific period of time. There is no guarantee of reaching the same conclusion should an analysis be made in a different jurisdiction or during a wider period. Henderson focused on productivity on the level of the plant and confirms the positive effects of Marshall's model, while, according to Henderson, no evidence is found for Jacob's model.[132] Henderson, Kuncoro and Turner argue that industries for which Marshall's model is valid involve mature capital goods.[133] For new high-tech industries both models are positive. According to Duranton and Puga, the appropriate model depends on changeable the life cycle of products. For new products, whose business model is not yet established, Jacob's model would be valid. However, after the business process is established and at the stage of a shift to mass production, Marshall's model seems appropriate.[134]

f) Public support

Jacobs was of the opinion that an area (city) should ideally satisfy four conditions:[135] (1) serve multiple functions (mixed use), (2) consist of short blocks, (3) have diverse, mingled buildings, and (4) make a sufficiently dense concentration. There must be a sufficiently dense concentration of people, for whatever purposes intended. These conditions are to promote co-habitation, co-working and contacts with people with diverse natures and backgrounds, presuming that diverse people and companies become concentrated in an area. But they are disregarded if contacts among players lead to meaningful outputs. This is probably because Jacobs proposed her model against large-

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[129] H. W. CHESBROUGH, Open Innovation: The New Imperative for Creating and Profiting from Technology (Boston 2003).

[130] For a survey, see C. BEAUDRY/A. SCHIFFAUEROVA, Who's right, Marshall or Jacobs?, The localization versus urbanization debate, Research Policy 38 (2009) 318–337.

[131] E. L. GLAESER/H. D. KALLAL/J. A. SCHEINKMAN/A. SHLEIFER, Growth in Cities, Journal of Political Economy 100:6 Centennial Issue (1992) 1126–1152.

[132] J. V. HENDERSON, Marshall's scale economies, Journal of Urban Economics 53 (2003) 1–28.

[133] V. HENDERSON/A. KUNCORO/M. TURNER, Industrial Development in Cities, Journal of Political Economy 103:5 (1995) 1067–1090.

[134] G. DURANTON/D. PUGA, Nursery Cities: Urban Diversity, Process Innovation, and the Life Cycle of Products, The American Economic Review 91:5 (2001) 1454–1477.

[135] JACOBS, *supra* note 113, 151.

scaled developments in cities which could lead to a huge loss of diversity, while she was not interested in the formation of cities.

The most provocative requirement is "mixed use", i.e. a city should serve multiple functions. Hoppenbrouwer and Louw[136] raised some doubts about the concept of mixed use.[137] Grant positively evaluated the concept of mixed use and suggested that government promotes the mixed use policy.[138] But as Grant[139] and Hirt[140] indicated, the mixed use policy has been adopted in France and Germany, but not in the USA, UK or Canada. Scottish Government Social Research[141] also analyzed the difficulties in implementing the mixed use policy.[142] Thus it is necessary to clarify the concept and purpose of mixed use and analyze the costs and trade-offs of this policy.

There are a few types of public support policies: (1) support policy to create industrial agglomeration, (2) support policy to improve the quality and quantity of contacts among players, (3) support policy to achieve outcomes.

A series of discussions took place especially on support policy (1), about components of agglomeration, i.e. diverse companies or individuals, because conditions to attract companies and those to attract individuals are often different. According to Gabriel and Rosenthal[143] "the cities least attractive to households are most attractive to firms, and vice versa" (p. 444). An important factor for attracting individuals to a specific area is the original amenities of the area.[144] It is therefore the role of public policy to identify crucial

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[136] E. HOPPENBROUWER/E. LOUW, Mixed-use development: Theory and practice in Amsterdam's Eastern Docklands, European Planning Studies 13:7 (2005) 967–983.

[137] See also J. D. HERNDON, Mixed-Use Development in Theory and Practice: Learning from Atlanta's Mixed Experiences, Applied Research Paper (5 May 2011).

[138] J. GRANT, Encouraging Mixed Use in Practice, in: Knaap et al. (eds.), Incentives, Regulations and Plans: The Role of States and Nation-states in Smart Growth Planning (Cheltenham 2077).

[139] J. GRANT, Mixed Use in Theory and Practice: Canadian Experience with Implementing a Planning Principle, Journal of the American Planning Association 68:1 (2002) 71–84.

[140] S. HIRT, The devil is in the definitions: Contrasting American and German approaches to zoning, Journal of the American Planning Association 73:4 (2007) 436–450; S. HIRT, Mixed Use by Default: How the Europeans (Don't) Zone, Journal of Planning Literature 27:4 (2012) 375–393.

[141] SCOTTISH GOVERNMENT SOCIAL RESEARCH, Barriers to Delivering Mixed Use Development: Final Report (2009).

[142] See also J. FOORD, Mixed-Use Trade-Offs: How to Live and Work in a 'Compact City' Neighbourhood, Built Environment 36:1 Special 'Compact City Revisited' (2010) 47–62.

[143] S. A. GABRIEL/S. S. ROSENTHAL, Quality of the Business Environment versus Quality of Life: Do Firms and Households like the Same Cities?, The Review of Economics and Statistics 86: 1 (2004) 438–444.

[144] D. B. DIAMOND JR., The Relationship between Amenities and Urban Land Prices, Land Economics 56 (1) (1980) 21–32.

amenities and build them to attract individuals, according to Florida.[145] Jacobs' model is modified from this viewpoint and is often named "innovation districts".[146] Amenities include nature, entertainment, IT environment, convenience for shopping, school, medical facilities, and security. To be noted however is that the importance of these factors may be different from person to person, and may change in differing circumstances.[147]

Concrete support measures could vary, since they should meet local needs. They could be indirect support, such as building databases, capacity building for gatekeepers, legal advice, and an appropriate insolvency scheme. These services could be underfunded, as set-up costs could be high. A public authority would have good reasons to intervene in this context.

Many outputs which could be expected from Jacobs' model would often just be ideas, but they could eventually be developed as IP. Therefore, time and money must be invested before these outputs can bring about income. The risk of failure could be high as well. Therefore, in order to materialize outputs, mechanisms are necessary for (1) selection (i.e. a mechanism to find seeds with high potential), (2) management (i.e. a mechanism to develop or combine ideas), and (3) finance (i.e. a system to supply risk money).

g) Summary

Jacobs' industrial agglomeration model was developed as a criticism of area developments until the 1960s. It aimed at the protection of diverse local residents' values and lives. Innovation was rather secondary. However a number of countries realized later that Jacobs' agglomeration model could be a nursery of innovation, such that the creation of this model has been promoted, but little attention was paid to the original aim of the model. Since then it has become clear that the protection of diverse local residents' values and lives is needed to promote innovation.

In the contemporary context, we could conclude that Jacobs' model is valid for innovation, but ultimately the level of diverse local residents' satisfaction should be improved. For this purpose, neither a *laissez-faire* approach

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[145] R. FLORIDA, Who's Your City?: How the Creative Economy Is Making Where to Live the Most Important Decision of Your Life (New York 2008).

[146] To grasp the whole picture, see B. KATZ/J. WAGNER, The Rise of Innovation Districts: A New Geography of Innovation in America, Metropolitan Policy Program at Brookings (May 2014). For a more practical study, see L. MCGOUGH, Making it: The advanced manufacturing economy in Sheffield and Rotherham, Centre for Cities (2015) <www.centreforcities.org>.

[147] B. KATZ/J. S. VEY/J. WAGNER, One year after: Observations on the rise of innovation districts, Brookings Institute (June 2015) <http://www.brookings.edu/research/papers/2015/06/24-one-year-innovation-districts-katz-vey-wagner>.

nor a strict regulatory approach would work properly. A set of indirect measures could be a possible policy approach.

6. Industrial clusters

This chapter deals with the industrial cluster, which should be differentiated from Marshall's and Jacobs' agglomeration models. To be noted however is that the concept of the "industrial cluster" has been used in various contexts without being clearly defined. Even where a definition is provided, it tends to be so broad that Marshall's and Jacobs' agglomeration models fall under the same definition.[148] But leaving the differences among these models blurred would make our analysis less constructive. Therefore we offer a more specific definition of the industrial cluster.

a) Definition and classification

In the past, there were a number of examples of industrial clusters. Before Porter's works on this topic, the role of the industrial cluster was neglected. Porter reexamined this concept, clarified its importance for the development of the state or region, and analyzed its structure, functions and possible performance.[149] This paved the way for the introduction of policy measures to control industrial clusters. Starting from this point, a number of works have been published. We will follow this course of literature.

According to Porter, "A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities".[150] His more recent work states that a clusters are "groups of industries related by skill, technology, supply, demand and/or other linkages".[151] These definitions are so broad that they would cover both Marshall's and Jacobs' agglomeration models as well as EPZs, free ports, and industrial parks. Such broad definitions would not be helpful as a tool to analyze the structure, conduct of players and outputs of specific clusters.

We would propose instead the following language: an industrial cluster is "a specific area in which multiple players together have steady technical subsidiarity, geographical proximity and conduct activities."

The key to clarifying the scope of this definition lies in the conditions "steady", "technical" and "subsidiarity":

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[148] Jacob's agglomeration model and the industrial cluster have been confused with each other.

[149] M. E. PORTER, The Competitive Advantage of Nations (New York 1990).

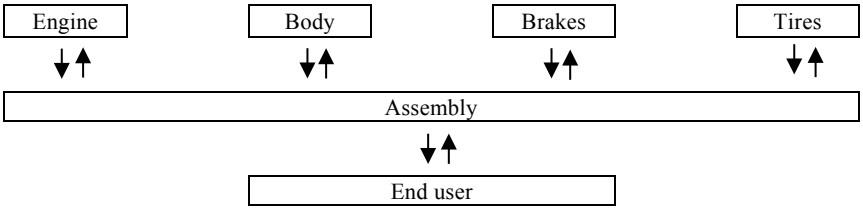
[150] M. E. PORTER, Agglomerations and Competition, in: Porter (ed.), On Competition (Boston 1998) 199.

[151] M. DELGADO/M. E. PORTER/S. STERN, Defining agglomerations of related industries, Journal of Economic Geography 16 (2016) 2.

– *Steady* is meant to exclude relationships of a one-off or accidental nature,
– *Subsidiarity* means that multiple activities could bring about bigger outcomes by being combined, and
– *Technical subsidiarity* means that bigger outcomes by combined activities are determined by the objective technical nature of these activities, but not by the players' purpose or subjective intention.

A good example of "steady technical subsidiarity" can be seen in the car industry, which consists of a number of sub-industries. As an outcome of the connected activities of these subindustries, the final products (various types of cars) of the industry are supplied to market and sold to the end user.

Chart 11: Steady technical subsidiarity in car industry



The structure of an industrial cluster could be elaborated on as follows: each sub-industry tends to consists of homogeneous firms and labor, while firms and labor in different sub-industries have heterogeneous natures. These different sub-industries as a whole have the nature of steady technical subsidiarity. In addition, these sub-industries could have relation-specific assets which could improve performances arising out of relationships between specific players. A good example of such assets is a metal mold in which investment is made by a specific supplier for an assembler, such as Toyota. The supplier recognizes that this asset is beneficial only for the specific products of the specific assembler. On the other hand, the assembler would find that the supplier is uniquely able to provide specific parts or services by using the asset. Thus, both the supplier and the assembler could perform well with this asset, and want to enhance their relationship.

Even if a spillover of knowledge between entities occurs, it should not be understood as an industrial cluster, as long as the knowledge transfer occurs between homogeneous entities. Thus the industrial cluster can be distinguished from Marshall's agglomeration model. The industrial cluster can be differentiated also from Jacobs' agglomeration model, since Jacobs' model presumes only weak contacts among players, while the industrial cluster requires steady technical subsidiarity. An encounter with an unknown neighbor at a start-up cafe would be important for Jacobs' model, but should be neglected for an industrial cluster.

The industrial cluster is distinguished also from self-choice type industrial agglomerations, discussed in section IV.7., where players' mobility could be high. To be noted, however, is that our definition includes also individuals, while Porter's comprises firms only.

Having understood the industrial cluster with such a structure, we further analyze the conduct and performance of an industrial cluster as follows:

Conduct: If there is steady technical subsidiarity, players tend to build fixed long-term relationships. Because once they find business partners with such subsidiarity and established business relationships, there is no incentive for them to depart from these relationships. This tendency would be strengthened, if the costs of finding new partners or changing partners are high.

Let's assume that entity A is a car body manufacturer and entities B1 and B2 are brake manufacturers. These two industries have steady technical subsidiarity, so that these entities could get bigger outcomes should they continue to collaborate. Let's further assume that outcome of relationship A-B1 is bigger than that of A-B2.[152] In this case, relationship A-B1 is fixed and long-term.

If relationship A-B2 is already established and the costs of creating a new relationship (e.g. the costs of searching for new partners and negotiating with them) occur, this relationship would be fixed and long-term, unless changing partner for a new relationship would bring about more benefits than the costs incurred in creating it. In addition, if the effects of relation-specific assets are bigger, the relationship between players would become firmer.

When conduct is related to innovation, the conduct could have vertical and horizontal effects: as an example of vertical effect, developing an advanced engine, for example, could stimulate the development of a new brake or wheel through fixed and long-term relationships with other subindustries. Horizontal effects are, for example, spillover to companies in the same subindustry (they do not necessarily belong to the same corporate group). Spillover could occur with or without the intention to do so. Contract law and IP law are crucial institutions in this respect.

Performance: In an industrial cluster, conduct and performance are mutually related through steady technical subsidiarity. Therefore it is predictable which conduct would be needed to achieve a certain result. Such a relationship between conduct and performance could improve productivity and facilitate the creation of policy measures to achieve these results. On the other hand, once such a cyclical relationship between conduct and performance is established, it would be difficult for players to accept new changes. Consequently, the industrial cluster would eventually become less adaptable to changes occurring in its environment.

[152] For simplicity, it is assumed that A can collaborate only with either B1 or B2.

As a consequence of the fixed long-term relationship between players, if firms in an industrial cluster intend to create innovation, they would make incremental-process innovation rather than radical-product innovation.

b) Governance of the industrial cluster[153]

It is expected that the combined activities in an industrial cluster would bring about bigger output. On the other hand, how this "bigger pie" would be divided and distributed among players in the cluster depends on the governance scheme of the cluster. If this distribution is inappropriate, the incentive to be a part of the cluster would be negatively affected. Therefore, the design of the governance scheme of the cluster is crucial. Usually contract would be a tool of governance.

As for the conduct of players with steady technical subsidiarity, the formation of relation-specific assets and the creation of innovation could be difficult to formalize in an enforceable contract. This is because related costs (for example, data collection in preparation of contracting, negotiations prior to contracting, drafting the contract, and litigation for enforcement) are usually high and would off-set the benefits of the long-term relationship.

Instead, respecting fixed long-term relationships in the cluster, an informal approach might be more efficient than formal governance by law. For example, mutual surveillance between players by applying customary business rules in the cluster could be more efficient.[154] Perhaps not as a replacement of the formal contract,[155] the role of such informal rules could be to supplement an imperfect contract.[156] Selecting a few individuals with strong leadership attributes in the community of the cluster might be another option.

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[153] See the following among others: O. E. WILLIAMSON, The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting (New York 1985); *idem*, Economic Organization: Firms, Markets, and Policy Control (New York 1986); O. HART, Firms, Contracts, and Financial Structure (Oxford 1995); R. M. AXELROD, The Evolution of Cooperation (New York 1984).

[154] For example, A. GREIF, Institutions and the Path to the Modern Economy: Lessons from Medieval Trade (Cambridge 2006).

[155] For example: S. JOHNSON/J. MCMILLAN/C. WOODRUFF, Courts and Relational Contracts, Journal of Law, Economics & Organization 18:1 (2002) 221–277; S. G. LAZZARINI/G. J. MILLER/T. R. ZENGER, Order with Some Law: Complementarity versus Substitution of Formal and Informal Arrangements, Journal of Law, Economics & Organization 20:2 (2004) 261–298; W. B. MACLEOD, Reputations, Relationships, and Contract Enforcement, Journal of Economic Literature 45:3 (2007) 595–628; P. FISCHER/S. HUDDART, Optimal Contracting with Endogenous Social Norms, The American Economic Review 98:4 (2008) 1459–1475.

[156] A classic work is S. MACAULAY, Non Contractual Relations in Business: A Preliminary Study, American Sociological Review 28 (1963) 55–67. As recent works, see M. D. RYALL/R. C. SAMPSON, Formal Contracts in the Presence of Relational Enforce-

c) Ecosystem

The performance of a corporate group depends on its members' activities. Each member's interest is affected by the corporate group's performance. Through changes to and replacement of members, the nature and performance of the group changes. From such a dynamic viewpoint, the corporate group could be described as an ecosystem.[157]

The ecosystem could be further classified in two ways: one is an autonomous type of ecosystem where all members have only limited power and the ecosystem as a whole is governed autonomously; the other is hierarchical type of ecosystem, where a core member has bigger power to lead the group as a whole.[158] The latter type is similar to 'hub-and-spoke districts' proposed by Markusen.[159]

In the autonomous type of ecosystem, no player has the power or intention to coordinate the group as a whole. Ideally, every player considers its own interest only, but the group as a whole functions well. This explains an aspect of many industrial clusters, i.e. even powerful government or company would seldom succeed in creating an autonomous type of ecosystem.

Even though "hierarchical" or a similar expression is not used, a number of works have been published on an industrial cluster which is led by specific company[160]: to promote innovation, not only those players who create knowledge, but also those who transfer knowledge from outside into the cluster are crucial.[161] Furthermore, there is research applying network analysis on

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ment Mechanisms: Evidence from Technology Development Projects, Management Science 55:6 (2009) 906–925.

[157] See J. F. MOORE, The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems (New York 1996).

[158] Sometimes the term 'focal firm' is used much like the term 'core player'.

[159] A. MARKUSEN, Sticky Places in Slippery Space: A Typology of Industrial Districts, Economic Geography 72:3 (1996) 293–313.

[160] See M. H. LAZERSON/G. LORENZONI, The Firms that Feed Industrial Districts: A Return to the Italian Source, Industrial and Corporate Change 8:2 (1999) 235–265; M. P. FELDMAN, The Locational Dynamics of the US Biotech Industry: Knowledge Externalities and the Anchor Hypothesis, Industry and Innovation 10:3 (2003) 311–328; M. FERRETTI/A. PARMENTOLA, Leading Firms in Technology Agglomerations: The Role of Alenia Aeronautica in the Campania Aircraft Agglomeration, International Journal of Business and Management 7:21 (2012) 65–77.

[161] See C. BOARI/A. LIPPARINI, Networks within Industrial Districts: Organising Knowledge Creation and Transfer by Means of Moderate Hierarchies, Journal of Management and Governance 3:4 (1999) 339–360; F. MUNARI/M. SOBRERO/A. MALIPIERO, Focal Firms as Technological Gatekeepers within Industrial Districts: Knowledge Creation and Dissemination in the Italian Packaging Machinery Industry, Industrial and Corporate Change 21 (2012) 429–462; A. AGRAWAL/I. COCKBURN, The Anchor Tenant Hypothesis: Exploring the Role of Large, Local, R&D-intensive Firms in Regional Innovation Systems, International Journal of Industrial Organization 21 (2003) 1227–1253.

who would affect the nature of the entire network. Especially widely accepted is the 'structural holes' theory proposed by Burt.[162, 163]

In addition, discussions on supply chain management (SCM) are related: the sort of collaboration in the supply chain that would use steady technical subsidiarity more efficiently has been investigated, but it becomes clear that such a collaborative organization would not be efficient,[164] and instead a certain firm's leadership is more decisive.[165]

A powerful player coordinates and brings about better performance, but could excessively exploit the situation and discourage other players' innovation activities.[166] Striking an appropriate balance seems a key to success.

Iansiti and Levien[167] investigated the nature and functions of such players who pursue both entire organizational coordination and their own interests. According to their research, such a player is called a "keystone". The keystone exercises stronger influence over other companies, but its "share" (such as the number of employees, capital, volume of sales) in the ecosystem is limited and it is not an oppressor. According to Iansiti and Levien, successful keystone companies are Microsoft and Walmart, while an unsuccessful keystone was Enron. This discussion on keystone companies raises questions on the reality of the autonomous ecosystem. Since keystone companies could more easily exist than autonomous ecosystems, perhaps the policy maker should focus on creating a hierarchical ecosystem containing a keystone. Second, in the case of the absence of a keystone, policy may need to support to create a keystone or a substitute of one.

d) Public policy

As we have determined earlier, an industrial cluster accumulates activities with steady technical subsidiarity, enhances their effects and develops the region.

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[162] R. S. BURT, Structural Holes: The Social Structure of Competition (Cambridge 1992).

[163] See G. AHUJA, Collaboration Network, Structural Holes, and Innovation: A Longitudinal Study, Administrative Science Quarterly 45 (2000) 425–455.

[164] M. BARRATT, Understanding the Meaning of Collaboration in the Supply Chain, Supply Chain Management 9:1 (2004) 30–42.

[165] A. COX, Power, Value and Supply Chain Management, Supply Chain Management 4:4 (1999) 167–175; M. CAO/Q. ZHANG, Supply Chain Collaboration: Roles of Interorganizational Systems, Trust, and Collaborative Culture (London 2012).

[166] B. KLEIN/R. G. CRAWFORD/A. A. ALCHIAN, Vertical Integration, Appropriable Rents, and the Competitive Contracting Process, The Journal of Law & Economics 21:2 (1978) 297–326; S. J. GROSSMAN/O. D. HART, The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration, Journal of Political Economy 94:4 (1986) 691–719.

[167] M. IANSITI/R. LEVIEN, The Keystone Advantage: What the New Dynamics of Business Ecosystems Mean for Strategy, Innovation, and Sustainability (Boston 2004).

Public policy would be expected to promote the accumulation of activities, enhance technical subsidiarity and prevent or control accompanying problems.

The promotion of the accumulation of players is an important matter for other types of SEZs as well, but in the case of an industrial cluster, a sufficient number of players with steady technical subsidiarity must be accumulated. But a public authority would not be able to judge if and how such players could be accumulated. Perhaps assistance for an entire group of companies, and not for each company, would be needed, besides improving general business conditions, such as common infrastructure and taxation, i.e. assistance for companies of the group to stay geographically proximate.

7. Self-choice type of industrial agglomerations

a) Feature

Distinctive feature of this type is the high mobility of players, while other types of clusters assume a certain link between territories and players. We assume that many players could move to other countries or regions from this type of cluster or vice versa with fewer costs, and that the state and local government are the only players without mobility. Individuals or firms choose their residence or place of activities, depending on the activities of local government (Tiebout sorting[168]).

b) Structure, conduct and performance

In this type of cluster, the focus should not be put on currently residing players, but on all those who could move to the region. The public players (authorities) should include all possibly relevant states and local governments. This is because currently residing individuals or firms may move out to other regions, while individuals or companies in other regions may move into the cluster.

Public authorities cannot move, but each public authority could offer unique business conditions. Individuals and firms could choose the most favorable business conditions and move into the region. By choosing the optimal location, local division of works could be developed and maximum welfare could be materialized. This is Tiebout's basic logic.

In order to perform a careful analysis, we need a certain hypothesis:

1) Mobility and player's nature:
The scope and degree of mobility may differ, if the player's nature is taken into consideration: the mobility of an individual and of a company may be different; even among individuals, age or skill may matter.

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[168] C. TIEBOUT, A Pure Theory of Local Expenditures, Journal of Political Economy 64:5 (1956) 416–424.

2) Spatial mobility:
A player's mobility may be affected by spatial factors, for example, mobility is limited to areas where a player's existing business relationships with customers can be maintained, to areas where existing legal and administrative services are still be available, or to areas where the player's business custom, language, or culture can be maintained.

3) Costs incurred by accumulating players in a specific area:
Unless the costs of accumulating players in a specific area are zero, how and what kind of costs would occur should be clarified, as well as how costs would affect the choice of business location. These costs could include property prices, burden on traffic and the political decision making-process.

4) Costs of expanding a policy package in specific area:
Authorities tend to offer policy measures to attract not-residing players to move to the authorities' areas. Some authorities may develop multiple policy packages, while others offer only one specific package such as finance, medical services or tourism. Multiple policy packages may be more attractive, but they may increase costs. In particular, the effects of packages may be mutually off-set; for example a policy package to promote firm's business activities and a package to improve the quality of residents' life may contradict each other.

5) Timing of decision-making:
If there are two players and they are considering whether they should move into the cluster, the timing of when these players obtain information and the timing of when they make a decision to move could differ. Such differences may affect their conduct and performance.

6) Public choice through the lens of time:
The moving of players may affect residents' composition in the area. It would also affect local interests and the political agenda. For example, if 10,000 people move into an area with 10,000 residents, the decision-making process in this area would become complicated. Striking an appropriate balance between immigration policy and industrial policy could be key in this context.

c) Experiment: a new insolvency procedure to attract players?

In the case of a self-choice industrial cluster, we do not have to identify what policy measures would be appropriate. We offer therefore food for thought in this context, i.e. an industrial cluster with an exclusive, local, speedy and simplified insolvency procedure.

The liquidation and rehabilitation of insolvent companies is an important process for keeping economic activities active. An insolvency procedure paves the way for reinvesting resources in new business by clarifying executives' liability, distributing losses among creditors and relieving assets from

failed businesses. This facilitates the placement of resources in a new economic cycle. On the other hand, insolvency procedures are often complex, because diverse stakeholders are involved; the legal and economic situations before and after the start of insolvency procedure are vastly different; and information asymmetry among stakeholders would cause serious problems. The complexity of the procedure raises its costs. High costs discourage people from using this procedure and resources from failed business would remain unrelieved.

An idea to solve this dilemma might be to introduce a simplified, speedy and efficient insolvency procedure, which would apply to companies operating in a specific area; in other words, an SEZ with a special insolvency procedure. If we assume that players can move in and out of the area, those who want to use the procedure would move in and those who do not would move out. Business partners with companies in the area could easily be informed that a new insolvency scheme is applicable to their business. If they do not like it, they could reduce or terminate their business with companies in the area. Companies which want to use the new procedure could move into the area.

This makes clear that companies in the area and their business partners outside of the area can agree to apply the new insolvency procedure. A key issue is how to deal with the transition period before and after the introduction of the new procedure. Elaborate transitionary rules would be needed.

V. Summary and Conclusion

This article, by tracing the historical development of SEZs, shows that the concept and functions of SEZs have been evolving. We have offered two perspectives from which to analyze SEZs: the macro and micro perspectives. The micro perspective was further elaborated into four models. These perspectives have been mainly developed by scholars in the fields of business and economics, but they provide a number of legal implications. Some are quite clearly presented, while some are not yet widely recognized. The way to design and manage an innovation ecosystem, for example, needs more contributions from the legal perspective. The purpose of this article in illustrating these perspectives is to provide a detailed map of issues on SEZs in order to stimulate further discussion by legal scholars.

Political Dimensions of Science, Technology, and Innovation Policy and the Importance of Local Contexts

Hideaki Shiroyama

I. Introduction

In this chapter, the political dimensions of science, technology, and innovation policies are considered and analyzed, paying attention to the importance of local contexts. The focus is on where discretionary judgment that involves political judgment is incorporated and what the design of a mechanism and a system of such a judgment should be. Additionally, it is fundamentally important to understand how a particular discretionary judgment and a particular system is made reflecting the characteristics of local contexts where the science and technology is used. Discretionary judgments also represents the power relation of the actors who make those judgments.

In what follows, I first summarizes the scope of science, technology, and innovation policies. Then I outline the subject of analysis of political dimensions by dividing it into several items: risk management with regard to the use of technology, an institutional design of risk regulation, the promotion of knowledge production, the introduction of technology into society, and comprehensive decision-making and a method to support it.

II. Scope of Science, Technology and Innovation Policies

Science is the activity of finding natural laws and causal relationships. The motivation for scientists who try to discover laws and causal relationships is curiosity. Importantly, a level of uncertainty is inevitable in science. It is true that the extent of what is known and understood increases with the progress of science; however, on the other hand, the extent of what is not known and understood increases also with the increase of what is known. In addition, there can be controversy about what is known. If a scientist tries to make a name for themselves in a community of scientists, they need to make a new point, different from what other scientists say. That is why controversy about what is known and understood continues at all times. Mechanisms to tentatively settle such a dispute are the peer review system of journals and so-called journal communities based on those journals.[1] The extent of uncertainty can vary depending on the development of science. In addition, as a result of intensive investment in research, the extent of uncertainty may be narrowed. However, it is also possible that uncertainty is excessively emphasized to justify and secure research funds.

Technology, on the other hand, is a method to achieve a certain function and purpose for society. Technology in a narrow sense is a way to use scientific knowledge to achieve such a purpose and function. In contrast, there is technology that is not necessarily based on scientific knowledge, but on experience in practice. Furthermore, while technology is supposed to be developed for a specific purpose and function, in reality technology developed for a certain purpose is often used for other purposes. For example, there is technology in existence that is used for a much wider purpose than was initially expected when a product based on that technology was first introduced in society.[2] In that sense, we can say that there is uncertainty about how the technology is used.

Science and technology have different features and their users differ as well. Science is mainly driven by scientists, while technology is developed by engineers. Since technology is an activity for a certain purpose in society, engineers are more involved in organizations in society than scientists. Organizations that employ engineers are research institutes and business enterprises, for example. Furthermore, if the subject of consideration is expanded to include technological innovation in society, the consumers of various kinds

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[1] Y. FUJIGAKI, *Senmonchi to Kokyoosei: Kagakugijutsushakairon no Kouchiku ni Mukete* [Expert Knowledge and Public Sphere: Toward the Construction of Science, Technology and Society Studies] (Tōkyō 2003).

[2] H. SHIROYAMA, *Kagakugijutsu Gabanansu no Kinou to Soshiki* [Function and Organization of Science and Technology Governance], in: Shiroyama (ed.), *Kagakugijutsu Gabanansu* [Science and Technology Governance] (Tōkyō 2007) 39.

of technology in a society and a system that regulates it are crucially important, besides the producers of technology. Conversely, to make technological knowledge lead to new demand in society, innovation must include a social system in addition to a technology system. To activate innovation, it is necessary to connect basic research with application research and research for deployment, as well as to disseminate seeds for technology in society to lead to the creation of new industries and a change of institution and lifestyle. For this purpose, a framework is needed to make technological innovation happen by addressing issues integrally and comprehensively, not only from the viewpoint of researchers, but also from that of enterprises and society which are closely related to local contexts.

In this way, the subjects of science, technology, and innovation policy must include not only technological policies in a narrow sense, but also fields of each policy where technology is used in a variety of sites in a local context, for example, an energy policy, a medical policy, and a transport policy, among others. When considering the application of technology in each field, it is especially important to incorporate the characteristics of local sites where the technology is applied. As a result, the subjects of analysis of political dimensions of science, technology, and innovation policy include a variety of items in each field of application, in addition to technological policies in a narrow sense that are applied across the above fields.

III. Risk Management

Risk assessment is generally the product of the probability of damage and the scale of damage. For such an assessment, it is essential to have scientific knowledge based on epidemiological data or animal experiment data. As a matter of fact, discretionary judgment for risk assessment varies depending on whether damage is defined as the number of deaths of people or the number of victims, such as casualties or patients. In addition, when looking at large scale and systemic damage, risk assessment can be different depending on whether we regard a large-scale systematic disaster as being qualitatively different or not.[3]

In a risk communication process, a part of a risk is often neglected or exaggerated. In a case where an enterprise is conducting technological development, even though a risk is identified in the use of the relevant technology, it is possible that such risk information is not voluntarily disclosed to the public because the potential effects on investment returns are taken into account. On the other hand, it is possible that an entity that has no incentive for

[3] H. SHIROYAMA, Technology Governance, in: Komiyama/Takeuchi/Shiroyama/Mino (eds.), Sustainability Science: A Multidisciplinary Approach (Tōkyō 2011) 145.

the success of a certain technology (for example, that belonging to a competing enterprise) exaggerates parts of a risk. In those cases, it is important to perform a comprehensive and well-balanced risk mapping process. Experts and stakeholders in various fields often differ in respect of which aspects of risk they recognize.

Regarding benefits, sometimes benefit articulations are not adequate or exaggerated. In the cases of gene recombination technology or nanotechnology, these technologies' definite benefits for society remain ambiguous because of the distance between the research and development and social utilization. Introducing a genetically modified crop may enable the increase of food production in developing countries, and as a result, poverty in those countries may be alleviated. Introducing medical diagnosis technology that uses nanotechnology may make it possible to perform medical treatments based on continuous monitoring, and as a result, medical costs may be reduced. However, the achievement of these potential benefits is affected by many other factors besides introducing the relevant technology. Therefore, engineers who develop technology complain that, in society's technology evaluation, only the risks are emphasized but the benefits are not sufficiently considered. On the other hand, it is also said that engineers emphasize the benefits of a relevant technology because they need social justification to obtain research funds; however, since these benefits involve many other factors, they can be mere exaggerations.

Both risks and benefits have many facets and the risks and benefits the political process for technology focuses on are fluid and can be different depending on the local context.

For example, there are many cases where the same technology has different risks and benefits when another dimension – that of international relations – is added. For example, domestically the technology of nuclear energy is energy technology; its benefit is the provision of energy and its risk concerns safety. Adding the international dimension and considering the fact that most oil, the major energy source, is imported from the Middle East, the option of nuclear power generation brings with it the benefit of enhanced energy security. In contrast, the possession of technology of nuclear power generation, in particular the technology of nuclear fuel cycles, enhances the risk of nuclear proliferation internationally.

Similar examples can be found for space technology. Owning the capability to launch a satellite usually only means owning the benefits of the use of satellite communication and satellite broadcasting. However, when the international dimension is added, it generates benefits for national security, providing spy satellites and missile rocket-launchers. Space technology is a dual use technology for military and civil purposes; domestically, it is usually a civil technology, however, in the international dimension, there is a risk of military use that facilitates the proliferation of weapons of mass destruction.

In addition, the benefits of technology in particular vary depending on the intentions of a society. For example, conventionally nuclear power generation is regarded benefiting only the energy supply; however, as global warming is considered a social problem it is recognized that there is an additional benefit: the technology will not discharge the global warming-related substance carbon dioxide. On the other hand, the technology of coal-fired power generation was portrayed in the social context of global warming as a risk because it discharges the global warming-related substance carbon dioxide. However, within the growing interest in energy security because of the increase of oil prices it is recognized that the use of coal-fired power generation provides the benefit of energy security, because it uses coal, whose production sites are distributed all over the world (unlike those of other fuels).

Risk management is the activity of judging where the acceptable level of a risk lies, based on risk assessment, and implementing management decisions. To judge the acceptable level of risk management decision-making, it is also necessary to take into account the balance between risks and benefits regarding the relevant technology depending on the characteristics of the local social context. When judging benefits, it is important to consider the distributive implications: to whom do the benefits belong? Even if the overall benefits are large, if they are concentrated on one party, a society can refuse such a technology. Societies have found it difficult to accept nuclear power generation and genetically modified food, for example, even though risk assessment shows that their overall risks are comparatively low. One of the reasons is that the direct beneficiaries of these technologies are limited enterprises.

In addition, there is uncertainty in both risks and benefits. Of course, the range of uncertainty can be decreased as science progresses. However, it is hard to remove uncertainty completely. Therefore, a question is how society judges some uncertainties. A policy choice about whether to choose a precautionary approach or a so-called no regret policy represents a difference in attitude of local jurisdictions toward such uncertainties.[4] A precautionary approach is an attitude of taking precautionary measures such as regulation, even when there is uncertainty, because, should something go wrong, the potential damage is large. In contrast, a no regret policy represents an attitude that, when there is uncertainty about risks, does not take measures to prevent a problem, but only takes measures that are meaningful when nothing happens. Which of these two attitudes is chosen is a question of policy choice in society.

Furthermore, the judgment of the balance between risks and benefits and the judgment of uncertainty are social discretionary judgments dependent on local contexts; however, in a real political process, there can be ways where scientific judgment is used as a guarantee to avoid blame for the use of discretion. For

[4] M. ROGERS, Scientific and Technological Uncertainty, the Precautionary Principle, Scenarios and Risk Management, Journal of Risk Research 4:1 (2001) 1.

example, in Japan, food safety is regulated by the risk management agencies of the Ministry of Agriculture, Forestry, and Fisheries and of the Ministry of Health, Labour, and Welfare; as well as the risk assessment agency of the Food Safety Commission. Therefore, the Ministry of Agriculture, Forestry, and Fisheries and the Ministry of Health, Labour, and Welfare are responsible for the judgment of risk management regarding food safety regulation. However, as seen in the example of restarting beef imports from the US after the BSE scandal, the scientific assessment of the risk assessment conducted by the Food Safety Commission is used to justify the judgment of risk management when restarting imports.[5] On the other hand, looking at nuclear safety regulations, the system under the present Nuclear Regulation Authority does not separate risk management and risk assessment, and the Nuclear Regulation Authority needs to explain its judgment on risk management, which cannot be explained solely by scientific assessment. However, there is a tendency that such judgment is explained based on what is called scientific assessment.

When technology is used in society, a variety of risks and benefits needs to be considered. What social judgment should be made is a problem, considering such a variety of risks and benefits in the local context. In the real world context, it is pointed out that there are a variety of trade-offs in such social judgments.[6]

A risk trade-off means that efforts to reduce a particular risk will increase another risk as a result. For example, when the body weight of a car is made lighter to increase its fuel efficiency, such an effort sometimes increases the risks stemming from the car's safety because it weakens its body in a collision. In this case, the risks of global warming and energy security are reduced, but the safety of the car is reduced. Additionally, when substitutes of Freon gas (which destroys the ozone layer) first appeared in market, there was one that reduced the destruction of the ozone layer but facilitated global warming. In this case, the risk of the destruction of the ozone layer and the risk of global warming are in a trade-off relationship.

In a HIV-tainted blood scandal, the division manager at that time was convicted in a criminal case because he did not rapidly change from unheated blood products that were possibly HIV-infected to much safer heated blood products. In this court case, there was also a judgment about a trade-off, even though it was not a direct subject of the dispute. Regarding potential responses in the HIV-tainted blood scandal, even before heated blood products were available for public use, there was the question of whether to change the products back to

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[5] H. HIRAKAWA, *Risuku Gabanansu: Komyunikeshon no Kanten kara* [Risk Governance: from Communication Perspective], in: Shiroyama (ed.), *Kagakugijutsu Gabanansu* [Science and Technology Governance] (Tōkyō 2007) 73.

[6] J. D. GRAHAM/J. B. WIENER (ed.), Risk vs. Risk: Tradeoffs in Protecting Health and the Environment (Cambridge 1997).

the previous cryoprecipitate. It can be said that the decision to change back to cryoprecipitate was not taken because the risk of unheated blood products was judged to be small when compared to their benefits (they are more effective and convenient for hemophiliacs than cryoprecipitate). However, there was a group of experts that recommended returning to cryoprecipitate; therefore, logically speaking, an alternate judgment could have been made.[7]

The existence of a trade-off like this is often revealed after a certain amount of time passes. For example, it was a long time after the development of Freon gas that the effect of the destruction of the ozone layer was revealed.

When a social judgment is made relating to a technology, sometimes a discussion on values needs to be undertaken in addition to a judgment of the risks and benefits, which inevitably needs to incorporate the local social context.

In social judgments about technology, risks and benefits are explicitly and broadly shown and then a comprehensive judgment is passed. However, when a comprehensive judgment is made, an important factor may have to be considered that functions as a crucial and final determinant, no matter what other benefits and risks there are. For example, there are value problems that are related to human rights or human dignity. Such problems are often important issues in the fields of life science and genetic engineering (fields that are progressing rapidly these days).

For example, behind the issue of restricting animal experiments lies the idea based on utilitarianism to alleviate pain. From this point of view, it is necessary to reduce pain as much as possible, but it is not necessary to prohibit animal experiments providing data that are essential for technological development. On the other hand, where a value is based on the rights of animals and when similar rights to human rights are assumed, it can be concluded that any animal experiments are prohibited, no matter what benefit may lie in those animal experiments.[8]

IV. Institutional Design of Risk Regulation

When the governmental organization makes judgments about risk assessment and risk management, it must have certain special skills and on-site infor-

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[7] Y. HIRONO, *Yakugaieizumondai no Kagakugijutsushakairon Teki Bunseki ni Mukete* [Toward an Analysis of HIV-tainted Blood Scandal from Science, Technology and Society Studies Perspective], in: Fujigaki (ed.), *Kagakugijutsushakairon no Gihou* [Methods for Science, Technology and Society Studies] (Tōkyō 2005) 75.

[8] Y. OUE/A. KAMISATO/H. SHIROYAMA, *Igirisu oyobi Amerika niokeru Doubutsujikke Kisei no Hikaku Bunseki – Nihon no Kisei Taisei heno Shisa* [Comparative Analysis of Animal Testing Regulation in the U.K. and the U.S. – Implications for Regulatory Regime in Japan], *Sakaigijutsu Kennkyuu Ronbunshuu* [Sociotechnica] 5 (2008) 132.

mation. Risk management is, in most cases, entrusted to the relevant departments of each ministry and agency that have jurisdiction in the government. Additionally, what kinds of risks are considered to be important varies in each department; therefore, there can be dispute between departments about what risk management should look like. The governmental organization itself may have a certain number of experts, but it does not have enough experts to deal with matters by itself; therefore, the government seeks other ad hoc experts from outside. The relationship between the governmental organization and such experts varies depending on the local context.[9]

In addition, there are several operational problems regarding the manner in which experts are involved.[10] First, there is the problem of how to set the range and distribution ratio of experts who participate. This discretionary judgment regulates substantial decision–making to some extent. Second, there is the problem of how to combine the participation of experts and that of stakeholders. In councils in Japan, there are many cases where these two parties are chosen in bulk as persons with relevant knowledge and experiences. However, if the purpose is separated between securing a wide variety of views of experts and coordinating the interests of stakeholders, it may be better to set a separate council or committee in accordance with the differences of the expected purposes of the securing experts or coordinating stakeholders. On the other hand, if the coordination of interests cannot be done in councils without a variety of wider expert viewpoints, the present operation can be considered acceptable. Third, there is a lack of trust in councils that have been traditionally undertaking this responsibility.

Next, regarding regulations, there is the issue of designing the relationship between the government organization and non-governmental organizations. The role of expert groups such as academic societies is important. For example, for the setting of technical standards, a rapid response to progress in technology is required. On the other hand, in administration, partnership with non-governmental organizations is facilitated through the trend of administrative reform and the increasing constraints on total staff numbers. In such a situation, there is an increasing attempt to use academic societies for the setting of technical standards. For example, a system has been created where academic societies such as the Japan Society of Mechanical Engineers and the Atomic Energy Society of Japan establish technical standards, and the government accepts them as reference standards. On the other hand, in academic societies, requirements regarding the composition of participants and the openness in establishing the standards have been specified.[11] In addition,

[9] O. RENN, Style of Using Scientific Expertise, Science and Public Policy 22 (1995) 147.

[10] SHIROYAMA, *supra* note 2.

[11] H. SHIROYAMA, *Minkan Kikan niyoru Kikaku Sakutei to Gyousei niyoru Riyou – Genshiryokuanzen Bunya wo Chuushin toshite* [Standards Setting by Non-Governmental

universities and think tanks can sometime play major roles in raising new issues and proposing new policy options.

As non-governmental organizations, the role of trade associations is also important. For example, it is interesting to see the spontaneous roles played by power companies and manufacturers in the US nuclear safety regulations through INPO (Institute for Nuclear Power Operations). Information about event reports and machine failures is provided by member enterprises spontaneously and these pieces of information are analyzed by the INPO. The results are used for safety assessments in each enterprise and are fed back to establish a safety regulation by the government. However, the original information is not available to the public directly. A NGO filed a request to open them to the public, but the court concluded that denying the public a certain kind of information is inevitable to facilitate information collection and sharing.[12] In Japan, using the INPO as a model, the Japan Nuclear Technology Institute has been recently established as a limited liability intermediary corporation. However, it is said that substantial peer review between enterprises is not still enough and that information sharing between enterprises is not adequately performed.

Regarding the regulation of nuclear safety, it is required that enterprises establish a quality assurance system. A quality assurance system does not set explicit individual standards but tries to contribute to securing a certain quality that indirectly includes safety by establishing a continuous communication system within enterprises (sometimes including external audit agencies). Use of a quality assurance system by similar enterprises is tested in the fields of transport safety and medical safety.[13]

Such dependence on non-governmental organizations is reasonable in the sense as it allows for the use of knowledge on-site. However, at the same time, there is the idea that enterprises capture the safety regulatory bodies, a phenomenon which is often criticized. To avoid such capture, a regulator from the government must have certain skills and a deterrent force that allows them to intervene in the self-regulation at the on-site level when needed. To do this, it is important to keep non-governmental organizations separate and have them compete with each other, as well as have regulators cooperate internationally.[14]

Organizations and Utilization by Administrative Agencies – Focusing on Nuclear Safety Area], Jurisuto [Jurist] 1307 (2006) 76.

[12] J. V. REES, Hostages of Each Other: The Transformation of Nuclear Safety since Three Mile Island (Chicago 1994).

[13] H. SHIROYAMA, *Risuku Hyouka, Kanri to Hou Shisutemu* [Risk Assessment, Management and Legal System], in: Shiroyama/Nishikawa (eds.), *Hou no Saikouchiku III – Kagakugijutsu no Hatten to Hou* [Reconstruction of Legal System III – Development of Science, Technology and Law] (Tōkyō 2007) 89.

[14] Y. MURAKAMI, *Kanmin kyoudou niyoru Shakai Kanri – Jidousha Anzen notameno Gijutsu Kijun Sakutei Purosesu wo Sozai toshite* [Social Control through Public Private

It should be noted that there is a part that ultimately depends on the individual ethics of scientists and engineers. The Whistleblower Protection Act that has been introduced recently is a framework that institutionally supports that notion.

In addition, it should be remembered that there are many reasons why standards for risk management should be differentiated depending on the local situation. First, the decision as to where the line of risk management should be drawn based on risk assessment, or whether a precautionary approach or a no regret policy should be adopted considering the uncertainty of risk assessment, is the individual policy decision of local jurisdictions. Second, risk assessment itself varies depending on regional and social conditions. When a local condition is different to another, the amount of risk exposure for each person varies. For example, the regulation of food safety, such as regulations of residual agricultural chemicals, depends on life patterns such as eating patterns in each local situation. The total intake of relevant food varies depending on eating patterns, which introduces a difference in how strict a standard should be set for the relevant food.

On the other hand, there are factors that require harmonization across local jurisdictions. First, the human and financial resources that can be used for risk management in each jurisdiction are limited and risk management is performed in a centralized manner at national or international level to ensure efficiency. Second, there are incentives for enterprises. Differences in risk regulations are not necessarily desirable for enterprises whose products are subject to those regulations. In enterprises, the cost of dealing with regulations varies depending on the scale of relevant production. That is to say, the cost decreases as the scale of production based on a single regulation increases. This is why enterprises desire harmonization into a single risk regulation, even though it is at a high level.[15]

V. Promotion of Knowledge Production

Based on the existence of science and technology, how society should use and regulate science and technology has so far been discussed. However, the existence of knowledge about science and technology is not self-evident. To produce knowledge, society must train people called scientists and engineers and promote research activities. The question is how to establish a framework and a system for knowledge production.

Partnership – Case of Technical Standards Setting Process for Automobile Safety], Kokka Gakkai Zasshi [Journal of State Studies Association] 122:9/10 (2009) 176.

[15] D. VOGEL, Trading Up Consumer and Environmental Regulation in a Global Economy (Cambridge 1997).

We need to re-examine the roles of the legal concepts of "freedom of study" and "freedom of research" in such a context.[16] These concepts have often been considered ways to justify "science for science" and "research for research". However, they can be repositioned as organizational principles to promote knowledge production. In other words, to induce intellectual innovation it is not enough to conduct research by following the instructions of a person of a higher rank in a hierarchical organization. It is true that in research, it is essential to have a support system for the tasks entailed in research activities, but essential ideas arise in spontaneous search activities. Considering this, "freedom of study" and "freedom of research" enable a variety of attempts and experiments in a bottom-up manner; their function is to promote intellectual innovation that contributes to society. During this process, it is important to establish a multidisciplinary network. Furthermore, securing diversity in research and technology may possibly lead to such intellectual innovation. In addition, to promote knowledge production it is necessary to establish a freedom that promotes active attempts and communication by the relevant people, such as researchers, and to have an autonomous organizational form.

The promotion of knowledge production is essential even for the above-mentioned risk assessment. To promote the production of information required for risk assessment, it is essential to have regulations for experiments that allow a variety of experiments. If there is no such regulation and experiments cannot be performed, decision-makers need to depend on imported knowledge that will be the premise of risk assessment. In Japan, it has been pointed out that safety regulations are often so strict that not even the data that is required to apply for a license under the safety regulations can be produced domestically and experimental data obtained overseas has to be used. In this case, information and knowledge that will be the base of risk assessment cannot be accumulated easily.[17]

In this context, a judgment needs to be made about whether or not to restrict research, by considering the short-term safety implications, reducing the possibility of innovation in the long-run and enhancing social vulnerability. Phased clinical trials for pharmaceutical products and trials of medical technologies are examples of where experimental research is conducted under a specific framework. The relaxation of safety regulation is presumably also possible using a "Special District" framework.

Institutional mechanisms that promote knowledge production include a variety of factors other than the above-mentioned matters. It is a point of discussion whether an intellectual property right should be used to enhance in-

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[16] R. YAMAMOTO, *Gakumon to Hou* [Academics and Law], in: Shiroyama/Nishikawa (eds.), *supra* note 13, 143.

[17] SHIROYAMA, *supra* note 2.

centives for researchers. If the economic incentive for the success of research is important for researchers by using intellectual property rights, knowledge production can be promoted by employing such a mechanism.

However, if the major motivation of knowledge production is not the economic incentive but to satisfy an intellectual curiosity or the evaluation of colleagues in an expert community, using intellectual property rights does not work. In addition, an intellectual property right in subjects that are subdivided might make it hard to produce knowledge by combining a variety of elements. A conventional principle for the circulation of knowledge in a research community is to use academic commons (common resources). In the academic community, giving credit to those who made a discovery is ethically important, but the result of research is shared in the research community as early as possible and is used freely to promote further research.[18] It is an important option of a system design either to maintain academic commons for knowledge production or instead to use intellectual property rights more frequently.

Methods of accident investigation also relate to knowledge production. When an accident occurs, on the one hand, there is a movement to deal with the social expectation of punishment by clarifying who is responsible for it and punishing that person. On the other hand, there is also a movement to learn by clarifying the causes of the accident and to try to prevent similar accidents in the future. These two movements do not necessarily contradict each other. Identifying the person responsible and punishing that person have a future deterrent effect, and it can contribute to preventing accidents from happing again. However, sometimes these two movements may contradict each other. For example, when an investigation regarding the cause of an accident needs information from a person concerned, that person may have incentives to hide the information because they are afraid that the information will be used to punish them, and as a result the learning process necessary to prevent further accidents is hindered.[19]

In Japan, it is often claimed that, when an accident occurs, accident investigations to identify the cause and safety measure improvements are disregarded, and the pursuit of legal liability (in particular criminal liability) is more emphasized. Considering the above elaborations, the following statements have been made, mainly by engineers:

"We need to adopt a standpoint that does not purse the liability of the responsible person when an accident occurs while driving normally [...].

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[18] M. A. HELLER/R. S. EISENBERG, Can Patents Deter Innovation? – The Anticommons in Biomedical Research, Science 280 (1998) 698.

[19] H. SHIROYAMA, *Anzen Kakuho notameno Hou Shisutemu – Sekinin Tsuikyuu to Gakushuu, Daisansha Kikan no Yakuwari, Kokusai Chouwaka-* [Legal System for Ensuring Safety – Legal Liability and Learning, Role of Third Party, and International Harmonization], Shisou [Thought] 963 (2004) 40.

To clarify the true cause of the accident, a testimony by the person concerned is essential. However, it is hard to obtain a valid testimony when that is likely to cause the person concerned to be held criminally liable. To obtain a testimony that is important for the accident investigation, an option would be to assure the person that the testimony cannot be used to pursue criminal liability (to provide exemption from liability)".[20]

In addition, there have been pleas to look to the US as

"there seem to be many things that Japan needs to learn from the U.S. about how to legally deal with a failure. In the U.S., where a failure is looked squarely in the eye, there is an original legal system called the plea bargaining system that reveals the true cause of a failure with the condition of exemption from liability. The plea bargaining system assures a guarantee of exemption from liability to the person concerned who is at the center of the crime, in other words, a failure, and in exchange for it, the system has the person concerned tell the truth".[21]

Indeed, a tension between providing information that contributes to learning and the pursuit of liability is acknowledged, in particular in the US. Therefore, for the purpose of a report of an accident investigation or a peer review report in a medical institution, the restriction of the use of accident investigation reports as evidence is explicitly stipulated for in civil lawsuits. However, as a matter of accuracy, even in the US the restriction of use of reports as evidence is not stipulated for the pursuit of criminal liability. On the other hand, in Japan the restriction of their use as evidence has never been stipulated explicitly. For example, a report of an airplane accident investigation has often been used as an expert opinion in writing for the pursuit of criminal liability. There is a guideline that an incident report in aviation shall be excluded from the pursuit of administrative liability, but there are no such statements regarding criminal or civil liability.

Considering the above comparison, in general an institutionalization of the protection of information is necessary in Japan. However, for the pursuit of an individual's criminal liability (that is the core of any pursuit of liability in Japan) it is difficult to establish the restriction on the use of accident investigation reports as evidence because of the characteristics of the pursuit of criminal liability.

In addition, the measures to validate an accident investigation by having the person concerned provide information is not limited to protecting information. For example, in an accident investigation at the National Transportation Safety Board in the US, a "party system" was introduced; this encour-

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[20] NIHON GAKUJUTSU KAIGI [Science Council of Japan], *Koutsuu Jiko Chousa no Arikata ni kansuru Teigen – Anzen Kougaku no Kanten kara* [Recommendation on the Way of Transport Accident Investigation – from the Perspective of Safety Engineering] (Tōkyō 2000).

[21] Y. HATAMURA, *Shippaigaku no Susume* [Recommendation of Failure Studies] (Tōkyō 2000).

ages concerned parties, including airplane manufacturers, to participate. In Japan, because of the possibility that the person concerned hides and distorts information, or because the maintenance of a neutral appearance is emphasized, such a system is not used. However, considering that the collection of information needs to be valid for accident investigations and an effective analysis, this seems to be an interesting option.[22]

Those institutional choices for knowledge production, such as the institutionalization of freedom of research, the use of intellectual property and academic commons and the design of accident investigation, are also different depending on the local context.

VI. Social Introduction of Technology

When a society chooses a certain type of technology, a phenomenon occurs where the chosen technology determines subsequent societal technology choices. Even when better technologies are developed, the existing technology continues to be dominant because it is already prevalent. Such a phenomenon is called the "lock-in effect" of technology. An example is computer keyboard layout: once a certain method is fixed, it is hard to change.[23]

Such a lock-in not only occurs technologically, but can also be institutionally secured. It is possible that a certain technology is intentionally chosen by a government as a social standard. This standard is sometimes compulsory. It can be internationally standardized among governments or at a societal level. If a technology is institutionalized in this way, the lock-in becomes more robust. A technological social system is established for particular technology.

In addition, such an institutionalization of a lock-in is reinforced not only directly as the standardization of the relevant technology, but also through a variety of relevant systems. In the field of car technology, a set of systems were introduced such as the so-called road-specified special account budget system (through which a revenue source for road construction is secured from tax on automotive fuels), several police-installed traffic management systems, and insurance systems to compensate for certain inevitable accidents; all these systems reinforced the technology choice.

The lock-in is fixed politically by the entity that supports such a technology and the relevant systems. In other words, the stakeholders supporting the relevant technology have a certain power as a vested interest group in the society and market: this is capture on the part of vested interests. On the other hand, the institutionalization is in part rational policy. For enterprises and

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[22] SHIROYAMA, *supra* note 19.

[23] P. A. DAVID, Clio and the Economics of QWERTY, The American Economic Review 75:2 (1985) 332.

those stakeholders that economically invest in certain technologies, the stability of a policy enabled by lock-in is extremely important. Conversely, only by explicitly showing the lock-in, can a stable investment by the relevant stakeholders be obtained.

However, in a society a situation can arise where it must do away with a commitment to a certain technology that has been locked-in and choose another technology. In such a situation, during the policy management process regarding the technology's introduction, three issues are important: how to "unlock" it, how to make social judgment about new technology, and how to implement the judgment.

When the new technology can share infrastructure with the existing technology, its introduction is relatively easy. For example, one of the reasons why introducing hybrid cars in society was easier than electric cars is that hybrid cars did not require new infrastructure.[24]

Strategic niche management (SNM) posits that technology does not develop independently but develops co-evolutionary with several factors involved and the complex of those factors (scientific knowledge, the customs in engineering, production technology, product specification, skills and procedures, definite user needs, a required condition for regulation, a system, a comprehensive complex composed of infrastructure) was defined as a technological regime. SNM pointed out that to switch a technological regime, it is important to introduce technology in a specific niche (an appropriate place, a gap) where new technology can survive.[25] For selecting niches, consideration of characteristics of local contexts is indispensable. Here, a niche is a "nurtured space" where new technology can survive without competing with existing, dominant technology and where that technology is nurtured. For example, the technology of gas turbines that is used for power generation today was able to survive only in the limited space of airplanes and military use in the 1940s, and the use of such fields was considered a niche for the gas turbine technology.

Furthermore, in transition management (TM) the viewpoint of multi-level governance (MLG) was introduced where a transition process across three layers (a landscape layer, a regime layer, and a niche layer), that is, the bottom-up interaction (from the niche to the regime and to the landscape) and top-down interaction (from the landscape to the regime and to the niche) is important. To expand social experiments in local niches, it is important to continuously moni-

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[24] M. YARIME/H. SHIROYAMA/Y. KUROKI, The Strategy of the Japanese Auto Industry in Developing Hybrid and Fuel-cell Vehicles, in: Mytelka/Boyle (eds.), Making Choices about Hydrogen: Transport Issues for Developing Countries (Tōkyō 2008) 187.

[25] R. KEMP/J. SCHOT/R. HOOGMA, Regime Shifts to Sustainability Through Processes of Niche Formation: The Approach of Strategic Niche Management, Technology Analysis & Strategic Management 10:2 (1998) 175.

tor social influence due to introducing a technology and to fine-tune the form of introduction in accordance with the monitoring results. It is also important to set a framework where a technological diversity is maintained when a technology is introduced and the final choice of a technology is made after monitoring them for a certain period. It was also pointed out that there are three large roles: the role of an outsider that brings new insights and a power relationship that places new social experiments, the role of a place (transition arena) where such an outsider works together sometimes with insiders, and the role of a framing (a framework of recognition of the issues) that allows the recognition of the extensive social significance of the new technology.[26] A mechanism to terminate a lock-in is also a mechanism to reorganize a power relationship by inviting a new actor (an outsider) under a new framing in exchange for a conventional vested interest group. In Japan, the importance of framing with regard to technology and that of an unofficial place in the process of introducing a new technology is also pointed out in relation to the introduction of renewable energy and new transport technologies.[27]

VII. Mechanisms of Comprehensive Decision-Making and Decision Support Methods

Regarding science, technology, and innovation policies, the necessity of a mechanism for comprehensive decision-making is asserted in a variety of forums. For example, in the report of an expert workshop for the promotion of science, technology, and innovation policy written in December 2011 under the regime of the Democratic Party of Japan, specific models of a new organization for the promotion of science, technology, and innovation policy were proposed.[28] In particular, it was argued that three functions of the organization (that is, control tower, scientific advice, and collecting/ analyzing information) are important. The necessity of a comprehensive strategy and an information and analytical base for that is also recognized by the current Liberal Democratic Party administration in the Fifth Science and Technology Basic Plan adopted in January 2016.

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[26] D. LOORBACH, Transition Management: New Mode of Governance for Sustainable Development (Utrecht 2007).

[27] T. SUZUKI/H. SHIROYAMA/M. MATSUMOTO (eds.), *Enerugii Gijutsu Dounyuu no Shakai Ishikettei* [Social Decision Making for Introducing Energy Technologies] (Tōkyō 2007).

[28] CABINET SECRETARIAT, *Kagakugijutsuinobeshon Seisaku Suisin notameno Yuusikisha kennkyuukai Houkokusho* [Report of the Expert Committee for the Promotion of Science, Technology and Innovation Policy] (Tōkyō 2011).

Instead of conventionally highlighting specific technological fields as important fields, it is necessary to make a decision on the setting of priorities in an organization for the promotion of science, technology, and innovation policy directly connected to important social issues. This recognition is also shared today by the regime of the Liberal Democratic Party in Japan, and the reformation of the Council for Science and Technology Policy into the Council for Science, Technology and Innovation Policy seems to be one result of this direction. The question of what institutional mechanism makes such a prioritization possible is interesting for international and domestic comparison among fields. However, this prioritization necessitates the prioritization of the overall society or policies in the local context and there is an endogenous limitation regarding whether prioritization is possible only within a framework of science, technology, and innovation policy.

On the other hand, an important premise while making strategic decisions is to clarify the assessment function in a broad sense; in other words, there is a variety of social implications of technologies and a variety of social expectations for technology, and advice should be given based on a comprehensive knowledge of technology and innovation. These are also functions that are required for technology assessment (TA) in the public sector, which clarifies the social impact of technology in a specific local context. A technology assessment on same technology can be different depending on the local context as the different technology assessments of nuclear technology after the Fukushima accident in France and Germany shows. Assessment is also the mechanism to provide disturbance from outside, as a premise for intervening in risk regulations and technology policy that are usually dealt with in each field separately and constitute a locked-in system. What institutional mechanisms enable such an assessment is also an interesting subject in international comparison and and domestic comparison among fields.[29]

In addition, academic societies can play a vital role in assessments; however, a social function of academic societies is not only possible within each individual field, but also for academic society at large. In that sense, there is a potential role for the Science Council of Japan. However, in reality, academic societies have vertically divided structures – even more so than general society or ministries of governments. In that case, a think-tank that has a lateral

[29] H. SHIROYAMA/G. YOSHIZAWA/M. NATSUO/R. HATANAKA, *Seidoka naki Katsudou – Nihon niokeru TA (Tekunoroji Asesumento) oyobi TA teki Katsudou no Genkai to Kyoukun* [Activities without Institutionalization – Limits and Lessons of TA (Technology Assessment) and TA like Activities in Japan], Sakaigijutsu Kenkyuu Ronbunshuu [Sociotechnica] 7 (2010) 199. H. SHIROYAMA/G. YOSHIZAWA/M. NATSUO, *TA (Tekunoroji Asesumento) no Seido Sekkei niokeru Sentakushi to Jissijou no kadai – Oubei niokeru Keiken karano Chuushutsu* [Alternatives of Institutional Design and Issues for Implementation of TA (Technology Assessment) – Drawing Lessons from the U.S. and European Experiences], Sakaigijutsu Kenkyuu Ronbunshuu [Sociotechnica] 8 (2011) 204.

structure may be able to play a more flexible role. In addition, in assessment, where multi-dimensional assessment criteria should be raised, certain roles fall to the general public and mass media. When technology is used, the role of the general public as users and consumers is large. There has been a case where members of the public who participated at the stage of technology introduction and policy decision played a certain role. In Japan, in 2000, a consensus conference about genetically modified crops was held by the relevant groups in the Ministry of Agriculture, Forestry, and Fisheries. In that instance, the participating general public played a certain role to provide a broad view that was not limited to the safety of genetically modified crops (for example, the necessity to introduce genetically modified crops under the agricultural policy in Japan or the influence of genetically modified crops on food problems in the world, among others).[30] A deliberative poll on energy policies conducted in the summer of 2012 was another experiment.

In addition, the proverb "sharing same bed with different dreams" is important to consider in the context of comprehensive decision-making. As we have emphasized, societal actors have a variety of visions and interests. In this case, it is rare that the assessments by a variety of actors will converge. For example, an actor may be interested in nuclear technology and the technology of biomass energy from the viewpoint of global warming, while another actor may be interested in the same technologies for the purpose of energy security. In this case, different actors have different interests, but they can have an agreement and form an alliance to support a certain technology choice.[31]

Conversely, to clarify a variety of benefits and risks that different actors perceive in local contexts through stakeholder analysis and problem structuring analysis, among other methods, is the analytical precondition to the support of possible alliances based on the "sharing same bed with different dreams" idea among a variety of actors.[32] Of course, forming alliances of this kind is not always possible and stable, and there are many cases where certain political choices among values and actors must eventually be made, leading to trade-offs.

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[30] T. KOBAYASHI, *Dare ga Kagakugijutsu nitsuite Kangaeru noka?: Konsensasukaigi toiu Jikken* [Who Think about Science and Technology?: Consensus Conference as Experiment] (Nagoya 2004).

[31] H. SHIROYAMA, *Kankyo Mondai to Seiji* [Environmental Issues and Politics], in: Karube/Uno/Nakamoto (eds.), *Seijigaku wo Tsukamu* [Grasping Politics] (Tōkyō 2011) 275.

[32] H. KATO/H. SHIROYAMA/Y. NAKAGAWA, Public Policy Structuring Incorporating Reciprocal Expectation Analysis, European Journal of Operational Research 233 (2014) 171.

II. Special Economic Zones and the Legal Environment

Special Economic Zones: A Constitutional Political Economy Perspective

Tom Ginsburg

I. Introduction

Constitutional regulation is the highest level of governance within nation states, and as such has an inexorably spatial element. This is true almost by tautology, since the rise of the written constitution coincided with the rise of the territorially defined nation-state. But my claim that constitutions are regulators of space is a bit more specific, since the constitution determines what law applies where and when. And the dimension of "where" is one on which constitutions increasingly allow for variation. While equality among persons is a central element of human rights discourse and modern constitutionalism, discrimination across space is equally central to modern constitutions, and receives far less attention.

In thinking about Special Economic Zones (SEZs), I will argue, a constitutional perspective is helpful. The debate over SEZs has much in common with the arguments made by proponents of constitutional federalism, and I will elaborate on the similarities and differences between the two. More broadly, constitutional ideas of regulatory competition and the generation of public goods help us to understand SEZs in a clearer light. Thinking about how SEZs might advance or retard the policy objectives of federalism will help us gain leverage in thinking about their normative desirability. A constitutional perspective, then, will help to clarify the promise and peril of SEZs.

This chapter is organized as follows. First, we discuss constitutional regulation of space, focusing on a broader discussion of the rationales of federalism. Next we consider SEZs from this perspective, showing that they are an imperfect substitute. Both federalism and SEZs emphasize learning and policy experimentation. But whereas federalism works primarily through peer-to-peer borrowing of successful policies, and rejection of unsuccessful ones, policy diffusion from SEZs depends very much on the decision of the center. This means that SEZs risk simply being a mechanism of what is sometimes called "investment diversion" rather than a mechanism of policy experimentation.[1] Furthermore, the possibility of establishing an SEZ creates an incentive for wasteful lobbying and rent-seeking by local politicians. I argue that the SEZ mechanism is overly dependent on central government decision-making, and that any government capable enough of using SEZs for policy experimentation ought to pursue a policy of national liberalization. Relative to a system of jurisdictional competition among subnational units, the SEZ mechanism is a second best, and contains some risks of political lock-in that might prevent it from being as beneficial as it might otherwise be.

II. The Spatial Dimensions of Constitutional Regulation

Constitutions are sometimes described as embodying national values and helping to create national identity. From an economic perspective, however, constitutions are devices for the creation of public goods at a national level.[2] Constitutions are also devices for agency control: setting up structures for the selection of government officials, and for ensuring that those officials act in ways that align with the public interest, rather than pursuing their own self-interest. This has been a theme of the literature on constitutions since at least the time of James Madison.

Creating public goods involves setting the framework of government regulation. Governments need to regulate in order to create public goods and prevent public bads: for example, government will need to tax certain activities to fund national defense, or to prevent environmental pollution. Government agents are the people who are given power under the constitution to make such decisions.

One can think of any form of regulation as involving several dimensions: who, what, how, when and where. The "who" concerns who gets to regulate whom: one might think of this dimension as defining the subjects and objects of regulation. The "what" identifies proper topics of regulation, and may

[1] On investment diversion, see R. E. BALDWIN/R. FORSLIND/I. HAALAND, Investment Creation and Investment Diversion in Europe, World Economy 19 (1996) 635–661.

[2] See D. MUELLER, Public Choice III (New York 2003).

provide limitations or outer boundaries on what rules are acceptable. The "how" dimension concerns procedural limitations: what rules must be followed in order to properly make rules. "When" covers the dimension of time: how long regulations can last, and the availability of tools to vary the temporal scope of regulation.[3]

Each of these dimensions is a central element of constitutional design. Constitutions, almost by definition, answer the who question by allocating authority among government regulators, and in democratic countries they stipulate who can exercise regulatory authority on behalf of the people. They also define the subjects of regulation, such as citizens, nationals, and foreigners. Constitutions will also provide for substantive limitations on regulation, either through providing an affirmative list of proper subjects of government regulation, or through the now-ubiquitous inclusion of constitutional rights that provide limits on government authority.[4] And constitutions provide procedures for making legitimate rules, such as giving notice, or passing through stages of a legislative process. These are is the "what" and "how" of regulation. Finally, constitutions regulate time, most obviously through their attempt to provide "dead-hand" limitations on what the living can do.[5] By their nature, constitutions are a kind of intertemporal imperialism by which one generation seeks to constrain the future.[6] More broadly, the general aversion to *ex post* regulation (explicitly found in more than 80% of constitutions currently in force), is a clear way of addressing the temporal dimension in constitutional regulation. And prescribed dates for elections, meetings, changes in power, and government formation all fall along the dimension of time.[7]

Our focus in this paper is on space as a dimension of regulation, the so-called "where" in my list of question words above. Constitutional orders must

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[3] S. RANCHORDAS, Constitutional Sunsets and Experimental Legislation: A Comparative Perspective (Cheltenham 2014); T. GINSBURG/J. S. MASUR/R. H. MCADAMS, Libertarian Paternalism, Path Dependence, and Temporary Law, University of Chicago Law Review 81 (2014) 291–359.

[4] With my co-authors in the Comparative Constitutions Project, we have identified only fourteen constitutions that completely omit rights from their edicts. These constitutions are: Haiti (1811), Paraguay (1813), Liechtenstein (1818), Guatemala (1851), the Soviet Union (1924), Sri Lanka (1931), Bhutan (1953), the Republic of Vietnam (1965), Thailand (1976), Thailand (1977), Afghanistan (1979), Lesotho (1983), Mauritania (1985) and Poland (1992). These 14 constitutions represent fewer than two percent of the 759 constitutions in our sample, which suggests that rights have been very central to the practice of writing down constitutions from the very beginning. Importantly, no constitutions in force today contain zero rights. Z. ELKINS/T. GINSBURG/J. MELTON, Writing Rights, book manuscript.

[5] A. M. SAMAHA, Dead Hand Arguments and Constitutional Interpretation, Columbia Law Review 108 (2008) 606.

[6] J. RUBENFELD, Freedom and Time: A Theory of Constitutional Self-Government (New Haven 2001).

define the spatial boundaries of their regulatory authority, for example by providing definitions of borders, and specifying any extraterritorial application.[8] For our purposes, though, the crucial issue is *internal* variation on the dimension of space: can different territories or regions within a country have different answers to the *other* questions of regulation? That is, can a sub-unit, such as a state, province or designated city have different rules about what is regulated, how regulation is produced, who is regulated and when rules apply?

This is of course the classical question of federalism, and we will briefly review that literature. But as we will see, the notion of temporal variation is more ubiquitous than that, and the logic of SEZs differs from that of federalism. The where question is answered in complex ways in different systems.

III. Federalism

Federalism is the classical approach to thinking about regulatory variation across space within a single state. In a federal system, there is a constitutional division of authority between a central government and one or more sub-units, the distinguishing feature of which is that there are some topics on which the sub-unit rules will stand in the face of central opposition.[9]

Federalism is seen as having several advantages. As the founding fathers of the United States argued, multiple governments can reduce the risk of tyranny. As Madison argued in Federalist 51, the logic of federalism was that:

"power surrendered by the people is first divided between two distinct governments, and then the portion allotted to each subdivided among distinct and separate departments. Hence a double security arises to the rights of the people. The different governments will control each other, at the same time that each will be controlled by itself."[10]

Beyond allowing governments to control each other, federalism played a central role on Madison's idea of "extending the republic" to avoid domination by a single group or faction within the country. That is, Madison saw the danger of tyranny arising not just from the government, but from the society as well. As he put it in Federalist 10,

"The smaller the society, the fewer probably will be the distinct parties and interests composing it; the fewer the distinct parties and interests, the more frequently will a majority be

[7] More general on time, see J. GERSEN, Temporary Legislation, University of Chicago Law Review 74 (2007) 247–298; J. GERSEN/E. POSNER. Timing Rules and Legal Institutions, Harvard Law Review 121 (2007) 543.

[8] In the US see K. RAUSTIALA, Does the Constitution Follow the Flag?: The Evolution of Territoriality in American Law (Oxford 2009).

[9] This is my working definition from the Comparative Constitutions Project.

[10] J. MADISON, Federalist, No. 51 (1787), available at: <http://www.let.rug.nl/usa/documents/1786-1800/the-federalist-papers/>.

found of the same party; and the smaller the number of individuals composing a majority, and the smaller the compass within which they are placed, the more easily will they concert and execute their plans of oppression. Extend the sphere, and you take in a greater variety of parties and interests; you make it less probable that a majority of the whole will have a common motive to invade the rights of other citizens; or if such a common motive exists, it will be more difficult for all who feel it to discover their own strength, and to act in unison with each other."[11]

Beyond the promotion of liberty and the protection of rights, three other crucial rationales are often given for federalism. First, federalism allows public goods to be produced at a lower level, presumably allowing for better overall alignment between preferences and policies for certain types of goods.[12] That is, if people in region A prefer more environmental protection and fewer industries, and people in region B prefer the reverse, allowing the choice to be made at the level of the region will better reflect people's preferences. This is basically the principle of subsidiarity as it has been articulated in European Union law. And it has been implicitly recognized in Japan's decentralization program since the early 1990s.

A second, related point is that jurisdictions that compete with each other for citizens will be encouraged to produce optimal baskets of policies. Sometimes called Tiebout sorting, after the economist who identified the dynamic, the basic idea is that citizens will "vote with their feet" and move to different jurisdictions that better reflect their preferred bundle of policies.[13] This will lead to more responsive government, as local jurisdictions will compete with each other to offer attractive packages of policies. Tiebout focused in municipal finance, but the same logic can occur with federalism, again promoting better alignment of preferences and policies.

Third, and related to the point about sorting, federalism allows for experimentation in policies. In the United States, it is often said that the states are policy laboratories for democracy, allowing for experimentation.[14] If policies are adopted that work in one state, it might provide the basis for the adoption of the policy elsewhere. This might mean adoption throughout the country by the central government, as in the recent United States healthcare legislation,

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[11] J. MADISON, Federalist, No. 10 (1787), available at: <http://www.let.rug.nl/usa/documents/1786-1800/the-federalist-papers/>.

[12] MUELLER, *supra* note 2, 287.

[13] C. M. TIEBOUT, A Pure Theory of Local Expenditures, The Journal of Political Economy 64 (1956) 416–424.

[14] The phrase comes from Justice Louis Brandeis in *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) ("It is one of the happy incidents of the federal system that a single courageous State may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country."); J. A. GARDNER, "The States-as-Laboratories" Metaphor in State Constitutional Law, Valparaiso University Law Review 30 (1996) 475.

which had started as a policy for the state of Massachusetts. Or it might mean adoption by some of the other units through horizontal, peer-to-peer processes such as imitation or learning. The latter dynamic is addressed in a large literature on policy diffusion.[15] One example concerns smoking regulation, which began in a few progressive cities, but then spread elsewhere as jurisdictions learned from each other and emulated their policies.[16] Another American example is welfare policy, where states have a lot of room to develop new ways of implementing policies, even if most of the funds come from the central government. The experimentation and diffusion arguments are really about information: policy experimentation allows policymakers to learn about and improve on the policies, as well as to spread them to other jurisdictions.

It should be clear that all of these advantages *might* be obtained in a system of devolved government rather than constitutional federalism. That is, empowered local government such as emerged in Japan beginning in the 1990s might be able to achieve many of the same benefits of alignment, policy competition and experimentation. One need *not* have a system of constitutional federalism to gain these advantages. Indeed, many countries that are not formally federal still employ active systems of decentralization, in which particular policies are assigned to lower levels of government, with the idea that this allows better production of local public goods, and better alignment of policies with local preferences.

Proponents of constitutional federalism, however, argue that constitutionalization allows the polity to *commit* to the policy of decentralization. Constitutions, by virtue of their entrenched nature, allow for greater reliance by citizens and foreigners on their promises than does ordinary law or policy.[17] Having some realm of authority that cannot be retracted by the central government allows units in a federal system to be more credible. In our context, a SEZ that is set up by statute or ministerial regulation is less secure than is one set up in the constitution itself, which requires, typically, a supermajority to change.

Note as an aside that constitutional federalism need not treat all the sub-units equally. In India, Jammu and Kashmir and several other regions get special constitutional treatment by virtue of the terms of their accession.[18] In the United States, all the units are treated equally, but Texas has reserved the right to split into four states as a condition of its accession instrument in 1845. In Tanzania, the federal system is really composed of just two units, the former Tanganyika and the island of Zanzibar, which is majority Muslim and has a different character. Special treatment for one or more sub-units is called

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[15] For a nice summary, see C. SHIPAN/C. VOLDEN, The Mechanisms of Policy Diffusion, American Journal of Political Science 52 (2008) 840–857.

[16] GINSBURG et al., *supra* note 3.

[17] S. HOLMES, Passions and Constraint (Chicago 1995).

[18] See Constitution of India, Art. 370.

asymmetric federalism.[19] Note that it need not be limited to tolerating special differences in spatial regulation, but can also include representation at the center. In Canada, for example the culturally distinct province of Quebec is guaranteed three seats on the Supreme Court.

IV. Special Economic Zones as Asymmetric Federalism?

Are SEZs is a kind of asymmetric federalism? This section will consider the question, and suggest that the answer is a qualified yes. First, however, we should describe the phenomenon we are addressing.

In recent years, there has been a trend toward establishing special regulatory zones within unitary states, as a mechanism of economic revitalization. These of course date back many years, but are now found in at least 28 countries and possibly many more. SEZs include free trade zones, special export promotion zones and many other types. SEZs are particularly popular in East Asia. Korea's Incheon Zone, Japan's new policy of SEZs, and China's experiments in Shenzhen and Guangdong are notable examples in the region under consideration.[20]

A key characteristic is that the SEZ is a mechanism for a policy of liberalization, in which generally applicable economic regulations are set aside or reduced, to facilitate the freer movement of capital, goods and services with a goal of generating economic dynamism and, in some cases, revitalization. This means that by definition there is spatial differentiation on the dimensions of regulation identified at the outset of the paper. For this reason, SEZs are indeed a species of asymmetric federalism, although not always embedded in the constitution itself. Let us pursue the analysis a bit further.

In thinking about the rationales of federalism, one sees only incomplete overlap. The basic idea of spatial experimentation of policies is similar. Policies adopted in SEZs can form the basis for learning, and thus the broader adoption of the good policies in other territorial regions.

However, there are some key differences. Whereas federalism allows for alignment of policies and preferences, SEZs do not. That is, there is no reason to think that the citizens of the jurisdiction that has been designated as an SEZ have particularly strong preferences for liberal policies. While most people value economic development, there is no reason to think that the people who live in and around a SEZ have different preferences from those of

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[19] A. STEPAN, Federalism and Democracy: Beyond the U.S. Model, Journal of Democracy 10:4 (October 1999) 19–34; Y. P. GHAI, Autonomy and Ethnicity: Negotiating Competing Claims in Multi-Ethnic States (New York 2000).

[20] Note: Prof. Basedow's chapter in this volume (see p. 3) identifies the different logic of these various approaches.

other parts of the country. It may be that other jurisdictions nearby would like to try the policy, but have lost out in an internal competition for being designated as an SEZ. Or perhaps the SEZ has been designated from the center, without local participation. Either way, there is no reason to think of SEZs as having the governance advantages of alignment that we identified above.

Furthermore, it is not always clear that the Tiebout effects can operate, as not all SEZs allow the free movement of persons. Hong Kong, for example, can be considered a form of an SEZ, with quite distinct constitutional rules that are nevertheless not immunized from unilateral change by the National People's Congress of China. During the experiments with SEZs in Guangzhou and Shenzhen in the early years of China's opening, there was no free movement of persons to those regions. Instead, capital was brought to the people. Thus it is not clear that the incentives given to SEZs will produce the right combination of policies.

The other rationales for federalism are also absent. No one to date has asserted that SEZs have any quality that facilitates the reduction of tyranny. Rights are not any more likely to be protected in SEZs; indeed, proponents of labor and environmental regulation might fear that SEZs facilitate the *reduction* of certain kinds of protections.

The possibility of SEZs might actually contribute to another problem identified by constitutional political economists—the agency costs of government. If the center announces that it will be granting certain regions a designation as an SEZ, it will make sense for local politicians to lobby hard to become one of the favored areas. Lobbying of this kind is usually viewed as socially wasteful "rent-seeking", because the collective amounts of money spent to obtain the designation may exceed the social benefit that will be obtained from the policy. The lobbying involves a kind of transfer from localities to the central government officials who will be making the decision, and those officials might end up making their decisions on the basis of who had the best lobbyists rather than the actual merits. This is a kind of political cost to SEZs.

If SEZs have no particular political advantages and perhaps some potential costs, their case must be purely economic. While this is not the place here for a complete economic analysis – which ought to include phenomena such as externalities and investment and trade diversion – we can say something about the mechanisms of identifying and spreading good policies.

V. Mechanisms of Policy Transmission

Let us return to our argument about the role of experimentation. When one spatial unit has the power to adopt and implement a different set of policies from others, everyone has the potential to learn from this decision. After it is implemented, information on the performance of the policy can be spread,

either to the national government or to peers. This is a general feature of spatially distributed decision-making

A key point is that a constitutional federalism generally favors the mechanism of peer-to-peer borrowing rather than centralized adoption of successful experiments. This is because there will be some issues on which the prior allocation of governmental authority ensures that the issue is *only* covered by sub-national units. In such cases, only the processes of horizontal borrowing can operate.

These are potent mechanisms. A large literature has grappled with the ways in which the mechanism of peer-to-peer adoption can facilitate jurisdictional competition.[21] Jurisdictional competition has been celebrated in the domestic context, but is sometimes criticized in the realm of international trade. The criticism concerns the so-called "race-to-the-bottom" whereby competition for capital can facilitate a reduction of regulation to the lowest levels, leaving, potentially, all worse off. (A separate dynamic of a "race to the top" might operate under certain narrow conditions.)[22] Some, for example, argue that corporate law in the United States has concentrated in Delaware because of low regulation.[23] Similarly, in the trade context, there are fears that SEZs will allow for the setting aside of important labor and environmental protections.

If the SEZs are the basis of peer-to-peer adoption of successful policies, they may indeed lead to a race to the bottom. Whether this is a good thing really goes to the welfare effects of SEZs, and ones view of liberal economic policy. Some might argue that the labor and environmental protections deserve priority over wealth-creation. But I want to make a separate point, which is that, when compared with a classic federal scheme, the information generated by SEZs is less likely to spread through peer-to-peer mechanisms, and more through the adoption by the central government of similar policies. This is because in a non-federal political system, other sub-units may need central government permission to adopt SEZ policies. SEZs do not lead automatically to a race to the bottom within any one jurisdiction. But this means that their policy effects depend almost entirely on the central government.

Paradoxically, then, SEZs may be most effective in an environment in which a strong central government is seeking to gather information about the policy effects of liberalization. The weaker the central government, the less likely it will be able to adopt the lessons of SEZs and apply them appropriate-

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[21] E. O'HARA and L. E. RIBSTEIN, The Law Market (New York 2006).

[22] D. VOGEL, Trading Up: Consumer and Environmental Regulation in a Global Economy (Cambridge 1995).

[23] W. CARY, Federalism and Corporate Law: Reflections Upon Delaware, Yale Law Journal 883 (1974) 663–705.

ly at the national level. But the stronger the central government, it is more probably the case that the ideal policy is country-wide liberalization.

This analysis suggests something about the conditions under which SEZs will be most desirable. Those would be situations in which complete national liberalization is not politically possible, but some elites are willing to experiment with liberalization. These elites can use the experiment with liberalization in the SEZ to overcome resistance, and perhaps demonstrate that the benefits exceed the costs in one particular geographic area. They can then use this demonstration to leverage broader liberalization.

Alternatively, if the country already has a relatively decentralized policy environment, SEZs will allow for some peer-to-peer adoption. This last point suggests that it is federal or already decentralized states may be precisely those in which SEZs work best. But they will be effective precisely because of the generally decentralized policy-making environment.

The political economy of liberalization is not always so benevolent, alas. In some conditions, there might be the possibility that the SEZ policy will create new opponents of further liberalizations. Firms and industries that excel in the SEZs may gain a comparative advantage over those in other parts of the country, and may become newly entrenched interests that fight against spreading liberal policies generally. This might be especially true if the SEZs are organized around particular sectors (as is the Osaka SEZ, which is to be focused on medical innovation.) The local policymakers who have spent political capital to set up the SEZs will also resist the dissipation of the special benefits they have received. There is thus a significant risk that SEZs will be locked in as islands of liberalization in a sea of over-regulation. It is not clear that this pattern is beneficial for the country as a whole.

VI. Conclusion

SEZs are a form of asymmetric federalism in which one sub-unit or zone gets special dispensation to avoid particular regulations. It is an attempt to exploit geographic variation, the "where" question of regulation, to answer questions about how, when and what to regulate. Unlike conventional federalism, it has no particular political advantages, and perhaps some bad features. For example, jurisdictions may engage in wasteful rent-seeking trying to convince the central government to designate themselves as SEZs. They might also become entrenched interests that oppose generalization of the liberal policies throughout the broader country.

However, under certain conditions, an SEZ can play an important role in providing useful policy information to the central government, allowing for more informed decision-making about economic regulation. This is because it allows feedback to see how policies will function. The optimal environment

is one in which a strong central government can effectively deploy the information that is gained to broader geographic areas. However, any such government strong enough to benefit from an SEZ may be better off simply liberalizing the economy more broadly. If that is politically impossible because elites are divided, an SEZ may be a good first step.

Protection of Freedom of Contract by Private Law after (Local) Deregulation

Carsten Herresthal

I. Introduction: Private Law as the Residual Legal Order

According to the majority opinion, deregulation is more than a mere reduction in the number of rules, especially of public law rules; it is an amendment of the regulatory scheme in a legal order or in a certain area of the law to enhance free trade and to foster freedom of contract in that area of the law.[1] Freedom of contract (party autonomy), competition among the market participants on a free market, and the existence of viable market structures are the fundamental elements of a free market economy. Thus, deregulation understood in this specified sense broadens the options for market participants, especially consumers and businesses, with regard to the possible co-contrac-

[1] Under German law, "economic freedom" is linked to the term "Wirtschaftsfreiheit", cf. U. DIFABIO, in: Maunz/Dürig, Grundgesetz-Kommentar (73th edn. München 2014), Art. 2 GG n. 82, whereby "Wirtschaftsfreiheit" is an essential element of a liberal legal order.

tors, the possible subject matter of the agreement, the price agreed upon, or the terms of a contractual agreement.

If regulation by public law rules is eliminated in a certain area of the law, private law steps in and closes the resulting gap in the legal system. The concept of private law is governed by freedom of contract and the self-determination of the parties, while public law is characterized by heteronomy and redistribution of wealth to foster common welfare.[2] Private law and freedom of contract thus govern those areas of the law formerly regulated by public law rules. It should be mentioned that private law is conceptually not limited to a certain area of society but is the foremost instrument of the legislature for shaping social reality in a free market economy. Moreover, the initial hypothesis in a free market economy points to private law and market structures as the preferred choice for legislation in certain area of the law.[3] Thus, private law is the default option for the legislature in a free market economy. The regulatory choice of public law rules instead of private law rules and market structures needs to be justified by the legislature. Therefore, the legal order in a market economy returns to the default rule by deregulation and by the amendment of the regulative scheme in the manner described above.

With regard to private law, it is possible to identify three main functions that private law rules have to fulfill in formerly regulated areas of the law after those measures of deregulation have taken effect. Undoubtedly, the main function of private law is the protection of freedom of contract (see below II.1.). Secondly, private law has an enabling function in areas of the law affected by the measures of deregulation, i.e. private law has the duty to provide for instruments and institutions that enable market participants to exercise their freedom of contract (see below II.2.). Finally, regulation by public law rules may be in part substituted by private law rules. Thus, regulation may be assigned to private law rules which can provide for some regulation that is necessary in certain areas of the law (see below II.3.).

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[2] The distinction between private law and public law is clearly a specific topic in the German legal system, cf. J. PAPIER, in: Maunz/Dürig (eds.), *supra* note 1, Art. 34 GG n. 126 et seqq.; D. EHLERS, in: Erichsen/Ehlers (eds.), Allgemeines Verwaltungsrecht (14th edn. Berlin 2010), § 3 n. 11 et seq.; R. STOBER, in: Wolff/Bachof/Stober/Kluth, Verwaltungsrecht I (12th edn. München 2007), § 22 n. 23 et seq.; BGH, 5.2.1970, BGHZ 53, 184 (186). Nevertheless, the underlying rationale – the distinction between rules on the one hand that qualify as special rights of the state or of those subjects which execute sovereignty in that specific function and rules, on the other hand, to which everyone may be subject – is not limited to the German legal order.

[3] Cf. C. HERRESTHAL, Die Folgen der Europäischen Integration für die Privatrechtsgesellschaft, Festschrift für C.-W. Canaris, vol. I (2007) 1107, 1112.

II. Main Functions of Private Law after Measures of Deregulation

1. Protection of freedom of contract by private law

Above all, after deregulation private law has to protect market participants' freedom of contract. Freedom of contract and the equality of market participants are the foundation of private law rules in a market economy. The evolutionary potential of the law strongly depends on the principle of freedom of contract. With freedom of contract in private law the parties may react to changes in the economic, social and political order by adapting their legal relationships. They may amend their legal relationships, reacting to a change of the (legal) order or of their preferences; likewise they may enter into new legal relationships. Freedom of contract provides for the necessary flexibility with regard to the content and the adaptation of legal relationships.

Moreover, the principle of freedom of contract in the legal order and the authority of the objectives pursued by the market participants require the recognition of freedom of contract by private law as far as possible. Thus, in a market economy private law has to acknowledge the freedom and equality of the market participants and to leave the choice of objectives, and the means to reach those objectives, to the market participants. Therefore, private law rules in a market economy, especially in formerly regulated areas of the law, should focus on the regulative framework for the use of freedom of contract by the market participants.[4] Characteristic elements of this regulative framework are exchange agreements, private property, the freedom to make a will and the system of market prices that coordinates the parties' objectives.[5] Accordingly, the parties to a contract have the opportunity and the right to pursue their personal preferences and aims when entering into the contract and shaping its contents. In principle, there should be no state interference with private preferences; there should be no constraint by the state to pursue officially determined preferences.

a) Protection of free market decisions of the market participants

Following from this, private law has – above all – to protect and enhance freedom of contract (party autonomy) in formerly regulated areas of the law. The

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[4] For consequences of the market economy for the different areas of private law, see also J. BASEDOW, Von der deutschen zur europäischen Wirtschaftsverfassung (Tübingen 1992) 13 et seq.; C.-W. CANARIS, Verfassungs- und europarechtliche Aspekte der Vertragsfreiheit in der Privatrechtsgesellschaft, Festschrift für P. Lerche (München 1999) 873, 877.

[5] Cf. F. BÖHM, Privatrechtsgesellschaft und Marktwirtschaft, ORDO – Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft 17 (1966) 75, 82, 88 et seqq., 99.

main function of freedom of contract is to enable the parties to shape their legal affairs independently.[6] Thus, the rules of private law have to enable free market decisions of the market participants, i.e. of both possible parties to a contract, the party formerly addressed by regulatory restrictions and the opposite market side. Market participants on both sides of a market transaction need the freedom to decide on entry into or exit from a certain market, i.e. contracting on a certain market and with regard to a certain product, the pricing of the good or service offered, the quality and the promotion of the offered goods or services.[7] In this regard, private law rules have to enable and protect those free market decisions.

Moreover, a recent approach emphasizes that freedom of contract needs to be freedom in fact and not only in theory. The distinction between freedom of contract in theory and freedom of contract in fact focuses on the specific situation e.g. on the formation of the contract in a specific, nevertheless type-casted situation and the possibility of the private law subject pursuing its own objectives in fact.[8] To give an example, even though the consumer is formally free to refuse to contract in cases of doorstep selling, due to the situation many consumers may enter into a contract to bring an end to the unpleasant situation.

In deregulated areas of the law freedom of contract is endangered by the state, and by participants on both sides of the markets, i.e. by competitors as well as consumers. Thus, private law has to provide for safeguards relating to those different risks to freedom of contract. Protection of freedom of contract by private law rules points in two directions: on the one hand, protection against restrictions by the state and, on the other, rules that protect against restrictions by other market participants.

(1) Protection against restrictions by the state

Regarding the protection against new or persistent limitations by the state, the parties' freedom of contract needs to cover – besides others – the freedom to enter into the contract in particular, a free decision for the parties to the contract and about the contract terms. Thus, mandatory private law rules dealing with those aspects restrict freedom of contract. While private law rules that

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[6] See A. BRUNS, Die Vertragsfreiheit und ihre Grenzen in Europa und den USA, Juristenzeitung 2007, 385, 390.

[7] Cf. regarding the free choice of the aim pursued and the measures used, both within certain limits, F. BÖHM, *supra* note 5, 89 et seq.; F. A. VON HAYEK, Recht, Gesetzgebung und Freiheit, vol. II (Landsberg 1981) 150 et seqq.

[8] See C.-W. CANARIS, Wandlungen des Schuldvertragsrechts – Tendenzen zu seiner Materialisierung, AcP 200 (2000) 273, 292 et seqq.; J. DREXL, Wirtschaftliche Selbstbestimmung des Verbrauchers (Tübingen 1998) 38.

oblige the parties to contract are an exception in a free market economy,[9] restrictions to the possible content of the contract (i.e. the terms of the contract) are often found. This is also true of free market economies. Those restrictions to the content of the contract follow on the one hand from the general limits of contractual agreements in private law and, on the other, from specific private law rules addressing the subject matter of the contract at hand.

The general limits of contractual agreements and of freedom of contract in private law need to be applied in those formerly regulated areas of the law in which private law steps in and governs after deregulation. First, the courts have to identify those agreements which are contrary to public policy. Second, they have to define the general limits of contractual agreements set by other statutory provisions, e.g. by criminal law, antitrust law or competition law. Finally, the courts have to identify the limits to freedom of contract in the "new" area of the law set by private law rules on standard terms. Under German law, for example, the courts have to identify the "nature of the contract" (§ 307 para. 2 no. 2 BGB) to determine the extent of the deviation of the standard terms in the contract at hand from this nature and whether it is unreasonable. Regarding, as an example, those areas of German law which were formerly strictly regulated (and sometimes characterized by a monopoly of a state run entity) like the insurance sector, post and telecommunication, employment services, power supply and air transportation, the courts had to identify the limits, set by public policy, to the then possible contractual agreements (§ 138 para. 1 BGB), such as the duration of the contract agreed upon or a waiver of the notice of termination by the consumer.[10] Moreover, the judiciary had to identify the limits of the statutory deregulation in the above-mentioned areas and to identify those cases in which there is a violation of those laws by exceeding the limits of deregulation, which renders the contract invalid (§ 134 BGB).[11] With regard to standard terms, the courts had to identify the "nature of the contract" and the model contract of the then possible contracts in the deregulated areas of the law. This was necessary to have a reference point for the evaluation of the standard contract clauses of a specific contract.[12]

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[9] Cf. with regard to the very limited cases J. BUSCHE, in: Münchener Kommentar zum BGB (6th edn. München 2012) Vor § 145 BGB paras. 14–22; *id.*, Privatautonomie und Kontrahierungszwang (Tübingen 1999).

[10] Cf. BGH, 28.1.1987, BGHZ 100, 1 (waiver of notice of termination in contract for power supply); BGH, 30.10.1975, NJW 1976, 710, 711 (specific structure of contracts of power supply).

[11] Cf. regarding employment service contracts BGH, 17.2.2000, NJW 2000, 1557; BGH 25.6.2002, NJW 2002, 3317.

[12] Cf. BGH, 31.7.2013, NJW 2013, 3647 (contract for power supply); BGH, 12.2.2009, NJW 2009, 1334 (contract for telecommunication services); BGH, 8.5.2013, NJW 2013, 2739 (insurance contract).

Finally, the remaining mandatory private law rules need to be essential and not unreasonable with regard to the interference with freedom of contract. This is true of mandatory private law rules dealing with the binding content of the contract. Especially in formerly regulated areas, the legislature often relies on mandatory rules defining necessary elements of the contractual agreement. A binding character of those rules is a far-reaching limitation of freedom of contract. Thus, the need to pass a strict test applies. In general, those private law rules should be non-mandatory and underlined with a balancing of the parties' interests (as considered by the state), without limiting the parties' freedom to decide to deviate from those rules.

(2) Protection against restrictions by other market participants

The second aspect, the protection against restrictions by other market participants, is more complex. The question at hand is whether it is possible to identify a certain factor that is common to those cases in which the freedom one party to the contract is restricted by other market participants in a way not covered by the rules of competition law, but exceeds the "normal" effects of market behavior on competitors and/or the opposite market side. Those "unusual" effects (i.e. constraints on the freedom of contract by other market participants) are difficult to distinguish from "normal" effects since a free market economy covers attitudes of market participants that interfere with the free market behavior of other market participants. To name only one of those legitimate kinds of behavior, one may draw on a squeeze out of competitors out of the market or, indeed, a strong market position. Thus, if a market participant is cut out of the market by a successful competitor, or if a party to a contract succeeds in shaping the contract in line with his own interests due to his strong market position and the attractiveness of the goods offered by him, freedom of contract of the other market participants, the competitor and the other party, is surely affected since both may not enter into a contract shaped completely in accordance with their interests. Nevertheless, this interference with the freedom of contract of the other party or of other market participants is inevitable in a free market economy. Therefore, neither competition law nor private law need to provide remedies in these situations.

Some recent efforts try to use the notion of "market power" *(Marktmacht)* or "private power" *(Private Macht)* to describe the relevant aspect that separates the legitimate influence on other market participants approved by the idea of a free market economy and competition in the market from those kinds of influence that qualify as undue influences on other market participants in a free market economy.[13] Nevertheless, the notions of "market power" or "pri-

[13] Cf. the contributions to F. MÖSLEIN (ed.), Private Macht (Tübingen 2015).

vate power" are too vague to provide a workable concept.[14] Moreover, the cases addressed by those concepts are located between cases covered as unfair competition by competition law and cases approved by the market concept since market strength is part of the concept of a free market economy. Despite several recent attempts to define a private law concept of "market power", which may result in undue influence on other market participants there is still no such concept with any plausible content. The specific kind of "market power" or "private power" that would have to be addressed by private law rules to protect the freedom of contract of market participants is therefore still undefined. Furthermore, it is doubtful whether a feasible concept of "private power" in private law will be acknowledged. As a result, private law rules cover only some situations in which there is an obvious danger that one party to the contract may prevail with its interests in the contractual agreement because of the specific market situation. Those situations include agreements on contractual penalties,[15] standard terms,[16] and the amendment or termination of long-term contracts.[17] Moreover, some specific situations are protected by the rules on the violation of *boni mores* (§ 138 BGB). In addition, those situations include adhesion contracts that bar one party to the contract from his freedom to choose and his independence.[18] Also covered by § 138 para. 1 BGB are cases of transfer of property by way of security with an overcollateralization of the creditor.[19] The same is true of post-contractual non-competition clauses.[20] Additionally, some general rules protect freedom of contract (see below for further details).

b) Protection of the free market

The regulatory framework of freedom of contract includes the protection of the free market. The possibility to pursue one's own preferences is the fundamental prerequisite for the functioning of a liberal market economy. Freedom of contract and the establishment of a market economy are closely related.[21] Markets and trade on markets are nothing other than elementary emana-

[14] See for contract law C. HERRESTHAL, Private Macht im Vertragsrecht, in: Möslein (ed.), *supra* note 13, 145 et seqq.

[15] See §§ 339 et seqq. BGB.

[16] See §§ 305–310 BGB.

[17] See § 314 BGB.

[18] BGH, 7.1.1993, NJW 1993, 1587, 1588; BGH, 31.3.1982, BGHZ 83, 313, 315.

[19] BGH, 12.3.1998, NJW 1998, 2047; BGH, 28.4.1994, NJW 1994, 1796, 1798.

[20] BGH, 14.7.1997, NJW 1997, 3089.

[21] See CANARIS, *supra* note 8, 273, 292 et seqq.; E.-J. MESTMÄCKER, Über die normative Kraft privatrechtlicher Verträge, Juristenzeitung 1964, 441, 443; W. ZÖLLNER, Die politische Rolle des Privatrechts, Juristische Schulung 1988, 329, 330; E. HOPPMANN, Moral und Marktsystem, ORDO – Jahrbuch für die Ordnung von Wirtschaft und Gesell-

tions of civil society and of freedom of contract. Since only free and fair competition on the market provides for freedom of contract and the general framework for the pursuit of market participants' own objectives, the state has to ensure the free market, i.e. creating and preserving market conditions. Thus, the question arises as to whether protection of the free market as such is also a function of private law. In this case, private law rules would have to address situations of market failure and provide for instruments and remedies to compensate the results of unequal market positions. The answer to this question in private law is not clear-cut.

(1) Market power

A market failure may be the result of the "market power" or "private power" of one market participant. As mentioned above, private law does not provide a concept of "market power" or "private power" to address situations of possible undue influence on other market participants. The concept of "market power" or "private power" is too vague to apply in private law rules; substantial legal uncertainty would be the result of those private law rules. Moreover, since there is no precise definition of "market power", restrictions on market behavior based upon this concept may restrain free market behavior and violate fundamental rights of the market participants.

(2) Asymmetric information

Nevertheless, market failure may arise from *asymmetric information of the market participants*.[22] This kind of market failure might be addressed by public law regulation and private law rules, such as duties to inform the other party. Public law regulation may impose information duties on market participants with regard to certain contracts (e.g., insurance contracts and investment contracts). Nevertheless, the problem of asymmetric information, and the resulting market failure, is best mastered by private law rules. Those rules are more precise than public law rules; and compliance with those rules is enforced by other market participants, either from the same market side through competition law (with the claim of an undue advantage accruing to the other market participant through violation of the law) or by the opposite market side (claims for damages resulting from the breach of the duty to inform). Moreover, private law may provide a very flexible instrument through a general clause with a duty to inform the other party about relevant

schaft 41 (1990) 3, 5; D. REUTER, Freiheitsethik und Privatrecht, in: Bydlinski/Mayer-Maly (eds.), Die ethischen Grundlagen des Privatrechts (Wien 1994) 111.

[22] H. FLEISCHER, Informationsasymmetrie im Vertragsrecht (Tübingen 2001) 573 et seqq.; C. BUSCH, Informationspflichten im Wettbewerbs- und Vertragsrecht (Tübingen 2008) 120, 149 et seqq.

aspects endangering the purpose of the contract. This pertains also in areas of the law after measures of deregulation.

Nevertheless, there are two caveats with regard to information duties. First, private law in a market economy has to acknowledge that, primarily, every market participant has the duty to provide himself with the necessary information needed with regard to the decision of entering into a specific contract. Moreover, each market participant is responsible for his knowledge of the general market conditions necessary to evaluate the chances and risks of the contract at hand, since everybody has access to the same sources of information.[23] Therefore, the information duties of one party to a contract are only appropriate in situations with specific and additional circumstances that are known only to that party, and that party knows or has to know that the decision of the other party to enter into the contract would be affected by the knowledge of those circumstances (e.g. because these circumstances endanger the purpose of the contract for the other party). Under German law, the information duty is further restricted by the requirement that the information duty has to be reasonable.[24] Secondly, duties to inform are considered to be only minor limitations to freedom of contract for the obligated party, and consumer protection and protection of private investors are *en vogue* (e.g. in European law). As a result, in private law the problem of information overload arises. The amount of information given to the other party frustrates the objective of reaching an informed decision, since the other party is not able to consider all information.

(3) Monopolies

Another market failure is a *monopoly*. It is undisputed in private law that there should be the duty to enter into a contract if a market participant holds a monopoly. Moreover, market participants that offer goods which the other party is in desperate need of are also obliged to enter into a contract if required by the other party. Under German law, there is general consent about those private law remedies. Cases in which the latter applies are hard to find since the combination of an desperate need for specific goods on the part of one party and the lack of possibilities of contracting with other market participants offering goods of the same kind rarely occurs in modern economic structures.

c) Protection of competition

The regulatory framework of freedom of contract in private law may also include the protection of competition. In this case, private law rules cover anticompetitive practices and intend to preserve effective competition on a certain

[23] BGH, 15.4.1997, NJW 1997, 3230; BGH, 24.3.2010, WM 2010, 1283.

[24] BGH, 13.6.2007, NJW 2007, 3057, 3059; BGH, 10.10.2008, NJW 2008, 3699.

market. In the German civil code there are some scattered private law rules that address anti-competitive practices (e.g. § 241a BGB). However, those rules are in principle dislocated in private law as private law rules primarily focus on compensatory justice. Private law rules balance the parties' interests; they may protect freedom of contract and adjust market failures because of the risk that the balancing of interests by the parties themselves may fail as a result of a market failure and an unequal bargaining position. Besides these aspects, private law is in principle unsuitable for both the protection of competition as such and for rules on anti-competitive practices. Indeed there may be specific private law rules that address the parties' interests but which are especially relevant for competition law, since those private law rules are a link for competition law. As a result, those rules are often indirectly interpreted as a (mere) prerequisite of a judgement on a violation of the rules of competition law while they do not play a particular role in private law. This is especially true of the German private law rules on long distance sales, such as information duties or rights of withdrawal and the information about those rights. Those rules are rarely the subject matter of disputes between businesses and consumers, but German competition law is bound to those rules with the claim of an undue advantage of the other market participant by a violation of the law, as the violation of private law rules suffices for this claim. While the German private law rules on long distance sales focus on the balancing of interests of the parties and are seldom drawn upon by the parties to such a contract, they are heavily discussed in claims under German competition law. Therefore, the legislature has to take into account the fact that violation of private law rules may give rise to claims under competition law.

2. Enabling function of private law

The second main function of private law in formerly regulated areas of the law is to provide for instruments and institutions for the *exercise* of freedom of contract by the market participants. The state has to ensure the means to enable the parties to pursue their preferences; the parties to the contract need more than a mere formal grant of this right. They also need the practical possibility of following up on their interests. Private law rules therefore have to facilitate the realization of freedom of contract of the market participants.[25] Those rules have to ensure the possibility of self-determination of the market participants as far as possible. Thus, private law has to provide for the means to realize the objectives and preferences by the market participants in a legally binding

[25] See E. PICKER, Antidiskriminierungsprogramme im freiheitlichen Privatrecht, in: E. Lorenz (ed.), Karlsruher Forum 2004: Haftung wegen Diskriminierung im gegenwärtigen und zukünftigen Recht (Karlsruhe 2005) 45 et seqq.; U. DI FABIO, Form und Freiheit, DNotZ 2006, 342, 347 et seqq.

manner. Without this, freedom of contract would exist as a mere formal right without sufficient means to exercise this right in an effective way.

Even though freedom of contract and private property are the main instruments for fostering the self-determination of the market participants, there is a real need for certain private law rules to supply the necessary framework for private legal transactions. Above all, there is the need, to enhance legal transactions, for a more or less comprehensive contract law embracing the main aspects of contractual relationships. Moreover, private law has to provide means for enforcing contractual rights. The same is true with regard to property law[26] and the various property rights. This function does not contradict the protection of freedom of contract by private law since the rules enabling the parties' legal transactions may not be mandatory rules but rules which may be varied by agreements between the parties. The result of the self-determined organization of the market participants' legal affairs – contracts and their agreed-upon content – is respected and enforced by the state.

This function of private law is shown by gaps or loopholes which underline the optional character of the private law codification. In German law the transfer of property by way of security is not covered by the German civil code. Nevertheless, there was a strong need for the legal use of the property as security without possession of the secured party. Thus, the transfer of property by way of security is judge-made law, enabling the parties with further possible courses of action and broadening freedom of contract.[27]

After measures of deregulation, this function of private law is of substantial importance, too. Since deregulation broadens the scope of freedom of contract and private law, rules fill the gaps left over after the revocation of the former public law regulation, and private law rules have to provide for the means that ensure that the newly gained freedom of contract may be used by the market participants according to their private preferences and objectives. Any shortcoming of this function by the private law rules will limit both the effect of deregulation in the specific area of the law and the positive effects linked to a free market.

3. Partial substitution of public law regulations with private law rules

The third function of private law is a partial substitution of public law regulations with private law rules in case of a deregulation.

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[26] Cf. for the meaning of private property, see J. BASEDOW/W. BULST, Der Eigentumsschutz nach der EMRK als Teil der europäischen Wirtschaftsverfassung, Festschrift für R. Schmidt (München 2006) 3, 5.

[27] For details see J. OECHSLER, in: Münchener Kommentar zum BGB (6th edn. München 2013) Anhang zu §§ 929–936 Sicherungseigentum – Sicherungsübereignung, paras. 1 et seqq.

a) Objectives of private law regulation

Deregulation as defined at the beginning covers also the (partial) substitution of public law regulation with private law regulation. As a result of this change of the regulatory scheme the former regulated area of the law is no longer governed by public law but by private law and private law instruments that also provide regulatory means. Public law regulation may be partially substituted by private law regulation. As mentioned above private law may, for example, address market failure and replace public law rules.

Regarding the possible objectives of regulation by private law rules, there are some that are in accordance with the overriding objectives of private law. The objectives of private law regulation include the protection of third party interests, the protection of the parties against self-inflicted damages, the limitation of rights of disposition for the benefit of the legal transaction, the reduction of transaction costs and the protection of preeminent interests of society. These objectives are in part also protected by private law rules since the overriding objective of private law, the adequate balancing of the parties' interests, includes, for example, consumer protection or health protection. Thus, with regard to those objectives, private law may assume the regulatory function of public law. Areas of private law suited to this function are, in particular, contract law, property law and labor law.

With regard to the areas covered by private law regulation, it is worth mentioning that private law regulation may qualify as a more general regulation or as a quite special regulation. Special regulation concerns those situations where private law rules cover only certain areas of the law (consumer protection), certain markets (sale to consumers) or certain market participants (employees). General regulation by private law rules concerns those rules that are located in the general part of the civil code and thus apply to a larger number of cases. This is especially true of the protection against self-inflicted damages and the protection of third party interests.

b) The case of private law compensation of market failure

As mentioned above, some kinds of market failure may also be addressed by private law rules. With regard to natural monopolies like railway networks or power supply networks, private law rules may foster the efficiency of their use and protect possible contractors from arbitrary decisions of monopolies. Contract law may provide remedies to compensate the resulting market failure in cases of monopolies. Those remedies may cover the obligation of the monopoly to enter into a contract, information duties of the monopoly and a judicial oversight of the contract terms agreed upon by the monopoly and other market participants.

If a market failure results from asymmetrical information of the market participants (such as between business and consumer), because of the famili-

arity with business contracts or the high information cost for the consumer, private law may also address these kind of market failures. Private law remedies in cases of asymmetrical information of the market participants are duties to inform the other party, the prohibition of misinformation, mandatory contract terms, minimum requirements for the quality of the goods (warranty for defects) and rules on product liability.

Finally, private law rules may cover market failures that result from the opportunistic behavior of one party. A paradigm of this kind of market failure is an imperfect long-term contract (for labor, corporation, insurance or leases). Since long-term contracts usually do not provide terms that cover all possible developments in the future, a change of circumstances may favor one party to the contract. Thus, private law rules may provide remedies like a compensation of asymmetrical information, the individual or collective duty to bargain in case of a change of circumstances,[28] or the assignment of costs.

Even though private law rules address those issues of market failure, and even though court decisions refer to market failures in their reasoning,[29] there is still – at least in German private law – no general concept of market failures in the theory of private law. Nevertheless, what is important in the given context is that private law rules may replace public law regulation with regard to these kinds of market failures. Moreover, regulation by private law in those situations is likely to be more precise and may result in a more coherent legal structure for the specific kind of contractual relationship.

III. Private Law Instruments

There are several instruments of private law that replace public law regulation and ensure the free decisions of the market participants. They are characterized by a gradually increasing limitation of the freedom of contract of the other party. Those instruments cover pre-contractual and contractual duties to inform the other party, standardized sets of information such as information sheets (consumer credit, mortgages), the general duty to inform the other party of important aspects endangering the objective of the contract, written or notarized forms of the contract, the prohibition of specific contract clauses or causes of invalidity of the contract. Moreover, there may be specific rights for the protected party to avoid the binding contract (right of withdrawal).

Private law rules may also provide mandatory contract law rules to protect one party to the contract (e.g. the consumer). Those rules may cover general contract law regarding a specific type of contract; they may also be limited to certain aspects of the contractual agreement or certain parties to the contract.

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[28] See § 313 BGB.

[29] E.g. BGH, 30.11.2004, LMK 2005, 37.

The judicial oversight of standard contract terms qualifies also as a private law instrument. Another private law instrument is non-binding rules subject to an amendment by the parties. In this case, the balancing of the parties' interests by the private law rules applies unless the parties' agreement deviates from them. A further instrument is the reversal of evidence. Finally, private law may resort to instruments of collective bargaining like collective labor agreements or publication agreements between author and publisher.

The identification of relevant situations in which regulatory measures by private law are necessary for the protection of freedom of contract may rely on personal and/or objective aspects. Thus, private law instruments may apply in consumer contracts, contracts with private investors or in contracts between small and medium sized enterprises and large enterprises. An objective identification of relevant situations may depend on the type of contract or the channel of distribution, i.e. long distance sales, doorstep sales, or contracts by E-commerce. The common background of those rules is the intention of the legislature to stereotype the relevant situations in which private law regulation is necessary for the protection of freedom of contract. A mere general clause that allows for judicial oversight of the contractual agreement on the basis of good faith would result in legal uncertainty.

IV. The Enforcement of Private Law Rules

Private law rules in areas of law after deregulation, which protect freedom of contract or replace public law regulations, need to be enforced. There are different options for the legislature to ensure the enforcement of those rules. In general, the most efficient way is a suit by the other party *(Individualklage)*. In this case, observation of the private law rules is enforced in a decentralized manner and asserted by other market participants whose interests are at stake. Another possibility is class actions, as they are known in the US legal system. Those actions are characterized by a representative who sues for violation of a private law rule. If a judgment is obtained the members of the class are bound by it. Somehow between those two options located is a suit by specific organizations, e.g. for consumer protection. A more recent approach is the institution of the ombudsman whose decision is binding for one party at least, usually the business. The rules applied by them may be the rules of private law. Additionally they may rely on a general fairness standard. Finally, state agencies may oversee the market behavior of market participants with the possibility of imposing fines in cases of violations.

V. Special Private Law as an Adequate Means for Special Economic Zones?

Areas of private law in which the law may be altered in special economic zones (and classified as special private law as a result) may include the law of service contracts, sales law, labor law and those parts of general contract law that cover the rights of the parties in case of a breach of duty, as well as the statute of limitations.

1. Private law and national objectives

However, the main objectives of private law (i.e. the fair balancing of the interests of the parties to a contract, the advancement of comparative justice and the principle of equality of all market participants) points to *nationwide* rules of private law in the areas of private law mentioned above. The balancing of the parties' interests (e.g. the interests of seller and buyer regarding the buyer's rights in the event of a defective product, or the interests of employer and employee regarding the period of notice or undue termination by the employer) are as a matter of principle general questions of private law. Hence, they are an issue for nationwide private law rules created by the legislature.

This assessment is supported by the principle of equality and the advancement of comparative justice by private law rules. The equality of the market participants is one of the foundations of private law rules in a market economy; it is closely related to the equality of private law subjects. From this follows the duty of the legislature to treat all market participants alike. Regarding this principle, some contradictions arise in respect of special private law rules for special economic zones. Market participants in those zones are treated differently by private law rules compared with those participants outside the zone. Whether those participants in a special economic zone have a stronger legal position and more rights (e.g. employers in the zone may terminate a labor contract more easily than those outside the zone, or those participants have a weaker position in that the statute of limitations is shorter in sales contracts entered into in these zones, in both cases to accelerate the turnover of goods) the principle of equality is impaired.

Admittedly, one may argue that the different treatment of market participants inside and outside the special economic zone by the legislature does not amount to unequal treatment. The reason is that different treatment of the participants violates the principle of equality only if there are no sufficient reasons for it. Clearly, the legislature has to arrange the rules of the market (i.e. the market conditions) in a free market economy and is bound by national objectives such as economic growth, economic stability and social justice. Furthermore, there is a certain margin of appreciation given to the legislature, i.e. the legislature (and not primarily the judiciary) may – within certain limits

– decide how to reach those national objectives.[30] As a result, the principle of equality of the market participants has to be weighed in the balance against the national objectives pursued by the legislature. This may justify the arrangement of special economic zones, and the different private law rules in those zones, without violating the principle of equality. At least for a certain period, the unequal treatment of market participants in special economic zones may thus be justified. Nevertheless, the unequal treatment of market participants is a substantial deviation from the concept of a free market economy and therefore needs precise justification by the legislature, and has to be limited in time.

The same is true regarding the balancing of the parties' interests. Private law intends a just balancing of the interests of the parties to a contract. At least at first sight this principle is violated by a different balancing of interests if the contract (e.g. sales contract or labor contract) was entered into by the parties in a special economic zone. As a matter of principle, a fair balancing of the parties' interests depends on the legal system and the remaining private law rules in the legal system. A mere regional aspect (such as contracting in a special economic zone) does not contribute to the just adjustment; there should be only one balancing of interests by one legislature.

Nevertheless, also with regard to the balancing of parties' interests there may be an argument that the balancing exercise depends on the remaining private law and public law rules that apply to the contract at hand. Special public law rules for the special economic zone may therefore allow the legislature to reach a different balancing of the parties' interests. Moreover, the national objectives pursued by the legislature may also justify a different balancing of interests, as private law is part of the national legal system. In cases of supreme constitutional law providing the national objectives,[31] private law has to be consistent with those objectives and thus may be shaped in accordance to them. Following from this, there may be an argument that the balancing of the parties' interests is not detached from those national objectives, but is influenced by them because of supremacy of constitutional law. Thus, the weaker position of the buyer or employee, due to a specific balancing of parties' interest by private law rules that apply in special economic zones, may be the result of a balancing of private law aspects with national objectives e.g. economic growth and economic stability, and their specific promotion in special economic zones. The remaining doubts with regard to a different balancing of interests within national private law depending on the location of contracting are an issue of equality that was dealt with before.

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[30] See, for this notion in German law („Einschätzungsprärogative"), K. SOMMERMANN, Staatsziele und Staatszielbestimmungen (Tübingen 1997) 428 et seq.

[31] Cf. in German law the national objectives of Art. 109 Grundgesetz (i.e. the German constitution).

2. Experimental aspects within private law

The discussion about the legitimacy of special private law in special economic zones raises more issues of private law theory. First, special economic zones bring up a question about the implementation of experimental aspects in private law, e.g. the limitation of new private law rules to certain regions or groups. The continental legal system and its private law rely primarily on statutes, i.e. an overriding decision of the legislature that is implemented into the legal order by statute and (merely) applied, sometimes by the judiciary. According to the principle of one legislature, one (nationwide) rule, continental private law is not used to the idea that private law rules may be also used by the legislature in an experimental way, as is the case with experimental private law rules in special economic zones (different private law rules for specific regions of the nation). In general, the judiciary, in applying the private law rules, is following in principle the intention of the legislature. Nevertheless, even a private law system in the continental style does have certain rules that are used by the judiciary to react to new social or economic situations, which are different from the time of the enactment of the statute. Those rules provide some flexibility to the private law system, e.g. general clauses in the German civil code (§ 242, § 313, § 241 BGB). Despite all, national private law in a continental legal system is characterized by a reactive structure, i.e. the function is to look after a legal solution after a certain conflict of parties' interests is identified.

Private law in common law legal systems is much more experimental because of the lack of binding words in statutes. The judiciary in common law jurisdictions may use private law rules not only to formulate adequate solutions to conflicts between parties but also to try to find different solutions to this conflict. This is especially true of the common law in the US where 50 different sets of private law rules (e.g. of contract law) are applied in the different states. As a result, different legal solutions to the question at hand are applied by the courts under common law following a debate in the literature about the best solution, while in continental private law those different solutions and their applicability under the private law statute are merely discussed by the literature. Thus, the private law of the common law also has at least some experimental aspects, understood as applying the law in a certain way to reach a specific aim.

Regarding private law in special economic zones, it deviates from private law in the rest of the nation to support a specific aim of the legislature, especially to produce economic growth. This special private law is characterized by being a part of the economic experiment of a special economic zone. Private law is used by the legislature to support a specific aim, e.g economic growth, without knowing whether this aim will be achieved and whether the special private law rules contribute substantially to this aim. As a result, spe-

cial economic zones qualify also as an experimental area with regard to private law rules, as private law rules are amended because of the expectation that these amendments will foster specific aims, e.g. economic growth in certain markets.

This experimental character risks a loss of confidence of market participants in private law rules as the alleged just balancing of the market participants' interests is modified by the legislature to foster those – from a perspective of private law – external objectives. Those rules are therefore no longer tied to – at least in theory – absolute justice but to a relative justice depending on the location in which the private law rules are applied. The notion of a trial and error procedure with regard to private law rules is contrary of the idea of a fair solution to the parties' dispute. As a result, justice in private law and equitable solutions by private law rules may seem ambiguous and a loss of reliance on private law rules may follow.

Moreover, the contribution of special private law rules to the success of the idea of special economic zones (that is, to the substantial enhancement of economic growth) is difficult to assess. In theory, there may be an argument that more flexible rules of private law contribute to a dynamic economic zone and thus support its development; businesses would receive an incentive to intensify their economic activities within the zone. On the other hand, the reduction of rights of employees, buyers and customers may result in less demand from those groups in the market because of their weaker legal position in private law.

Finally, a possible spillover effect may extend to the rest of the private law within the legal system. The measures of deregulation and a market-oriented private law may stimulate the rest of the legal system if the experiment of a special economic zone succeeds. If there are no hardships to the market participants as a result of the deregulation and, if the more market-oriented character of private law contributes to economic growth, the deregulation may be extended to the whole legal system. This argument favoring special private law rules within special economic zones is even stronger if the main objective of the special economic zone is to stimulate economic growth. If the special economic zone shows substantial efforts with regard to economic growth without hardship for the market participants there is no reason to limit those measures of experimental deregulation (also of private law) to this zone.

3. Utilization of private law

Additionally, the question arises, whether private law may be used, i.e. instrumentalized, by the legislature to achieve specific national objectives other than those mentioned before, such as the redistribution of wealth, consumer protection and non-discrimination. The answer is related to the fact that national private law is embedded in the legal order of the state and thus part of the possible means used by the legislature to pursue its objectives. Under

German law, the legislature uses private law rules to foster consumer protection, protection against discrimination, social justice, the implementation of its actual concept of marriage *et al*. However, the conformity of the private law rules with the concept of a free market economy is the underlying rationale in German private law and is often taken for granted by the legislature without due attention to the fact that a small but steady reduction of freedom of contract (and of the possibility of free market decisions) undermines this conformity and may change the fundamental structure of German national private law.[32]

Moreover, there is a strong opposition against the use of private law in Germany.[33] According to this view, private law is limited to the objectives of comparative justice and to the protection of the rights and interests of the parties against other private parties *(vid. supra).* Market regulation and issues of economic policy are the state's duty and thus in general subject to public law rules. According to this viewpoint, private law instruments are not apt for pursuing the objectives of market regulation.[34] Furthermore, the use of private law endangers the autonomy of private law, reduces freedom of contract and results in conflicts with the very objectives of private law, i.e. an adequate balancing of the parties' interests. The latter is especially true, if the balancing of interests by private law and the pursuit of comparative justice are considered in principle to be independent from political, economic or social objectives.[35] Nevertheless, at least EU law uses the private laws of the EU member states for (besides others) economic reasons. Under EU law, private law is a means for achieving certain objectives of European integration. This is especially true with regard to consumer protection. The present approach to private law by the EU legislature is to strengthen consumer protection so that consumers are confident with regard to their rights in respect of all national private laws. As a result, cross border demand by consumers has increased and resulted in the European Internal Market. A second aspect of private law that is used by the EU law is the objective of the elimination of discrimination.

In sum, there is a strong argument that the use of private law in special economic zones endangers the just balancing of the parties' interests and may result in conflicts with the very objectives of private law. Nevertheless, one has to take into account that special economic zones are by definition zones which are characterized by measures of deregulation. In those zones, the legal

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[32] Cf. HERRESTHAL, *supra* note 3, 1110.

[33] Cf. H. P. WESTERMANN, Drittinteressen und öffentliches Wohl als Elemente der Bewertung privater Rechtsverhältnisse, AcP 208 (2008) 141 et seqq.

[34] Cf. K. SCHMIDT, Wirtschaftsrecht, Nagelprobe des Zivilrechts, Das Kartellrecht als Beispiel, AcP 206 (2006) 169, 172

[35] See C.-W. CANARIS, Die Bedeutung der iustitia distributiva im deutschen Vertragsrecht (München 1997) 35 et seqq.; F. BYDLINSKI, „Privatrechtsgesellschaft" und Rechtssystem, in: Festschrift für P. Raisch (Köln 1995) 7, 12.

order is relieved of public law limitations and private law may fill in the resulting free space according to its function as a default legal scheme. The refusal to use private law for objectives outside the main objectives of private law has to be balanced against the benefits of deregulation in special economic zones and the increase in the number of cases in which private law is applicable. The main reason is that deregulation, even if limited to special economic zones, creates greater room for freedom of contract. Since the establishment of a market economy and freedom of contract are closely related,[36] markets, and the trade on those markets, are elementary emanations of freedom of contract, while mandatory regulation is a severe interference with the free market and with freedom of contract. If the amendment of private law rules in the special economic zone qualifies for a measure of deregulation (i.e. one more free-market oriented and governed by freedom of contract), possible risks (concerning the danger of the use of private law for the main objectives of private law and concerning the perception of private law by market participants) may be outweighed.

4. The law of conflict of laws

Finally, it has to be mentioned that in cases of special economic zones with special rules of private law (e.g. in labor law, sales law, rules on service contracts) questions of conflict of laws arise if parties located inside the zone contract with those outside the zone. An example is an employer who hires an employee whose domicile is outside the special economic zone. Or, a manufacturer located within the zone may buy products from another company outside the zone and sell his products to customers outside the zone. In those cases there is a need for rules on the conflict of laws. The peculiarity is that those questions of conflict of laws arise within the same legal order. The US legal system shows that this need not be a hindrance to an effective private law legal system. Nevertheless, the need for those rules of conflict of laws has to be taken into account from the beginning. Moreover, the rules on the conflict of laws in cases of special economic zones should be as easy to apply as possible, to limit potential hindrances to the cultivation of economic growth. In the interests of legal certainty, those rules should complement international rules of private law, if possible.

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[36] See CANARIS, *supra* note 8, 292 et seqq.; E.-J. MESTMÄCKER, Über die normative Kraft privatrechtlicher Verträge, Juristenzeitung 1964, 441, 443; W. ZÖLLNER, Die politische Rolle des Privatrechts, Juristische Schulung 1988, 329, 330; E. HOPPMANN, Moral und Marktsystem, ORDO – Jahrbuch für die Ordnung von Wirtschaft und Gesellschaft 41 (1990) 3, 5.

VI. Summary

Private law governs areas of the law formerly regulated by public law rules. Nevertheless, private law is more than a fill-in; it is the inevitable means for the enabling and protection of freedom of contract. Private law provides for the instruments for the use of freedom of contract and may provide for a more precise regulation than public law. There are also several options to enforce private law rules in formerly regulated areas. In any event, private law still lacks a concept of market failure. Nevertheless, there are main functions of private law after public law deregulation: the protection of freedom of contract, enabling party agreements, and a partial substitution of public law regulation. There are possible risks to the use of private law for the main objectives of private law; however, the benefits of the amendment of private law rules in the special economic zone may outweigh them. Thus, there are strong arguments to rely on private law after deregulation even for the necessary residual regulation.

Special Economic Zones, Deregulation and Competition Law

Wolfgang Wurmnest

I. Introduction

Economic downturn puts pressure on governments to act. In the economic crises of the early 1930s as well as after World War II, many industrial countries decided to regulate economic activity heavily. Governments viewed regulation and market foreclosure as legitimate tools to ensure so-called "fair prices and profits". Many of these restrictions remained unchanged over the next decades – even though it slowly came to be understood that overregulation has high costs and impedes the generation of efficiencies. Finally, in the late 1970s the pendulum swung towards market liberalization in many competition-oriented economies.[1]

Since then many industrialized countries have taken important steps to deregulate their economies, a process that often went hand-in-hand with a pri-

[1] The first industrial countries that implemented comprehensive deregulation programs were the United States of America (US) and Great Britain.

vatization of state-created monopolies.[2] The possibilities of creating dynamic economic effects through deregulation were however not fully seized, and often new forms of regulation were put into effect. It does, therefore, not come as a surprise that in the current economic crisis many argue for further deregulation measures to spur private economic activities. This approach follows the firm belief that open markets will yield better economic results for everyone.[3]

Deregulation can, of course, not mean that economic activity should be entirely free of state control and state rules. The legislature has to ensure a proper balance between the economic freedom of private actors and rules limiting this freedom for the benefit of the community at large. Thus "smart regulation" is the key to sustainable economic growth.

Against this background, a closer look shall be taken at two forms of liberalization: The Japanese concept of special economic zones (the "SEZs") and the deregulation of former monopolistic markets in Europe. The contribution aims to offer some thoughts on the role of competition law and policy (or in the terms of US law: antitrust law) in the context of deregulation. The paper will first highlight the basic concepts of deregulation and competition law (II.). As second step, the Japanese SEZs will be analyzed from a competition policy perspective (III.). As the deregulation measures to be adopted for these zones might be a starting signal for a deregulation at a national scale, the next part will turn to Europe to discuss the lessons Europe has learned from its efforts to deregulate markets dominated by (state-protected) monopolies (IV.). I want to show that without strong competition law, any attempt to open markets will be very burdensome and might even fail in a short and medium run; I think that this message might be of interest for Japanese lawmakers.

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[2] On the development in Germany and Japan see the contributions in Z. KITAGAWA/J. MURAKAMI/K. W. NÖRR/T. OPPERMANN/H. SHIONO (eds.), Regulierung – Deregulierung – Liberalisierung: Tendenzen der Rechtsentwicklung in Deutschland und Japan zur Jahrhundertwende (Tübingen 2001) and G. LENNARTZ, Regulierung der der japanischen und deutschen Telekommunikationsmärkte im Vergleich – Wettlauf im weltweiten Deregulierungsprozess, Zeitschrift für Japanisches Recht no. 2 (1996) 20–41.

[3] DEREGULIERUNGSKOMMISSION – UNABHÄNGIGE EXPERTENKOMMISSION ZUM ABBAU MARKTWIDRIGER REGULIERUNGEN, Marktöffnung und Wettbewerb (Stuttgart 1991) no. 1: "Deregulierung der Wirtschaft zielt auf mehr wirtschaftliche Freiheit, mehr Markt, mehr Wettbewerb, mehr Wohlstand. Der Wert dieser Ziele liegt in ihnen selbst und in besseren wirtschaftlichen Ergebnissen für die Handelnden, für andere, für alle".

II. Market Regulation and Competition Law

1. Constitutional and special regulation

Regulation theory, as understood in this paper, defines regulation as every rule that limits private activity.[4] So even contract law rules are a form of regulation. It goes without saying that the abolishment of such rules would not increase economic welfare as they ensure an orderly community life. Useful rules for the cohabitation of individuals concern, for example, the protection of life, health, freedom and property. General rules on contract, tort and property law as well as sound rules on administrative procedures are thus indispensable for a functioning society.[5] Such kind of regulation can be described as "constitutional regulation", as these rules lay down the general framework for economic activity.[6]

When we talk about the usefulness of deregulation, we are not talking about an alteration of these constitutional rules. Rather we are talking about rules that apply only to market activities of certain groups in society. These rules can be labeled "special" or "restrictive regulation".[7] They restrict private action to ensure certain policy goals set forth by the legislature, e.g. to safeguard a given division of labor or certain social standards. Special regulation in essence restricts the freedom of contract of certain groups, sometimes even at a very early phase as it may prohibit economic activities for certain persons entirely.[8] Often such rules restrict competition on a market, but there might be cases in which those rules complement or even supplement rules that aim to preserve free competition.[9]

2. Regulation needs justification

Special regulation is not *per se* alien to market economies. However, regulation needs justification. It can, for example, be justified if on a particular market competition is not possible or would lead to negative (external) effects.[10] Every legislature must therefore decide to which extent regulation is necessary for the protection of the society at large and the functioning of the

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[4] DEREGULIERUNGSKOMMISSION, *supra* note 3, no. 2: "Regulierung ist jede staatliche oder staatlich sanktionierte Beschränkung der Handlungsmöglichkeiten, der Verfügungsmöglichkeiten des Menschen."

[5] J. BASEDOW, Economic Regulation in Market Economies, in: *idem,* Mehr Freiheit wagen: Über Deregulierung und Wettbewerb (Tübingen 2002) 3–22 at 4.

[6] DEREGULIERUNGSKOMMISSION, *supra* note 3, no. 4.

[7] DEREGULIERUNGSKOMMISSION, *supra* note 3, no. 4.

[8] BASEDOW, *supra* note 5, 4.

[9] See ICN ANTITRUST ENFORCEMENT IN REGULATED SECTORS WORKING GROUP, Report to the Third ICN Annual Conference (Seoul, April 2004) Chapter 2, available at: <http://www.internationalcompetitionnetwork.org/uploads/library/doc379.pdf>.

market. There are three golden rules in assessing the necessity of regulation. They can be summarized as follows:

First, in a market economy, the general rule should be that individuals are free to pursue the goals they have set themselves. The law should therefore give as much freedom as possible to market actors. Competition is thus the rule and special regulation restricting it must be regarded as the exception, which can only be upheld if there is a sound justification for it.[11] Those who want to maintain rules that restrict competition have thus to prove that these rules are benevolent for the society at large, whereas those who advocate in favor of more deregulation can rely on the (rebuttable) presumption that open markets will yield benevolent economic effects.

Second, regulation must be shaped in a way that the restrictions of the competitive process flowing from its rules are limited as far as possible. So, if a rule restricts competition, one should look for ways to replace it with a rule that fulfils the regulatory goal in a similar way but with less negative impact on the competitive process.[12] It does, for example, not make sense to exempt certain industries, such as the insurance industry or the sport sector, in their entirety from the scope of competition law. Peculiarities of these industries can be fully respected by adapting the competition law prohibitions. Such an approach hampers competition to a much lesser extent than a complete exemption of certain branches from the reach of the competition rules.

Third, every government has the obligation to review the legal framework at regular intervals to check whether the justification for those rules still holds.[13] As market conditions are constantly changing, regulation that was justified years ago might have to be relaxed today, whereas in other markets the regulatory framework needs to be tightened. One can therefore applaud the Japanese government for launching an initiative to eliminate unjustified regulation. Often changes are necessitated by new products or services. In Germany, an example of the need to review the regulatory framework became visible with the advent of the ridesharing service Uber. Uber arranges (among other services) taxi-like transport agreements between drivers and riders via a smartphone application in exchange for a commission. This ridesharing concept enlarges the choices for consumers in need of transport. They can decide to call a traditional taxi to get from A to B or to book a ride with Uber. The mode of operation differs across the globe. In Tokyo, Uber offers a taxi ap-

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[10] N. ECONOMIDES, Competition policy in network industries: an introduction, in: D. Jansen (ed.), The New Economy and Beyond (2006) 96–121 at 97. For a more detailed overview of factors justifying regulation see DEREGULIERUNGSKOMMISSION, *supra* note 3, nos. 8–13.

[11] DEREGULIERUNGSKOMMISSION, *supra* note 3, no. 5.

[12] DEREGULIERUNGSKOMMISSION, *supra* note 3, no. 34.

[13] DEREGULIERUNGSKOMMISSION, *supra* note 3, no. 15.

plication, by which you can call a traditional cab via your smartphone.[14] In Germany, Uber started its operation in a different way. Via the App "Uber Pop", Uber arranged for rides from independent drivers who had no taxi licenses as they offered rides in their private cars. Booking a ride with Uber was cheaper than taking a taxi. Under German law, the Uber drivers provided commercial taxi services and had therefore to comport with the strict standards set forth for commercial passenger transport.[15] Thus, in most cities, the Uber drivers had to acquire a concession, which restricts market access. Moreover, every driver had to acquire a special driver's license by which a driver proves a solid knowledge of the city routes, and each car has to comport with certain safety standards. These and other regulatory requirements brought Uber's original "shared economy" concept to an end.[16] In my opinion, the German legislature is now under the obligation to adapt the legal framework to allow for more competition in the taxi sector. From a competition perspective, it makes sense to abolish the license requirement and review the system of fixed taxi prices in order to enhance competition for transport services.[17] Alternatively, the requirements for drivers that occasionally conduct passenger transport services on shorter routes should be relaxed. These measures will help consumers to book rides in cities at times when the demand for rides cannot be served by traditional taxis.

Putting these three principles into effect is hard work. Interest groups benefiting from closed or monopolistic markets fiercely oppose any changes in order to retain their benefits.[18] Their chorus can be summed up as follows: "Competition is really great – but it does not work in our market." Very often, however, this reasoning cannot be justified on economic grounds. Every debate on the necessity of deregulation must therefore thoroughly analyze whether a regulatory rule is really justified for the benefit of the society as a

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[14] <http://www.japantimes.co.jp/news/2014/11/02/business/corporate-business/app-based-car-hire-service-uber-making-waves-tokyo/>.

[15] In the city of Hamburg the authority for the transport industry (Verkehrsgewerbeaufsicht) ordered Uber to halt its services, see OVG Hamburg, BeckRS 2014, 5679 (confirming the enforceability of the prohibition order).

[16] Uber therefore rearranged its services. It offered in some cities rental car services which include drivers ("Uber X"). In addition "Uber POP" was downsized to arrange shared rides for which the customers pay the driver a fair share of the actual cost for the transport (consumed fuel, wear and tear on the car) as such arrangements are not seen as passenger transport for commercial purposes, see: <http://www.sueddeutsche.de/wirtschaft/taxi-konkurrent-uber-startet-neuen-mietwagen-dienst-1.2485350>. Later "Uber POP" completely retreated from the German market.

[17] On possible reforms to stimulate competition in the German taxi market see MONOPOLKOMMISSION, Eine Wettbewerbsordnung für die Finanzmärkte – Hauptgutachten XX (2014), paras. 218–265, available at: <http://www.monopolkommission.de>.

[18] DEREGULIERUNGSKOMMISSION, *supra* note 3, no. 21.

whole or whether it just fills the pockets of a certain interest group at the expense of consumer choice.

3. The role of competition law

A properly functioning market economy presupposes the existence of a competition law that is also vigorously enforced. History has shown that individuals may use their economic freedom to restrict competition by entering into anticompetitive agreements or by engaging in other anticompetitive practices. As result, large corporate concentrations could monopolize many markets in the United States at the end of the 19th century.[19] Germany was a "country of cartels" until the end of the Second World War,[20] and similar things are said about Japan.[21] Rules against restraints of competition by private market actors are part of the body of "constitutional regulation".

Today, all modern competition laws essentially prohibit (i) anticompetitive agreements, (ii) abuses by firms with some form of market power and (iii) mergers as far as they substantially lessen competition. Competition law ensures a level playing field for all market actors.[22] Usually competition rules are drafted as general clauses[23] as – in the words of Senator Sherman –

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[19] See H. B. THORELLI, The Federal Antitrust Policy: Origination of an American Tradition (1954) 61–96.

[20] See J. BASEDOW, Kartellrecht im Land der Kartelle: Zur Entstehung und Entwicklung des Gesetzes gegen Wettbewerbsbeschränkungen, Wirtschaft und Wettbewerb 2008, 270–273 at 270 referring to an estimation according to which 2,500 cartels could be counted in Germany in the year 1925. On the legal history of the German Act Against Restraints of Competition and its historical roots see D. J. GERBER, Law and Competition in Twentieth Century Europe: Protecting Prometheus (2003) 115–153 and 232–287; L. MURACH-BRAND, Antitrust auf deutsch: Der Einfluß der amerikanischen Aliierten auf das Gesetz gegen Wettbewerbsbeschränkungen (GWB) nach 1945 (Tübingen 2004), passim; K. W. NÖRR, Zwischen den Mühlsteinen: Eine Privatrechtsgeschichte der Weimarer Republik (Tübingen 1988) 143–157; *idem,* Die Leiden des Privatrechts: Kartelle in Deutschland von der Holzstoffkartellentscheidung zum Gesetz gegen Wettbewerbsbeschränkungen (Tübingen 1994), passim. On the development of the European competition regime see the contributions in H. SCHWEITZER/K. K. PATEL (eds.), The Historical Foundations of EU Competition Law (Oxford 2013).

[21] On the legal history of Japanese competition law see D. J. GERBER, Global Competition: Law, Markets, and Globalization (Oxford 2010) 210–213; C. HEATH, Japan, in: J. P. TERHECHTE (ed.), Internationales Kartell- und Fusionskontrollverfahrensrecht (Bielefeld 2008) § 59 paras. 2–5; H. IYORI, Das japanische Kartellrecht: Entwicklungsgeschichte, Grundprinzipien und Praxis (Köln 1967) 17–33; H. IYORI/A. UESUGI, The Antimonopoly Laws and Policies of Japan (3rd edn. New York 1994) 1–29; M. MATSUSHITA, International Trade and Competition Law in Japan (Oxford 1993) 76–81; W. PAPE, Das Japanische am Kartellrecht Nippons, Wirtschaft und Wettbewerb 1992, 482, 483–491; A. NEGESHI/U. EISELE, Recht der Wettbewerbsbeschränkungen, in: H. Baum/M. Bälz (eds.), Handbuch Japanisches Handels- und Wirtschaftsrecht (Köln 2011) § 17 para. 10.

[22] DEREGULIERUNGSKOMMISSION, *supra* note 3, no. 5.

"[…] it is difficult to define in legal language the precise line between lawful and unlawful combinations. This must be left to the courts to determine in each particular case. All that […] lawmakers […] can do is to declare general principles, and […] courts will apply them so as to carry out the meaning of the law."[24]

Even though the goals of competition law are subject to an intense debate in the international arena, many would agree that in industrialized countries competition law should protect open markets. Free and unfettered competition is the best driver for innovation and economic welfare.[25] There is also a wide consensus that competition law prohibitions must be interpreted in line with sound economic principles.[26] Slightly less accepted – but not of minor importance – is that the application and interpretation of competition rules should be submitted to the rule of law.[27]

Competition rules usually apply to private market actors and do not prevent states from engaging in anti-competitive behavior. Given that, additionally, firms with market power might defend their position against newcomers in certain markets, competition on deregulated markets may not develop instantly. Striking certain rules out of the statute books alone is frequently not sufficient to revive competition. Opening markets to competition often presupposes changes in the legal framework so as to establish a fertile ground for the development of future competitive action.[28] Once the decision has been taken to deregulate a certain market, the rules of competition law or rules in related fields of law might have to be adapted in order to ensure a smooth transition from regulation to competition.

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[23] W. MÖSCHEL, Japanisches Kartellrecht – von außen gesehen, Zeitschrift für Japanisches Recht 4 (1997), 50, 52; W. WURMNEST, Competition Law and Policy in Europe and Germany: Current Issues, in: Rosenau/Tang Van (eds.), Economic Competition Regime: Raising Issues and Lessons from Germany (Contributions to Vietnamese-German Symposia) (Baden-Baden 2014) 61–77 at 63.

[24] 21 Cong. Rec. 2457, 2460 (1889) cited by *United States v. Topco Associates, Inc.*, 405 U.S. 596, 621 (1972), per Chief Justice Burger (dissenting).

[25] On the normative foundations of competition law see the contributions in D. ZIMMER (ed.), The Goals of Competition Law (Cheltenham 2011).

[26] There is, however, some controversy over the question as to which economic principles courts should rely on and how economic principles can be translated into the legal analysis. On this dispute see W. WURMNEST, Marktmacht und Verdrängungsmissbrauch: Eine rechtsvergleichende Neubestimmung des Verhältnisses von Recht und Ökonomik in der Missbrauchsaufsicht über marktbeherrschende Unternehmen (2nd edn. Tübingen 2012) 112–256.

[27] MÖSCHEL, *supra* note 23, 52–53 (noting with regard to the Japanese approach that it resembles more a "rule of authority" than a "rule of law" given the strong tradition of an administrative steering of the economy).

[28] BASEDOW, *supra* note 5, p. 15.

III. Creating Economic Zones (Japan)

1. Concept and implementation

a) A brief history of Special Economic Zones in Japan

The creation of special economic zones is not new in Japan, although those zones have never reached the importance of SEZs in other Asian countries such as China or South Korea. The first SEZ on Japanese territory was installed on the Island of Okinawa under US occupation. After the return of Okinawa to Japanese administration in 1972, this zone was further developed. The government granted, inter alia, customs exemptions and tax breaks to certified companies to stimulate economic growth in that region.[29] The economic effect of this program was however rather limited. Very few newcomers relocated to the Island, as the certification process was burdensome and the benefits apparently were not that attractive.[30]

In 2002 the Koizumi administration spread the idea of an SEZ throughout the entire country. It enacted legislation which allowed for the designation of local zones in which certain exemptions from national rules could be implemented at the request of the local government.[31] In practice, these zones served two functions:

First, they offered the possibility to develop the local economy by introducing market liberalization measures, for example by abolishing the requirement that certain alcohol brewers had to produce a minimum quantity each year to receive a license necessary for the production of sake.[32]

As a second and main function, these zones served as a testing ground for future law reforms. If a deregulation measure withstood the practical test at the local level, the government could introduce this measure at a national scale. Introducing such measures first at a regional level was thus seen as a tool to soften economically unfounded resistance to deregulation raised by interest groups.[33] Due to the experiences gained in a local SEZ, for example, the license requirements for passenger transport were modified at the national level. Prior to the reform, each person who wanted to transport passengers for non-private purposes needed to acquire a license. This requirement made it difficult for certain non-profit organizations to organize transports for welfare purposes. As a local SEZ which allowed such organizations to carry out transport under less strict conditions did not result in taxi drivers and

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[29] HIROKI HARADA, Special Economic Zones as a Governance Tool for Policy Coordination and Innovation, Journal of Japanese Law 31 (2011) 205–221 at 206–208.

[30] HARADA, *supra* note 29, 208.

[31] HARADA, *supra* note 29, 208.

[32] HARADA, *supra* note 29, 209.

[33] HARADA, *supra* note 29, 208.

transport companies being driven out of the market, the license requirement was modified for the entire country.[34]

b) The economic zones of the Abe administration

The SEZs to be implemented by the Abe administration build upon the experiences gathered with the zones established by the Koizumi administration. The Abe administration seems, however, far more ambitious in its desire to use these zones as a tool to lay the groundwork for broad deregulation measures. In comparison to the old SEZs, the new zones are much larger in size and encompass important commercial centers. Each zone aims to deregulate or stimulate a particular economic sector: Whereas Tokyo, for example, will put forward proposals to promote foreign investments, the zone around Osaka will focus on medical innovation and Fukuoka should become a hub for fast-growing start-up companies by providing tax breaks and – at least as originally planned[35] – relaxed labor standards.[36] The Abe administration hopes that the negotiations between the central government and the local governments of each zone will abolish unjustified regulation so as to boost the economy.[37]

From a competition policy perspective, the idea of the Prime Minister raises various issues. This paper focuses on the crucial question whether regional deregulation makes sense from a competition policy perspective. As the precise content of the SEZ concept is still subject to political discussion and therefore evolving, my findings can only be of a preliminary nature.

2. Regulatory competition and regional deregulation

a) Effects on competition

Competition policy aims to ensure a level playing field. The new SEZs will abolish unjustified deregulation at a regional level. As the regions are not allowed to compete for the best regulation, the SEZ concept may lead to distortions on the Japanese market.

Limiting deregulation to certain geographic areas of a country does not pose a threat to the level playing field if the firms that are located in the SEZ do not compete with other firms from this country on the national market. So if, for example, a country creates a special economic zone to attract foreign

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[34] HARADA, *supra* note 29, 209.

[35] C. PEJOVIĆ argues in his paper (p. 175 in this book) that this goal has been abandoned by the government.

[36] K. UJIKANE/M. TAKAHASHI, Abe Names Special Strategic Zones in Bid to Boost Japan's Allure, <http://www.bloomberg.com/news/2014-03-28/abe-names-special-strategic-zones-in-bid-to-boost-japan-s-allure.html>.

[37] *Ibidem.*

car manufacturers, there is no distortion of competition on the national market if there are no other car manufacturers present in that country.

But given the size of the new Japanese SEZs, it is rare that the firms within these zones will not have competitors from other parts of Japan. In these cases, regional deregulation may lead to distortions on the market. To give a simple example: Assume that the government relaxes labor standards considerably for the Fukuoka zone and gives Fukuoka firms significant tax privileges. These measures give those firms cost advantages over competitors. The Fukuoka firms can offer lower prices and will attract more business acumen at the expense of Japanese competitors from outside this SEZ. As the central government does not allow other prefectures to implement similar measures, regulatory competition, i.e. competition among the different lawmakers for the best legal framework for firms, cannot take place. Put simply: the SEZs are benevolent for firms inside their borders, but they may have a negative effect on the competitiveness of firms outside these zones.

Japanese firms outside the SEZs with business models targeting the entire national market will thus have to make a choice: Either they try to compete with their cost disadvantages or they decide to relocate their headquarters and/or production facilities to an SEZ in order to benefit from the proposed deregulation measures. The latter will only take place if the cost benefits gained by the relocation are significant and the general business conditions in the SEZ are comparable to the present location of the firm, for example with regard to the availability of trained personnel, transport facilities, office space etc.

Summing up, the result of the creation of SEZs can be an unlevelled playing field for actors competing on the entire Japanese market given that the SEZ concept does not allow for a proper regulatory competition among the regions. This raises the question of which implications have to be drawn from this finding.

b) SEZs as useful laboratories

The opponents of deregulation will certainly argue that regional deregulation without the possibility of engaging in regulatory competition does not make economic sense as it creates tensions between regions.

In my opinion, this objection cannot be raised against regional deregulation as such. It goes without saying that the first best solution would be a nationwide deregulation program to avoid arbitrage. Such a program would also stimulate the economy to a larger effect than deregulation measures that are limited to a certain geographic area.

As a second best solution, regional deregulation is however not *per se* wrong from a competition perspective. The SEZ concept creates useful laboratories to study the effects of deregulation measures to overcome interest-driven resistance against economically justified deregulation. So the SEZ

concept is a useful first step on the path to deregulation. Another question is, however, whether the zones in their current shapes will help to overcome interest-driven resistance. They are rather large and it is difficult to see how the shaping of the zones makes it easier to overcome this resistance.

c) Possible limitations to ease the effects of distortion

If it can be assumed that the SEZs are helpful in overcoming interest-driven resistance, the Japanese government should however find ways to limit the negative side effects of its regional deregulation policy.

aa) A first idea for limiting possible distortions is to apply deregulation measures to start-ups or newcomers only. Accordingly, only firms in new and emerging markets or those with little market power will profit from deregulation. Strengthening those firms may intensify competition. Limiting deregulation measures to such firms is, however, a rather complex endeavor. From an economic perspective, it is very onerous to precisely define for just how long firms should be qualified as newcomers as this position differs across markets. Similar issues arise with the classification of firms as "start-ups". In sum, an economically sound implementation of this limitation might be rather burdensome. These difficulties counsel against the use of this approach as a general concept for all SEZs in Japan.

bb) A second approach is the creation of zones in which only foreign investors may benefit from relaxed standards. This approach aims at the generation of more foreign investment and is, for example, pursued by Korea with its eight "Free Economic Zones". It seems that some administrators in Japan have a similar concept in mind for the Tokyo zone. The creation of such zones will however not help to unleash the market forces in the entire country as firms outside these zones will still suffer from unjustified regulation. Such zones can therefore merely complement a national deregulation program that abolishes unjustified regulation for the entire market in order to give Japanese companies the opportunity to become more competitive and innovative.

cc) A third – and very traditional – approach for restricting distortions of competition resulting from regional deregulation is to place economic zones in areas of the country that are in need of development. Economic logic dictates that not many firms will move to such a zone in the short and medium run if, for example, essential market factors important for the provision of goods or services to customers are not well developed in those areas. So there is little distortion of competition. The experiences with the existing SEZ in Okinawa proves this point. Despite certain tax benefits, not many companies have relocated to this detached island.[38] In addition, limiting deregulation to

[38] HARADA, *supra* note 29, 208.

selected underdeveloped areas in an industrialized country will barely stimulate the economy as a whole considerably as only few individuals and firms will benefit from the positive effects of the deregulation. For the zones designed by the Abe administration, however, this limitation is obviously not an option as the Prime Minister wants to include Japan's commercial centers within the zones.

dd) Therefore a fourth limitation should be implemented. The best option to limit unwarranted spill-over effects is to pursue the policy of regional deregulation only for a limited time period. The length of the period depends on the deregulation measures taken. The more complex these measures are, the longer the time frame must be. Otherwise it is not possible to meaningfully evaluate the effects of the deregulation policy. Generally speaking, a workable period seems to be five to seven years. After that time, the central government should evaluate the effects of the various deregulation measures implemented in the SEZs and decide which of these measures should be introduced at the national level. After such a step – which levels the playing field for all market actors – the individual SEZs could be either dissolved or used as laboratory to test other deregulation concepts.

Restricting the intended regional regulation to a certain time period will limit possible distortions flowing from this type of deregulation significantly. Market actors located outside the SEZs can expect that competitive advantages will be leveled within the near future. Having this in mind, they will carefully consider whether moving into an SEZ will make economic sense given that moving is not free of cost. It can be expected that moves into the SEZs will be less frequent under the proposed limitation than in the case of regional deregulation with no expiry date. When firms can expect that certain competitive advantages will be granted for long periods of time in the SEZs only and not in their present location, they will be much more willing to move than under the scenario in which they are expecting that economically sound deregulation will be expanded to the entirety of Japan in the near future.

3. Summary

The concept of regional deregulation as pursued by the Abe administration might be a useful first step for overcoming interest-driven opposition hindering regulation even in cases in which it would be economically justified and beneficial for the society as a whole. After a period of five to seven years, the government should, however, review the legal framework and expand the deregulation benefits to the entire country to restore the level playing field for firms competing on the Japanese market.

IV. Deregulation of Monopolistic Markets (Europe)

1. Deregulation in Europe

The deregulation process in Europe has different layers. Not only have the EU Member States adopted national deregulation programs, there is also a strong push by the EU to unlock foreclosed national markets. The EU pressure for deregulation stems from a variety of instruments, which cannot be dealt with here in their entirety. A short and incomplete survey must suffice.

First, the European freedoms, especially the freedom to provide services (Art. 57 TFEU), has forced the Member States to open markets to competitors from other Member States. Second, the European Court of Justice applies the competition rules not only to private but to a certain extent to public undertakings also to ensure that those undertakings cannot monopolize markets by anticompetitive means.[39] Third, the Member States are under the obligation to abolish legal rules allowing public undertakings – with the exemption of undertakings that are entrusted with the operation of services of general economic interest – to act contrary to the prohibitions of European competition law (Art. 106 TFEU).

The most visible push for deregulation stems however from various European directives adopted since the 1990s aiming at a liberalization of markets controlled by (state-created) monopolies. These directives have concerned, for example, the telecommunication and energy sectors and the provision of postal services.[40] The deregulation targeted the entire EU market and was not restricted to certain zones. As the opening of those markets is a complex endeavor, market liberalization was implemented in various steps, thus creating a mix of regulation and liberalization. To ensure a smooth transition from regulation to competition, regulation authorities were installed to monitor the market and control business practices of former monopolists, especially their pricing policies, *ex ante.* In addition, monopolists had to respect the prohibitions of competition law which apply *ex post.*

2. Complementing the competition rules

The European deregulation did not necessitate a general change in the European competition rules. These rules were sufficiently broad and flexible to take into account the peculiarities of deregulated markets. Special legislative attention was however given to the important question of market access in liberalized network industries. In these industries, the former monopolists usually kept control over the network. To ensure non-discriminatory access to

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[39] For more details see E.-J. MESTMÄCKER/H. SCHWEITZER, Europäisches Wettbewerbsrecht (3rd edn. München 2014) § 9 para. 32.

[40] For more details see MESTMÄCKER/SCHWEITZER, *supra* note 39, § 1 paras. 68–101.

the network, which is essential to stimulate competition, the EU enacted special rights of access for third parties to the network on a nondiscriminatory basis.[41] These special provisions, however, only complemented the European competition rules and did not supplant them.

3. Importance of rigorous enforcement of unilateral conduct rules

Even though the European legislature has removed many important barriers which restricted competition on the European internal market, the legislature did not opt for a divestiture of the (national) monopolists, hoping that with the emergence of efficient newcomers, the market power of the former monopolists would vanish in the near future. Faced with the prospect of competition, the (former) monopolists obviously try to defend their strong market position, sometimes by having recourse to anticompetitive practices.

From a competition policy perspective, there is usually little danger that a former monopolist will enter into an anticompetitive agreement with a newcomer. An efficient newcomer usually wants to acquire a certain market share to profit from economies of scale and has therefore no interest in agreeing on prices or related parameters as this would make it more difficult for the new player in the market to seize market shares from the monopolist. A monopolist can also not simply restrict competition by merging with the newcomer. Such a merger needs to be notified and can be halted by competition authorities if it significantly impedes the competitive process on a given market. Thus, monopolists have difficulties in restraining competition by anticompetitive agreements or mergers.

This is not so with regard to the third pillar of competition law, i.e. exclusionary practices of dominant firms (Art. 102 TFEU) or market monopolization in the language of US antitrust law (Sec. 2 Sherman Act). Recourse by dominant firms to unilateral conduct to restrict competition may effectively foreclose newcomers. Practices such as predatory pricing may therefore be effective weapons for the maintenance of monopoly power. The detection of such conduct is rather difficult. To prove the (potential) anticompetitive effect of abusive strategies, many economic factors have to be evaluated. Unless a state has a civil procedure law like those in the United States,[42] such abusive practices are very difficult to stop by private actions as a private plaintiff is often not in a position to collect all relevant economic data to prove the anticompetitive nature of the dominant firm's business strategy. In Europe, as in Japan, private actions against exclusionary practices of dominant firms are therefore rare.

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[41] For more details see MESTMÄCKER/SCHWEITZER, *supra* note 39, § 19 paras. 97–102.

[42] On the peculiarities of the US system as compared to the continental-European approach D. POELZIG, Normdurchsetzung durch Privatrecht (Tübingen 2012) 65–74.

Given that private enforcement cannot stop the former monopolists from defending their strong market position by exclusionary practices, public enforcement organs have to safeguard competition in liberalized markets. If these authorities do not have the resources and/or the legal means to vigorously enforce the prohibition of exclusionary conduct, any deregulation process will remain incomplete.

In Europe, the EU Commission has learned that lesson. A look at cases in which the Commission has opened proceedings over the last 15 years to end abusive practices reveals a large number of high profile cases against former state-protected monopolists. Law enforcement efforts concerned in particular abusive pricing conduct by dominant market players, which can be a very effective strategy for a dominant firm seeking to foreclose newcomers from the market. The Commission targeted, for example, predatory pricing, i.e. pricing policies in which dominant firms price their products below a certain measure of cost.[43] It also opened proceedings to halt anticompetitive margin-squeezes[44] by which a vertically integrated firm with market power supplies a key input to both its downstream entity as well as to its competitors at a price that makes activities of (non-vertically integrated) downstream rivals unprofitable.[45] In addition, on a partly liberalized market the Commission stopped a dominant firm from cross-subsidizing its business on the deregulated market with revenues generated on the market that was not yet liberalized.[46] Obviously, the Commission did not limit itself to pricing abuses but also investi-

[43] Commission Decision of 16 July 2003, Case COMP/38.233 – *Wanadoo Interactive;* affirmed by Case T-340/03 (France Télécom v. Commission), E.C.R. 2007 II-107, and Case 202/07 P *(France Télécom v. Commission),* E.C.R. 2009 I-2369. See also Case C-209/10 *(Post Danmark v. Konkurrencerådet),* ECLI:EU:C:2012:172 – this case concerned a proceeding initiated by the Danish competition authority before a Danish court.

[44] For details of this abuse see R. O'DONOGHUE / A. J. PADILLA, The Law and Economics of Article 102 TFEU (2nd edn. Oxford 2013) 364–422.

[45] Commission Decision of 21 May 2003, Case COMP/C-1/37.451, 37.578, 37.579, O.J. 2003 L 263/9 – *Deutsche Telekom AG;* affirmed by Case T-271/03 (Deutsche Telekom v. Commission), E.C.R. 2008 II-4777 and Case C-280/08 P *(Deutsche Telekom v. Commission),* E.C.R. 2010 I-9555; Commission Decision of 4 July 2007, O.J. 2008 C 83/05 – *Wanadoo España v. Telefónica,* affirmed by Case T-336/07 *(Telefónica and Telefónica de España v. Commission),* ECLI:EU:T:2012:172, and Case C-295/12 P *(Telefónica SA and Telefónica de España SAU v. Commission),* ECLI:EU:C:2014:2062; Case C-295/12 P *(Telefónica SA and others v. Commission);* Commission Decision of 5 March 2014, Case COMP/AT.39.984 – *Telekomunikacja Polska.* See also Case C-52/09 (Konkurrensverket v. TeliaSonera Sverige AB), E.C.R. 2011 I-527 – this case concerned a proceeding initiated by the Swedish competition authority before a Swedish court.

[46] Commission Decision of 20 March 2001, Case COMP/35.141, O.J. 2001 L 125/27 – *Deutsche Post AG.*

gated other exclusionary practices, which cannot be described here for reasons of space.[47]

To protect emerging competition, the Commission tackled pricing abuses in, inter alia, the markets for telecommunication services,[48] postal services[49] and rail services.[50] Additionally, a former national air carrier that foreclosed the market by offering travel agents special rebates was sanctioned.[51]

It is not possible to give a precise number of cases or a percentage of how many cases in the overall enforcement activities concerned deregulated markets, as the European competition rules are also enforced by national competition authorities and I do not have the means to analyze the case law of 28 EU Member States. It is, however, possible to say with certainty that the competition enforcers in Europe have dedicated considerable resources to the enforcement of Art. 102 TFEU for the protection of competition on freshly deregulated markets.

4. Implications for Japan

Against this background, I want to evaluate what Japan could learn from the European experiences. This analysis has to start with the consideration that even though Japan introduced the Antimonopoly Law (AML) under US pressure in 1947, this statute did not gain much prominence over the next decades

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[47] See Commission Decision of 25 July 2001, Case COMP/C-1/36.915, O.J. 2001 L 331/40 – *Deutsche Post AG* (German postal services provider condemned for intercepting, surcharging and delaying incoming international mail); Commission Decision of 22 June 2011, Case COMP/39.525 – *Telekomunikacja Polska* (Polish telecommunication firm condemned for preventing entry of competitors onto Polish broadband markets).

[48] Commission Decision of 16 July 2003, Case COMP/38. 233 – *Wanadoo Interactive;* affirmed by Case T-340/03 *(France Télécom v. Commission),* E.C.R. 2007 II-107, and Case C-202/07 P *(France Télécom v. Commission),* E.C.R. 2009 I-2369; Commission Decision of 4 July 2007, O.J. 2008 C 83/05 – *Wanadoo España v. Telefónica,* affirmed by Case T-336/07 *(Telefónica and Telefónica de España v. Commission),* ECLI:EU:T:2012:172, and Case C-295/12 P *(Telefónica SA and Telefónica de España SAU v. Commission),* ECLI:EU:C:2014:2062.

[49] Commission Decision of 20 March 2001, Case COMP/35.141, O.J. 2001 L 125/27 – *Deutsche Post AG;* Commission Decision of 5 December 2001, Case COMP/37.859, O.J. 2002 L 61/32 – *De Post v. La Poste.*

[50] Commission Decision of 18 December 2013, Case COMP/AT.39678 and AT.39731 – *Deutsche Bahn I, II.* See on these cases T. STEINVORTH, Deutsche Bahn: Commitments End Margin Squeeze Investigation, Journal of European Competition Law & Practice 5 (2014) 628–630.

[51] Commission Decision of 14 July 1999, Case IV/D-2/34.780, O.J. 2000 L 30/1 – *Virgin v. British Airways;* affirmed by Case T-219/99 *(British Airways v. Commission),* E.C.R. 2003 II-5917, and Case C-95/04 P *(British Airways v. Commission),* E.C.R. 2007 I-2331.

as there was little enforcement by the Japanese Fair Trade Commission ("JFTC").[52]

The first version of the AML was too strict as the US – similarly as in Germany[53] – wanted to see certain industrial conglomerates abolished which were deemed responsible for the war. After the end of the US occupation, the AML was softened by various reforms over the next years, with the exception of certain prohibitions having been reinforced after the oil crisis in the 1970s.[54]

Despite these amendments, the enforcement of the AML rules remained weak. Industrial policy aiming to boost exports was given priority over the creation of competitive structures on the Japanese market. When undertaken to enhance exports, state-sponsored cooperation among firms was regarded as a major tool to create economic growth and welfare.[55] It was only in the 1990s that the importance of a proper competition order gained significant support and the administrative ordering[56] of the economy was slightly pushed back. This development was fostered by the economic stagnation that hit Japan at that time,[57] by the increasing awareness of consumers of the social

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[52] On this development see H. FIRST, Antitrust Enforcement in Japan, Antitrust Law Journal 64 (1995) 137–182 at 142–157; E. KAMEOKA, Competition Law and Policy in Japan and the EU (Cheltenham 2014) 10–16; S. VANDE WALLE/T. SHIRAISHI, Competition law in Japan, in: Duns/Duke/Sweeney (eds.), Research Handbook on Comparative Competition Law (Cheltenham 2015) 415–442 at 415–416; M. MARQUIS/T. SHIRAISHI, Japanese Cartel Control in Transition, CEU San Pablo University Madrid, Working Paper no. 47/2014 (Competition Policy Series), available at <http://ssrn.com/abstract=2407825>, 5: "[The] enforcement of Japan's Antimonopoly Act ('the AMA') began with a bang in the late 1940s, but the bang gave way to a long whimper, with only a few short episodes where the AMA showed signs of life, notably around 1960 and in the 1970s when high-profile cases were won by the JFTC and when the AMA was amended and reinforced."

[53] On the early ideas of the US occupation forces on the deconcentration and decartellization of the German economy after World War II see E.-J. MESTMÄCKER, 50 Jahre GWB: Die Erfolgsgeschichte eines unvollkommenen Gesetzes, Wirtschaft und Wettbewerb 2008, 6–22 at 6–9; MURACH-BRAND, *supra* note 20, 28–58.

[54] HEATH, *supra* note 21, § 59 paras. 2–5.

[55] GERBER, *supra* note 21, 212–213.

[56] On the common practice of ministries exempting certain agreements from the application of competition rules see C. HEATH, Bürokratie und Kartellkultur in Japan, Wirtschaft und Wettbewerb 1993, 474–482 at 475 (referring to an estimation of the JFTC according to which, in 1989, around 50% of Japanese industry benefited from administrative measures restricting competition).

[57] On the economic background of the stagnation see M. HEMMERT/R. LÜTZELER, Landeskunde und wirtschaftliche Entwicklung seit 1945, in: Deutsches Institut für Japanstudien (ed.), Die Wirtschaft Japans: Strukturen zwischen Kontinuität und Wandel (Berlin/Heidelberg 1998) 1–18 at 15–16.

cost of state intervention and regulation,[58] and by external pressure mainly exerted by the US[59] on the Japanese government to enforce competition rules more vigorously.[60]

As consequence, the JFTC gained more resources, a better organization[61] and a better standing within the Tokyo bureaucracy, and more enforcement took place, often in informal proceedings.[62] However, in his latest book on the development of competition law in various parts of the world, *David Gerber,* notes:

> "The […] enforcement efforts in areas other than vertical relationships have varied but, in general, they have been less intensive. Although the AML contains provisions prohibiting monopolies, they have proven difficult to enforce effectively. Moreover, incentives for the JFTC to confront dominant firms have been limited, especially given the traditional reliance on dominant firms to lead Japanese economic growth."[63]

As the book was published in 2010, the efforts of the JFTC will certainly have increased over the last years.[64] In 2010 the Japanese Supreme Court, for example, upheld a JFTC cease and desist order against a dominant telecom operator (NTT East) which tried to exclude competitors from the market for high speed internet access.[65] In any event, it is not the intention of this paper to comment on the effectiveness of the Japanese competition law enforcement system. One important lesson we have learned in Europe should, however, be highlighted: Without a rigorous application and enforcement of the rules restricting the *marge de manœuvre* of dominant firms to have recourse to anticompetitive practices, the development of the competitive process in freshly deregulated markets might be hampered. As consequence, the fruits of the deregulation process, i.e. the beneficial economic effects, cannot be har-

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[58] M. SCHAEFER, Wettbewerbsrecht in Japan und Europa: Eine rechtsvergleichende Studie ausgewählter Aspekte (Hamburg 2001) 72.

[59] It was essentially argued that anticompetitive practices in Japan foreclosed US firms from the Japanese market. On these allegations and their legal consequences in Japan see GERBER, *supra* note 21, 213–214; M. KOTABE/K. W. WHEILER, Anticompetitive Practices in Japan (Westport/Connecticut 1996) 141–148; MATSUSHITA, *supra* note 21, 84–85; SCHAEFER, *supra* note 58, 72–75.

[60] GERBER, *supra* note 21, 213–215.

[61] On the re-organization of the JFTC see W. M. VISSER 'T HOOFT, Japanese Contract and Anti-Trust Law (London 2002) 57.

[62] HEATH, *supra* note 21, § 59 para. 20.

[63] GERBER, *supra* note 21, 216.

[64] KAMEOKA, *supra* note 52, 94 notes in a more recent publication: "Whereas in the US the enforcement of antitrust rules against dominant companies has been comparatively lenient, in particular owing to key judgments of the US Supreme Court, the EU and Japan generally assume a more vigilant posture with regard to dominant firms".

[65] *Saikō Saiban-sho* [Supreme Court], 17 December 2010, Heisei 21 (gyō-hi) no. 348, 57(2) Shinketsushu 215, cite taken from VANDE WALLE/SHIRAISHI, *supra* note 52, 421 (footnote 25).

vested in due time. Thus, any deregulation must be supported by proper competition law enforcement; otherwise the deregulation process will remain incomplete. The Japanese legislature should have this finding in mind when implementing its deregulation program at the national level.

V. Conclusion

1. The deregulation campaign initiated by the Abe administration might be a useful first step. Each state should revise its regulatory framework at regular intervals.
2. Special regulation restricting competition must be regarded as an exception in a market economy and should be abolished as far as possible.
3. The creation of various economic zones with deregulation programs in different areas of the law can unlevel the playing field for firms competing for the entire national market.
4. To limit the effect of distortion, all deregulation measures implemented in the SEZs should be evaluated after five to seven years. If a deregulation measure has stood the practical test at the local level, it must be implemented nationwide to create a level playing field.
5. It must be ensured that dominant firms in deregulated markets will be sanctioned if they have recourse to anticompetitive means. Otherwise the deregulation process will be incomplete. If necessary, a major deregulation program should be accompanied by measures to improve competition law enforcement.

III. Areas of Law Affected

Japanese Labor Law: Hurdles on the Road to Abenomics

Časlav Pejović[*]

I. Introduction

The employment system is considered to be one of the most distinctive features of the Japanese economic model. During the period of economic expan-

[*] I am grateful to Hiroya Nakakubo from Hitotsubashi University and Susumu Noda from Kyūshū University for their very helpful comments and suggestions. Of course, I remain responsible for all errors in this text.

The term "Abenomics" is portmanteau of Abe and economics and it refers to the economic policies advocated by Shinzō Abe since the December 2012 general election, when he was elected to his second term as Prime Minister of Japan. The goal of this policy is to revive the economy with "three arrows": a massive fiscal stimulus, more aggressive monetary easing from the Bank of Japan, and structural reforms to boost Japan's competitiveness. The "third arrow" structural reforms include reforms to labor law.

sion, the Japanese employment system, with a high job stability and low unemployment rate, was praised as one of the key factors of Japan's success story. After the bubble burst in the early 1990s and economic recession left many companies with a huge excess of employees, the employment system came under criticism as one of the obstacles to economic recovery. Since then many have argued for granting more flexibility to employers, including the right to reduce the workforce in times of economic hardship. On the other hand, there are dissenting opinions warning that greater flexibility in the hands of employers may undermine employees' job security and pose a risk to social stability.

This paper will examine new trends and developments in the Japanese employment system by analyzing the reactions of employers with regard to employment patterns, changes in the legal framework, and new tendencies in dismissal law. Particular attention will be given to the analysis of labor law reforms undertaken by the Japanese government aimed at enabling a transition from the system of job security towards a more liquid labor market. These reforms will be analyzed in the light of the socio-economic changes, new developments towards a more diversified and flexible labor market, as well as the social constraints that may present an obstacle to more comprehensive changes to the existing system.

II. Main Features of the Traditional Employment System

Cooperative relations between labor and management have been an essential feature of the Japanese employment system for many decades. This system is based on three main elements: long-term employment, treatment based on seniority, and company-based labor unions.[1] It is further reinforced by the cross shareholding system *(mochiai),* the company-based training system, and social norms. All these elements of the employment system "interact together, acting as a virtuous circle."[2] Another essential segment of the traditional model is job security, which is also related to long-term employment.

1. Long-term employment

Long-term employment, in the sense of spending one's whole career with the same company, is not unique to Japan, since such patterns exist in many other

[1] M. ISHIDA, High Economic Growth and Labor Law: Reciprocal Construction of the Japanese-Style Employment System and Labor Law, Japan Labor Review 11:3 (2014) 106.

[2] R. J. GORDON, Why US wage and employment behaviour differs from that in Britain and Japan, The Economic Journal 92 (1982) 13, 37.

countries.[3] The essence of the Japanese model of long-term employment, however, is not in the numbers, but in its character.

Under the long-term employment system, an employee is recruited directly from school or university and is expected to remain in the company's employ for the length of his or her career.[4] In return, he or she can expect not to be fired, except under some extraordinary circumstances.[5] The basis of this agreement is the commitment of employers to provide secure employment to their employees in return for loyalty and "lifetime" service. The employer can rely on the loyalty and dedication of long-term employees in exchange for investment in their training.

The "white cloth" metaphor explains the rationale for the simultaneous hiring of new graduates and why the companies have a preference for fresh graduates: "White cloth (i.e. new graduates) can be dyed any color, but a piece of cloth that has already been dyed (i.e. already experienced workers) is difficult to re-dye another color."[6]

The most important thing for employers is not what potential recruits can already do, but what they will become able to do.[7] This kind of attitude represents a serious restraint on mobility; companies are reluctant to hire young people who have recently graduated, but have failed to find a job before the graduation.[8]

Long-term employment in Japan is a complex phenomenon influenced by a number of factors. Economic and political interests may have been the driving force behind the adoption of long-term employment, while social norms played an important role in the process of its smooth integration in the Japanese economic model.[9] Long-term employment was well accepted by all

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[3] The statistics of the OECD for 2013 shows that the average length of service of employees in Germany is 11.7 years, in France 12.3, in Italy 13.4, and in the UK 9.7 (OECD Data Base, Employment by job tenure intervals), while in Japan the average length of service of regular employees is 11.9 years (Basic Survey on Wage Structure 2013, MHLW).

[4] Companies usually hire new employees to start working in April, which corresponds with the academic year in Japan, which runs from April to March.

[5] J.C. ABEGGLEN/G. STALK JR., Kaisha – the Japanese Corporation (Tōkyō 1985) 183–188, 191–192, 194–206; see also T. ARAKI, Changing Employment Practices, Corporate Governance, and the Role of Labor Law in Japan, Comparative Labor Law and Policy Journal 28 (2007) 251, 252; R. GILSON/M. ROE, Lifetime Employment: Labor Peace and the Evolution of Japanese Corporate Governance, Columbia Law Review 99 (1999) 508.

[6] H. NAGANO, Trends in Corporate Hiring of Recent Graduates: Focus on Developments since the Global Financial Crisis, Japan Labor Review 11:2 (2014) 24.

[7] *Id.* 24.

[8] Many students in such a situation intentionally fail to obtain the required number of credits for graduating, thereby extending their studies for another year with the hope of finding a job before they graduate. Such a practice may be unique to Japan.

[9] Č. PEJOVIĆ, Changes in Long-term Employment and Their Impact on the Japanese Economic Model: Challenges and Dilemmas, Journal of Japanese Law 37 (2014) 51, 55.

relevant actors and became one of the key features of the Japanese economic model, because the structure of corporate control and ubiquitous long-termism of the Japanese economic model were well suited to the long-term employment concept. Government policy as expressed in the legal framework, as well as the courts' attitudes in dismissal cases, provided additional and important support.

2. Seniority system

As a part of the long-term employment system, the promotion of employees within the company as well as employees' wages, have traditionally been based on the principles of seniority and merit (*nenko chingin*).[10] New employees normally start with a low salary with the expectation of regular increases over their career. Many companies have adopted the wage system based a worker's rank, while the ranking itself to a great extent depends on the number of years of service. The employees with the longest time in service are also given preferential treatment with respect to other important issues, such as promotions and job rotation.

The seniority system promotes greater loyalty on the part of employees and provides strong incentives to workers at all ages to remain with their first company. This system undermines any possible ambitions of the young employees to change companies before they reach the age at which their salary exceeds the value of their productivity.[11] Meanwhile, elderly workers also have no incentive to change companies, since the new company usually would not offer the same amount of wages.

As a part of this system, Japanese companies usually set a mandatory retirement age, which is legally valid if it is set at 60 or higher.[12]

3. Labor unions

In Japan over 90% of the labor unions are established within an individual enterprise. Labor unions bargain collectively with a single employer, so that collective agreements are concluded at the enterprise level. As with many other elements of the Japanese economic model, company-based unionism is closely related to the long-term employment system.

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[10] Sometimes only the first component of the term – *nenko* is used as reference to the seniority wage system, because the Chinese characters used in this term may serve to indicate its meaning: *nen*=seniority and *ko*=merit. In fact, *ko* tends to mean "merit of long service".

[11] T. HATTA, Assessing Japan's Growth Strategy: Breaking apart "bedrock"-like regulations with the establishment of special economic zones, Nihon Keizai Shimbun, 19 June 2013.

[12] Article 8 of the Law Concerning Stabilization of Older Persons.

Company-based labor unions have played the key role in the creation and maintenance of the present employment system. The long-term employment system was initially created out of negotiations between labor unions and employers in attempt to find a solution to the problems relating to labor unrest that appeared in the aftermath of the Second World War. In a labor market where employees tend to stay with the same company, company-based unionism has clear advantages over industry-based unionism, as it represents the most suitable mechanism for meeting the expectations of employees who develop their working careers in a particular company.[13] Labor unions normally limit their membership to regular workers, because there may be differences and even conflicts between the interests of regular and non-regular workers.

Adversarial labor relations instigated by radical left activists in the aftermath of the Second World War have gradually been replaced with cooperation, as labor unions have promoted cooperative arrangements and consultation with employers. In times of crises, labor related issues are typically resolved through negotiations between labor unions and employers. When there is the need to reduce the number of employees, labor unions and management enter into negotiations on the ways to achieve this objective. Before resorting to dismissal, the management typically prepares a voluntary retirement package, which includes appropriate compensation. According to the Hiring and Termination Survey (2012) conducted by the Japan Institute for Labor Policy and Training (JILPT), labor and management reached agreements in 84.1% of negotiations.[14]

Presently the main tasks of the labor unions include job security, increased wages, and improved working conditions, while they are less concerned with ideology and a wider role in society. The practice of pursuing negotiated solutions is the result of the deliberate efforts of labor and management to achieve the necessary reduction of labor cost while minimizing any sacrifices of employment and potential labor disputes. As a result, the number of strikes and labor disputes has steadily declined.[15] However, the membership of labor unions has also been in decline.[16]

4. Safety of employment

Strictly speaking, the long-term employment system is not really a "system" but a practice, since it is not based on any particular law, but on informal

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[13] T. ARAKI, Changing Employment Practices, Corporate Governance, and the Role of Labor Law in Japan, Comparative Labor Law and Policy Journal 28 (2007) 251, 261.

[14] K. SUGENO/K. YAMAKOSHI, Dismissals in Japan Part Two: How Frequently Do Employers Dismiss Employees?, Japan Labor Review 11:4 (2014) 121.

[15] H. NAKAKUBO, Industrial Action and Liability in Japan: A Legal Overview, Japan Labor Review 12:2 (2015) 86.

[16] H. FUJIMURA, Japan's Labor Unions: Past, Present, Future, Japan Labor Review 9:1 (2012) 6.

norms and tradition. Long-term employment does not mean a formal obligation on the part of the company not to dismiss its employees, nor does it mean that the company does not dismiss employees. Long-term employment should be understood in the sense that the company will not resort to layoffs unless it is in deep economic crisis, and layoffs are necessary to keep the company afloat and prevent bankruptcy.[17]

The legal framework that developed during the period around the creation of long-term employment was arguably based on the government policy that encouraged the long-term employment. Another important source of support was the Japanese courts. Despite statutory provisions that permit dismissal, in the 1950s the courts developed the doctrine of abusive dismissal, preventing employers from "abusing the right to dismiss", which gave employees strong protection against dismissal.[18] By relying on the abuse of rights doctrine, the courts held that dismissals that are not "objectively reasonable and socially appropriate" constitute abuse of right and are therefore void.[19]

A typical view of the Japanese courts (which clearly emphasizes the need to protect job security) is expressed in a Supreme Court judgment stating that "even when an employer exercises its right of dismissal, the dismissal will be void as an abuse of the right if it is not based on objectively reasonable grounds and cannot receive social approval as a proper act."[20] Courts have strictly construed this standard in favor of employees, even in cases where layoffs are motivated by economic necessity.[21]

The Japanese courts have traditionally been conservative in applying the abuse of right doctrine only "in exceptional cases where no other alternative could bring a fair solution of dispute."[22] It can be argued that the courts' reliance on the "abuse of right" principle in labor disputes has been an exception and can be attributed to judicial "activism" aimed at achieving social stabil-

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[17] L. WOLFF, The Death of Lifelong Employment in Japan?, in: Nottage/Wolff/Anderson (eds.), Corporate Governance in the 21st Century: Japan's Gradual Transformation (Cheltenham 2008) 53, 77.

[18] Nagoya District Court, 4 December 1951 *(Sube v. Kariya Seikatsu Kyodo Kumiai),* Rominshu 2-5, 578, 579, quoted in T. Fukui, Labor Management Relations and the Law 3-4 Law in Japan (1973); Tōkyō District Court, 8 May 1950 *(Iwata v. Tōkyō Seimei Hoken Sogo Gaisha),* Rominshu 1-2, 230, 235-36.

[19] Supreme Court, 31 January 1977 *(Shioda v. Kochi Hoso K.K.),* Rodo Hanrei 268 (1977) 17. Quoted in: G. P. MCALINN, Employment and Labor, in: McAllin (ed.), Japanese Business Law (Alphen aan den Rijn 2007) 403, 433.

[20] Supreme Court, 25 April 1975 *(Ichikawa v. Nihon Shouken Seizou),* Minshu 29, 456.

[21] H. NAKAKUBO, The 2003 Revision of the Labor Standards Law: Fixed-term Contracts, Dismissal and Discretionary-work Schemes, Japan Labor Review 1:2 (2004) 4, 14.

[22] K. SONO/Y. FUJIOKA, The Role of the Abuse of Right Doctrine in Japan, Louisiana Law Review35:5 (1975) 1037, 1044.

ity.[23] Another area where the courts have taken a similarly protective attitude is in the landlord-tenant area.[24] In both cases the courts have been most likely guided by the similar rationale of protecting a weaker party. On the other hand, the courts are less likely to resort to the use of "abuse of right" doctrine in civil law contracts, where the parties have relative freedom and opportunity to protect their interests by contract.

In a number of cases the courts have defined criteria that serve as the basis for assessing whether layoffs are appropriate.[25] For example, the Tōkyō District Court stated: "An employer may only validly discharge an employee in circumstances where there is just cause for the dismissal, based on the common sense of society […]."[26] The key phrases in this sentence are "the common sense of society" and "just cause"; their meaning is ultimately determined by the courts. The requirement of "just cause" is set at a high standard, so that it is be very difficult to satisfy it – "leading to a *de facto* system of permanent employment".[27]

Japanese courts have developed different standards for different types of dismissals. A distinction is made between economic dismissals (where the reason for dismissal is related to the company's financial hardship), and dismissals for personal reasons (where the reason for dismissal is related to the poor performance or behavior of a worker).

Where the termination of employment is based on the employer's economic reasons, the courts have taken a restrictive view in deciding what constitutes just cause. Economic dismissals must satisfy four requirements:

1. There must be an economic necessity to reduce the workforce to keep the employer in operation from a business standpoint. The courts tend to leave to the employer to decide the need for adjusting the number of employees, but will examine whether the reasoning used by employers is logically consistent;[28]
2. There must be good faith efforts by the employer to avoid dismissals. This may include measures such as reducing executive compensation, cutting work hours, wages, or bonuses, establishing a voluntary early retirement program, and so on;

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[23] D. FOOTE, Judicial Creation of Norms in Japanese Labor Law: Activism in the Service of Stability, UCLA Law Review 43 (1996) 635, 686.

[24] *Id.* 691. The Act on Land and Building Leases, 1991 has a positive requirement that the landlord has good reasons to terminate or refuse to renew a contract, which is not the case with dismissals.

[25] K. SUGENO, Japanese Labor and Employment Law (Durham, NC 2002) 480.

[26] Tōkyō District Court, *supra* note 18.

[27] MCALINN, *supra* note 19, 432.

[28] R. KAMBAYASHI, Dismissal Regulation in Japan, in: Hamada/Otsuka/Ranis/Togo (eds.) Miraculous Growth and Stagnation in Post-War Japan (Routledge 2011) 74.

3. The employer should base its decision on reasonable criteria in selecting employees to be discharged. This may include consideration of their salary, benefits, age and other factors; and
4. The employer must make reasonable efforts to explain and obtain the consent of the trade union or workers regarding the dismissals. The employees must have the situation sufficiently explained to them in advance.[29]

In cases of dismissal for personal reasons, the court decisions do not easily recognize the validity of dismissals merely on the basis of lack of skills, insufficient performance, inappropriate attitude, or lack of aptitude. Such decisions also make a careful judgment on issues such as whether these are severe in degree, whether opportunities for improvement were given, and whether there are any prospects of improvement.[30]

Disciplinary dismissal is more onerous to the worker than ordinary dismissal, because according to work rules of most companies a worker dismissed in this way will lose his or her retirement allowance; this amount can be quite large and its loss can have serious consequences for the worker and his or her family. Furthermore, such a worker will face serious difficulty in finding new employment. That is why the courts take a more rigorous approach when applying the abuse of right principle to disciplinary dismissal cases. Generally, a breach of work discipline must reach a level justifying removal from the labor relationship as a sanction, and it should be above the requirements for ordinary dismissal. Valid grounds for disciplinary dismissal may include various types of misconduct, such as neglect of duties, violation of a work order, violation of an employer's job-related orders, including transfer, overtime or holiday work orders, falsification of personal history, or delinquency in private life which harms the company's reputation. Japanese courts have often been hostile to those employees who disturbed the enterprise order.[31]

Terminating regular employees in Japan is always a difficult issue, because of the restrictive regulatory environment and the attitude of the courts. Despite new trends and the reduced certainty of long-term employment, the courts have maintained their restrictive attitude in interpreting "just cause" for the termination of employment.

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[29] NAKAKUBO, *supra* note 21, 14.

[30] *Shioda v. Kochi Hoso K.K.* (*supra* note 19) is the famous case involving a radio announcer at Kochi Broadcasting's news station who overslept and missed his radio news spot twice in two weeks, causing trouble to the radio program. As consequence, he was fired by the radio station. The Supreme Court found that the dismissal of was overly harsh and lacked social legitimacy, and that "the employer may not always discharge workers even when there exists a fact that constitutes reason for dismissal stipulated under work rules."

[31] In the *Hitachi Ltd.* case the court held that dismissal on the grounds of refusal of overtime was valid (Supreme Court, 28 November 1991, Rodo Hanrei 594 (1991) 7). In the *Toa Paint* case the court held that dismissal on the grounds of refusal to transfer to another city was valid (Supreme Court, 14 July 1986, Rodo Hanrei 477 (1986) 6).

With respect to employees on fixed-term contracts, the courts have followed the general attitude regarding long-term contracts. When a fixed-term contract has been repeatedly renewed, the employer's refusal to renew the contract for another term is considered a dismissal, because the employee had a reasonable expectation that the contract would be extended; in these cases, the employer must have a just cause for refusing to renew the contract.[32]

III. New Developments

Problems relating to the employment system came to the surface during the economic recession in Japan. After the crash of the bubble economy, the Japanese economic model has undergone significant changes. The main bank system has virtually disappeared and cross shareholdings have been reduced, while foreign shareholdings have been significantly increased. With regard to the employment system, it became evident that Japanese corporations could no longer maintain long-term employment and the seniority-based wage system.[33] Long-term employment and seniority made economic sense in the period of steady growth, but they are no longer sustainable when companies enter recession and over-employment becomes a serious problem. This creates a problem of finding positions for older employees, which in turn creates another problem relating to a reduction in the hiring of young employees, which is an essential element of the long-term employment system. Under such circumstances, traditional employment practices were transformed from an advantage into a burden that may contribute to the hardships and even the collapse of a firm.

The Japanese labor market has also been adversely affected by a number of demographic, macro-economic, and structural pressures, all of which have gradually changed traditional Japanese employment practices. These factors have forced many companies to revise their traditional employment practices.

1. Changes in the structure of employees

Faced with the strong protection against the dismissal of employees, when the number of redundant workers became a serious problem for many companies, the employment system had to develop functional flexibility in the internal labor market. Many companies resorted to a combination of various measures aimed at relieving companies from the pressures of economic hardship. Some

[32] The Supreme Court, 22 July 1974 *(Toshiba Yanagimachi Factory),* Minshu 28:5 (1974) 927; see also Supreme Court, 4 December 1986 *(Hirata v. Hitachi Medico Co.),* Rodo Hanrei 486 (1986) 6.

[33] T. ARAKI, A Comparative Analysis: Corporate Governance and Labor and Employment Relations in Japan, Comparative Labor Law and Policy Journal 22 (2000) 67, 92.

employers have transferred redundant employees to other sections in the same company, or to other related companies. Other employers have adjusted the terms and conditions of employment. Changes to working time and reducing overtime hours played a buffer role in time of hardship.

This internal flexibility was made possible by the practice of drafting employment contracts that do not specify the terms and conditions of employment, including the place and type of employment. Employers exploited this ambiguity by unilaterally making decisions relating to job rotation, the transfer of employees to other jobs within the company, temporary external transfers to other companies ("farming out"), and overtime assignments based on business necessity. The courts have recognized the discretion of employers with regard to this kind of decision.[34] The courts consider such flexible deployment of employees to be legal under certain conditions.[35] The courts typically rely on the reasonableness test by measuring the disadvantages to the worker caused by the changing of working conditions against the business necessity of making such decision. Such an approach can be considered correct in light of the fact that regular employees are not hired for specific jobs. They are valuable assets to be developed and utilized flexibly by the employer, as the "white cloth" metaphor suggests. This kind of interpretation has provided employers with flexibility in transferring redundant employees to other jobs where their services are more in need, thereby enhancing the efficient use of employees. This kind of internal mobility against the background of employment security represents a substitute for external mobility.[36]

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[34] FOOTE, *supra* note 23, 638, ARAKI, *supra* note 13, 256, MCALINN, *supra* note 19, 435; Supreme Court, 25 December 1968, *(Yoshikawa v. Shuhoku Bus Co.),* Minshu 22, 3459, Tōkyō District Court, 13 April 1995 *(Nagai v. Aerotransport (The Scandanavian Airlines Services)),* Hanrei Jiho 1526 (1995) 35, Supreme Court, 7 September 2000 *(Michinoku Ginko),* Minshu 54 (2000) 2075.

[35] The *Toa Paint* case (*supra* note 31) may serve as an illustration. In this case, a worker refused a relocation order to another city on account of family circumstances. Consequently, this worker was dismissed. The court held that both the relocation order and the dismissal were valid. An employer has the discretion to decide a worker's working location, in accordance with business necessity. The said transfer order would not constitute an abuse of rights unless there was no necessity on business grounds, or was ordered for other improper motives or objectives, or there were exceptional circumstances, such as that the worker was made to suffer a disadvantage markedly exceeding the degree that should normally be tolerated. The existence of necessity on business grounds should be endorsed, as long as elements that contribute to the reasonable operation of the company can be acknowledged, such as the correct deployment of the labor force, or enhancing the efficiency of work. The court held that necessity on business grounds existed in this case, and in consideration of the family situation, the disadvantage in family life caused by the transfer was deemed to be of a degree that should normally be tolerated in connection with transfers.

[36] T. ARAKI, Accommodating Terms and Conditions of Employment to Changing Circumstances: A Comparative Analysis of Quantitative and Qualitative Flexibility in the

Another widely used practice is the hiring of employees on fixed-term contracts. The employer can then decide not to renew the contract, with relative freedom.[37] The system of fixed-term employment played a crucial role in preserving long-term employment, because the existence of this non-regular workforce served as shock-absorber. It is common practice to terminate contracts of non-regular workers before dismissing regular workers. During an economic downturn a firm may simply decide not to renew the contract upon its expiry. The management needs freedom to adjust their workforce, and the employment of non-regular employees has provided such flexibility.

The main change in the employment system in the last two decades has been the increase in non-regular employees.[38] Various measures adopted by the employers resulted in substantial changes in the classification of employees. An employer may employ different types of employees, including regular employees, fixed-term employees, part-time employees, "dispatch" employees, and employees seconded from affiliated companies. The practice of reducing the number of regular employees without explicit layoffs allowed companies to argue that they preserved the long-term employment system. Despite such claims, most employees in Japan now feel less secure in their positions than before.

2. Changes in the wage and evaluation systems

In time of economic growth the seniority system was suitable for firms, which typically had a pyramid-like age structure of employees. However, this system is not compatible with the aging society, particularly in companies where the number of elderly workers surpasses that of young workers. In addition, it also adversely affects workforce mobility because it creates an incentive to block the entry of experienced employees from other companies.

Since the 1970s Japanese firms have been gradually revising the traditional practice of seniority-based promotion and remuneration with increasing im-

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United States, Germany and Japan, in: Engels/Weiss (eds.), Labour Law and Industrial Relations at the Turn of the Century, Liber Amicorum in Honour of Prof. Dr. Roger Blanpain (The Hague 1998) 509.

[37] The key characteristic of part-time employment in Japan is the fact that the employee is not a regular employee, regardless of the number of working hours. Part-time employees are often hired on the basis of a fixed term contract and they are disposable according to the fluctuation of business. The same is true of other fixed-term employees (often called *"kikan-jugyoin"* or *"keiyaku-shain"*), who may work full time but are certainly non-regular workers.

[38] According to the Ministry of Health, Labour and Welfare (MHLW) figures, there were 34.18 million regular employees in Japan at the end of 2007 (average for October–December), while non-regular employees numbered 17.38 million, or 33.7% of the total. See: <www.mhlw.go.jp>. The number of non-regular employees has continued to increase, and in 2013 it reached 36.7% (The White Paper on Labor and Economy, 2014).

portance been given to individual performance and ability. Many companies have established a system of grade classification *(shokuno shikaku),* under which the employees are classified based on their ability and performance. This system means that the evaluation of employees is made on the basis of individual business results and performance, which affects both the wages and promotion of employees. This was an attempt to overcome the traditional, seniority-based wages. Then, in the 1990s, many employers adopted a new system, called *"seikashugi",* based on performance standards; this is a result-oriented wage system, focusing on specific achievements rather than the potential ability of employees.

Presently most firms have introduced merit-based pay in the context of long-term employment.[39] However, there is a concern that the introduction of merit-based payment and promotion may adversely affect teamwork in the work place. Competition among the workers may lead to a reluctance on the part of senior employees to share knowledge with younger ones, whom they may see as competitors for promotion.[40]

Despite recent trends, the seniority-based system will probably continue to play a role as long as the company continues to be seen as a community, though some modifications may be made. The core issue is how to enhance employees' motivation by performance evaluation while avoiding possible adverse effects.

3. Recent trends in dismissal law

As a consequence of the recession that followed the burst bubble, in the 1990s many companies decided to lay off a large number of regular employees in the process of "restructuring" *(ristora).* In fact, in Japan this term has acquired a very different meaning from the original and is widely understood as meaning a reduction in the number of employees, rather than the reorganization of a company. In order to avoid the risk of litigation, the company would offer employees "voluntary" termination by promising generous retirement benefits and implying that the working conditions may worsen for those remaining in the company.

Possibly influenced by the high number of dismissals in the post-bubble period, some Japanese courts rendered decisions that deviated from well-established practice and interpretation of the rules governing economic dismissals. The Tōkyō District Court has rendered a number of decisions that allowed dismissals for economic reasons. In the *Westminster Bank* case, that

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[39] G. JACKSON, Employment Adjustment and Distributional Conflict, in: Aoki/ Jackson/Miyajima (eds.), Corporate Governance in Japan: Institutional Change and Organizational Diversity (Oxford 2007) 282, 298.

[40] For a detailed discussion on criticism of the merit system, see S. TATSUMICHI/ M. MORISHIMA, *Seikashugi* from an Employee Perspective, Japan Labor Review 4:2 (2007) 79.

court held that the evaluation of whether a dismissal is abusive must be based on all the circumstances in each case.[41] According to the court, the requirements that were previously adopted as the basis for such an evaluation do not represent requirements in the strict sense but merely factors that should be considered. The court held that layoff based on the employer's business judgment rule should be upheld, regardless of the existence or otherwise of a financial crisis. Hence, even if one of the factors is not met, the economic dismissal can still be held legally valid by taking other relevant factors into consideration, so that, in fact, the "four requirements" have been transformed into "four factors".

The Tōkyō District Court decisions failed to reverse the dominant attitude of the Japanese courts. Nevertheless, they may serve as an indication that the stance of the Japanese courts is not as firm as before and may change in the future. As the notion of long-term employment declines and labor mobility increases, the courts are becoming more willing to accept the employer's grounds for dismissal as valid. Sugeno and Yamakoshi argue that the dismissal law is neither too hard nor too soft on employers, raising doubts about the traditional view of the excessive protection employees have under the Japanese law.[42] A number of recent cases supports the argument of these highly regarded authors.[43] While this is in the domain of speculation (and as such it does not carry much weight), based on the reasoning of the courts in some recent cases, it is very likely that the cases such as *Kochi Hoso*,[44] if brought to the court now, would end very differently.

4. Legal reforms

The government has taken several actions to protect long-term employment. The Labor Standards Act (LSA) was revised in 2003 and the new revised law came into effect in 2004. This revision mainly affects fixed-term contracts, dismissals, and discretionary work schemes.[45]

In Japan, law reforms often follow case law, and this trend is confirmed by this revision of the LSA, which codified the case law on abusive dismissals.

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[41] Tōkyō District Court, 21 January 2000 *(Yasuda v. National Westminster Bank, Ltd.),* Rodo Hanrei 782 (2000) 23.

[42] K. SUGENO/K. YAMAKOSHI, Dismissals in Japan: How Strict Is Japanese Law on Employers?, Japan Labor Review 11:2 (2014) 83. The authors of this paper argue that Japanese law is not as strict regarding dismissals as it used to be.

[43] In the *Ono Lease* case (the Supreme Court, 25 May 2010) a worker with the status of manager was dismissed for having a poor work attitude, caused by a drinking problem that led to complaints by other workers and clients. The court held that the dismissal was valid because misconduct by the worker had disturbed the order of the workplace, and the prospects of the worker improving his attitude were poor.

[44] See *supra* note 19.

[45] See NAKAKUBO, *supra* note 21, 4.

One of the key provisions of this revision is Article 18-2, which reads: "A dismissal is invalid and the right to dismiss has been abused when it lacks objective, rational grounds and cannot be considered to be appropriate in general societal terms." This provision is clearly based on the "abuse of right" doctrine. In fact, it simply recognizes the existing case law based on this doctrine.[46]

In 2007 another important statute was enacted, the Labor Contract Act (LCA).[47] The main reason for enacting this statute was the rise in importance of individual labor contracts, as well as the increase in labor disputes. This statute fills the gap by specifically defining the principles governing labor relations (which were previously regulated by judicial precedent only), including the prohibition of the abusive exercise of the employers' rights. Article 18-2 of the revised LSA was incorporated into Article 16 of the new LCA 2007.[48] The law does not specify the meaning of the word "appropriate" (a word that can be interpreted in different ways), but leaves the interpretation and application of it in the hands of the judge.

The most recent amendment of the LCA came into effect on 1 April 2013. One of the most important changes relates to fixed term contracts that are renewed for successive periods. Article 19 has codified the doctrine on termination of employment that has been developed by the courts, in cases like *Toshiba Yanagimachi-Factory*.[49]

Another important development is that under the revised law, a fixed-term employment contract can be transformed into a contract with an indefinite term at the request of the employee, provided that the contract has been renewed without interruption for the period of longer than five years. Japanese companies could increase flexibility by initially hiring employees on the basis of fixed contracts of up to three years (in some cases five years).[50] Amendments to the LCA offer all fixed-term employees who have been employed for the period of at least five years the opportunity to apply for an indefinite employment contract (Article 18). In that case, the employer could terminate such an employment contract only under the criteria for termination of a permanent employment contract. In fact, employers are given a choice: they can either continue to employ the worker by offering a permanent position, or terminate employment at the end of the contract period. By restricting the

[46] *Id.* p.14.

[47] <http://www.jil.go.jp/english/laws/index.html>.

[48] Text of Article 16 of the LCA is exactly same with former Article 18-2 of the LSA. There are various translations of this text in English, but the Japanese text is the same and no change was intended.

[49] *Supra* note 32.

[50] Article 14 of the LSA prohibits fixed-term contracts for periods longer than three years, or longer than five years for persons over 60 in highly specialized jobs.

ability of employers to employ workers by renewing fixed-term contracts, the new law may be able to prevent the abuse of fixed-term contracts.

Article 18 of the LCA 2013 is a controversial measure in the Japanese context. Fixed-term employees will not become fully-fledged regular employees even after their contract has been turned into one for an indefinite period. While their situation might have been improved to an intermediate status, the employer may simply replace these workers after their five year contract; in this way the employer can circumvent the risk of having to employ those workers on a permanent basis.

At the time of writing of this paper (July 2015) there is another reform under way: at the moment the Diet is discussing the revision of the Worker Dispatch Law. According to the proposal, the time limit for the use of dispatch workers will be abandoned, enabling employers to use dispatch workers for as long as they wish. This proposal has been criticized by labor unions as against the interests of this type of employees, depriving them of a chance to become regular employees.[51]

IV. Impact of Abenomics on Employment Policy

The Japanese government is trying to revitalize its economy, and legal reform of the employment system is among the top priorities. The wave of reforms known as "Abenomics" relies on the "three arrows" strategy.[52] The first two arrows, relating to fiscal and monetary stimulus, were rather successful in hitting their targets. The third, aiming at structural reforms to the economic system, is widely considered to be the crucial part of Abenomics. Reforms of corporate governance and the employment system are among the top priorities.

In June 2013 the Japanese government unveiled its "third arrow" strategy, named "Japan Revitalization Strategy – Japan is Back".[53] An important part of this strategy aims at reforming the employment system. The objective of the employment system reforms is to enable a transition from the system of protection of employment towards a more liquid labor market with a workforce with greater mobility.[54] In order to promote workforce mobility the government considered shifting policies to support labor movement, includ-

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[51] "Statement Regarding Cabinet Approval of the Proposed Amendments to the Worker Dispatch Law": <http://www.jtuc-rengo.org/updates/index.cgi?mode=view&no=360&dir=2015/03>.

[52] "Three arrows" strategy borrowed the image from a popular Japanese folk tale that teaches that three sticks together are harder to break than one.

[53] <http://www.kantei.go.jp/jp/singi/keizaisaisei/pdf/en_saikou_jpn_hon.pdf>.

[54] Y. SHIMADA, Labor Mobility and Employment Policy, Japan Labor Review 12:2 (2015) 49.

ing support for ability development. Part of this policy is the support for already existing practices, including rewriting work rules and employment contracts to permit "varied types of regular employment."[55]

1. Special Economic Zones

One of the testing grounds for a new approach towards employment (de)regulation is (or more precisely – was supposed to be) the Special Economic Zone (SEZ). Being constrained by the existing labor law, the government was considering the creation of special zones where the labor law would not apply.[56] The main objectives were to make Japanese companies more competitive and to attract investors. As part of the implementation of this project, legislation was passed in December 2013; on the basis of this legislation six geographic areas were designated as special zones on 28 March 2014.[57] The original idea was to substantially relax dismissal law inside some of the special zones, so that if the employee and employer agree in advance on what would be valid causes for dismissals, the standard of "just cause" would not be relevant and such a dismissal would always be permitted. The idea was to grant employers greater flexibility regarding dismissals than in the rest of Japan. This is why this project has been dubbed the "Special Dismissal Zone" (*kaiko tokku*) by the media.[58]

Because of strong opposition, however, the Ministry of Health, Labour and Welfare (MHLW) scrapped Prime Minister Abe's proposal for special economic zones with their own employment rules. Minister Norihisa Tamura argued first that no civilized country has two sets of employment rules, and second, that easing employment regulations in limited areas runs counter to the Constitution's guarantee of equality before the law.[59] The proposal also came under criticism from opposition parties in the Fukuoka municipal assembly, which claimed that the proposal would "use and throw away our youth."[60] In an interview with the *Financial Times,* Prime Minister Abe eventually conceded that a relaxation of Japan's stringent job protections "would

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[55] S. NORTH, Limited Regular Employment and the Reform of Japan's Division of Labor, The Asia-Pacific Journal 12:15 (2014) 1.

[56] On the relationship between special zones and labor contracts, see S. NODA, *Koyō tokku to rōdō keiyaku* [Employment zones and labor contract] Horitsu Jiho 87 (2015) 48.

[57] Designated cities include the Tōkyō and Osaka metropolitan areas, Okinawa prefecture, Fukuoka, Yabu and Nigata cities.

[58] H. OKUNIKI, The Special Dismissal Zone: where legal protections no longer apply, Japan Times, 7 October 2013.

[59] *Senryaku tokku, kisei kuzusazu kōseishō 'koyō wa zenkoku ichiritsu* [No Regulatory Loosening in Strategic Economic Zones. Ministry of Health, Labour and Welfare Says Employment Rules Will Be Uniform] Nihon Keizai Shinbun, 19 October 2013.

[60] Y. MATSUO/J. YAMAZAKI, Japan's special zone scheme: Third time lucky? Nikkei Asian Review, 20 May 2014.

not be part of any forthcoming policy package."[61] Instead, only an advice center on employment issues named the "Employment Consultation Center" was set up in Fukuoka. The government undertook to issue special guidelines to clarify the legal rules relating to employment contracts, but they are not supposed to change the existing rules.[62]

The fact that a minister opposed and was able to block the policy of a prime minister may sound puzzling to outsiders. The outcome may be surprising for those who are not familiar with the process of adopting labor law legislation in Japan; for those who know how this process works, the outcome was expected. Under the existing administrative system, the issues relating to labor policy, including legislation drafts, are discussed by a tripartite advisory council (*shingikai*), established by the MHLW, which involves representatives of the labor unions and the employers, as well as independent experts; this represents an *institutionalized* form of participation of various interest groups. On the other hand, the Prime Minister relies on his advisory panels (that include business executives and academics) in implementing regulatory reforms with the principal objective being deregulation. Based on some statements of the parties involved, it can be concluded that there is tension between the Prime Minister and his advisory councils and the MHLW. It seems that Prime Minister Abe, via his special task force for deregulation, attempted to interfere and preempt the process that was under way in the MHLW, and the MHLW found the idea of relaxing dismissal law in SEZs particularly troubling.

Although there is no requirement for consensus in the advisory councils regarding new legislation, it is very rare for any legislation to go forward without such consensus.[63] The proposal for legislation that would allow relaxation of the requirements for dismissals was certainly not "any legislation", so the outcome of this story was easy to predict. While easing some of employment regulations in SEZs may be acceptable, offering a zone of "free dismissal" to attract new businesses was rather controversial, from both procedural and the substantive perspectives.

Notwithstanding the procedural reasons, Japanese bureaucracy has its own agenda, often guided, or at least justified, by moral principles and care for the good of the nation. It should be noted that the MHLW also administers welfare and efforts to boost the falling birthrate. The lower income and poor career prospects of these non-regular workers inhibit marriage, birthrates, and

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[61] Shinzo Abe warns of delay in key labour reforms in Japan: <http://www.ft.com/intl/cms/s/0/155852e6-2cf7-11e3-8281-00144feab7de.html#axzz2vTioBoYX>.

[62] As part of its activities, the Employment Consultation Center has published a booklet in English on Japanese labor laws: <http://fukuoka-ecc.jp/userdata/Key_Points_of_Labor_Related_Laws.pdf>.

[63] FOOTE, *supra* note 23, 706.

consumption. The National Fertility Survey demonstrates that the increased percentage of non-regular employees is related to marriage at an older age.[64] Relaxing the approach to dismissals in SEZs would be in clear contrast with the MHLW policy aimed at preventing the fertility rate from falling further; this might have been one of the reasons for the opposition to Prime Minister Abe's plans to relax the rules on dismissals in SEZ.

2. *Promotion of limited regular employment*

The traditional Japanese employment system provides only two options: regular workers and non-regular workers. They have a different status with regard to wages, promotion, pay rises, bonuses, severance pay, job security, company housing, health insurance, pensions, as well as social reputation. Non-regular workers are at a considerable disadvantage, even if they are doing the same work as regular workers. The employment security and better working conditions of regular workers are often sustained at the expense of non-regular workers as they can serve as buffer in economically hard times. On the other hand, regular employees also have no control over the scope or location of their work duties and they are obliged to accept future transfers to different workplaces, changes of job duties, and overtime. Current employment security relies on internal flexibility, which includes flexible adjustment of working conditions and flexible deployment of workers. Of course, this may impose various inconveniences on regular workers. Many regular workers may regard such inconveniences as unacceptable and may prefer conditions of employment that would allow them greater freedom, even at the expense of weaker guarantees in terms of their status.

In order to bridge the gap between regular and non-regular employees, one of the strategies in the Abe government's employment reforms is to promote the expansion of limited regular employment (*Gentei Seishain*) as a new type of employment contract. This is the proposal to formally introduce a new category of regular employees with weaker guarantees and fewer obligations. Common examples include employment limited by location (limited to one location, no transfers), by job (duties are limited), and by hours of work (no or low overtime). Employees under these contracts "would accept less employment protection than regular workers but would receive higher wages than non-regular workers."[65]

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[64] Attitudes toward Marriage and Family among Japanese Singles – The Fourteenth Japanese National Fertility Survey in 2010: <http://www.ipss.go.jp/site-ad/index_english/nfs14/Nfs14_Singles_Eng.pdf>; see also K. MIYOSHI, The Labor Market and Marriage Decisions in Japan, Japan Labor Review 11:4 (2014) 52.

[65] R.S. JONES/S. URASAWA, Labour Market Reforms in Japan to Improve Growth and Equity, OECD Report (2011) 18 available at: <http://www.oecd-ilibrary.org/economics/labour-market-reforms-in-japan-to-improve-growth-and-equity_5kg58z6p1v9q-en>.

One of the goals of this strategy is to create a more diversified labor framework. This is in the interest of employers, workers, and the nation, and is a way to simultaneously reduce employer costs, enable labor mobility, raise productivity, accommodate women's career aspirations, and promote a better work-life balance. The interests of employers often do not necessarily match those of workers. Limited types of regular employment may satisfy both sides. Long working hours are common among regular employees, and families with both parents working may have different needs: they may prefer less overtime and no job relocation, even if that means less job security.

Limited regular employment represents a middle way for regular and non-regular employees. It complements the changes in the labor market and offers a number of advantages for both employers and the non-regular employees. From the perspective of the employers, it would be easier to accept non-regular employees as limited type of regular employees, if they decide to change their status from irregular to regular employees. Through this type of employee, firms may reduce costs and achieve greater flexibility. From the perspective of non-regular employees, limited types of regular employment have obvious advantages, because the longer they remain in their non-regular jobs, the harder it becomes ever to get a regular one. For many women and older employees this type of employment may be even more attractive than regular employment, since they may not be prepared to accept all the duties which go together with unlimited and indefinite type of regular employment.

There are no legal constraints in implementing the limited type of regular employment. In fact, many larger firms have already introduced some form of limited regular employment. According to a report by MHLW, around 50% of larger companies with 300 or more employees have adopted some type of restricted regular employment, and about 40% of these employees are regular employees with a restricted place of employment.[66]

The model is seen as a path to a greater flexibility in the labor market which may also open new opportunities by offering employees a wider spectrum of choice. This may lead to an improvement in the status of non-regular employees by encouraging their employment as restricted regular employees, but it may also lead to an easing of the regulations on dismissals. According to Shimada, while restricted regular employment would not be introduced in order to make dismissals easy, the way of applying the abuse of right principle to this category of employees would change.[67] There are concerns that this may also lead to a reduction in the employment protection of regular employees.[68]

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[66] Regular Employees under Diverse Formats, MHLW Report, April 2011.

[67] SHIMADA, *supra* note 54, 62.

[68] JONES/URASAWA, *supra* note 65, 18

V. Further Directions

Traditional employment practices were suitable for an expanding economy in which companies eagerly invested in the training of their employees. The advantages of the traditional employment practices have, however, been transforming into disadvantages in circumstances of falling economic growth and a rapidly aging population. The crucial question that Japan faces is how to establish a proper balance between the need to preserve social stability that long-term employment provides, and yet ensure flexibility in the labor market that can contribute to a more efficient economic model. This is a difficult choice. Failure to adopt bolder reforms may mean further economic decline, and adopting radical reforms may undermine the Japanese economic model and have serious social implications.[69]

1. Impact of demographic changes on labor

The situation becomes even more complex when the demography factor is added. The low marriage rate among non-regular workers accelerates Japan's demographic decline. That, in turn, amplifies economic strains, such as the shrinking number of workers to support the growing ranks of retirees. The aging and shrinking of the population may pose some of the greatest challenges for the modern Japan.

The labor market in Japan is undergoing a dramatic change under the pressure of the aging society and shrinking workforce. The population of the working-age group— defined as those between 15 and 64 years old — increased consistently during the post-war years, reaching its peak at 87.26 million in the 1995 population census. However, since then, it entered a period of decline and it has fallen to 81.73 million (according to the 2010 census) and is expected to fall below 80 million in 2013, 70 million in 2027, 50 million in 2051, and eventually drop to 44.18 million by 2060.[70] In the last several years the working age population has shrunk rapidly. In 2013, there were 1.2 million new entrants to the working-age population and 2.2 million retiring older workers. As a result, the workforce shrank by roughly 1 million people in 2013 alone.[71]

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[69] PEJOVIĆ, *supra* note 9, 73.

[70] National Institute of Population and Social Security Research, Population Projections for Japan (January 2012): 2011 to 2060: <http://www.ipss.go.jp/site-ad/index_english/esuikei/ppfj2012.pdf>.

[71] H. MIYAMOTO, Japan must work hard to solve labour crisis, East Asia Forum, 5 August 2014: <http://www.eastasiaforum.org/2014/08/05/japan-must-work-hard-to-solve-labour-crisis/>.

According to UN data, the working age population of Japan is projected to decline continuously from 87.2 million in 1995 to 57.1 million by 2050.[72] If Japan wishes to keep the size of population at the level registered in 2005, the country would need a net total of 17 million immigrants up to the year 2050, or an average of 381,000 immigrants per year between 2005 and 2050. By 2050, the immigrants and their descendants would total 22.5 million and comprise 17.7 per cent of the total population of the country.[73] The population decline is likely to create a serious workforce shortage.

Another serious issue relates to the sustainability of the pension system. Due to the long life expectancy and low fertility in Japan, the pyramid-like model is losing its shape. The ratio of working age persons to the elderly is predicted to fall from 2.8 in 2010 to 1.3 in 2060.[74] The impact of an aging society is clear: the future of the pension system in Japan does not seem bright, particularly for the young Japanese.

Although it is difficult to change the declining trend of Japan's working population, the labor shortage problem can be remedied by employing workers more efficiently. Possible remedies include creating better opportunities for the employment of older employees, foreigners and, particularly, women. Such changes may also require a greater diversification of the employment system, since different working profiles need different rules of employment.
One possible mechanism that could facilitate the greater participation of women in the workforce is limited-type regular employment.[75] There is an opinion that most limited regulars will be women, and that this category will constitute another form of indirect discrimination of women.[76] Despite such criticism, it is likely that many women would welcome this type of employment, and it can play an important role in reducing the shortage of labor. The most important factor, however, is what women really want, and not what others think they should want. Of course, women may wish different things, and that is why they should be offered various options.

2. Government policy

After the bubble burst in early 1990s, the government made efforts aimed at economic restructuring. One of main measures was to reduce the number of regulations on business activities. Deregulation activities have expanded to include some elements of the labor law.[77]

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[72] <http://www.un.org/esa/population/publications/migration/japan.pdf>.

[73] *Id.*

[74] <http://www.ipss.go.jp/site-ad/index_english/esuikei/ppfj2012.pdf>.

[75] SHIMADA, *supra* note 54, 57–58.

[76] See NORTH, *supra* note 55.

[77] S. NODA, *Kisei kanwa seisaku to rōdō keiyaku-ron* [Deregulation policies and labor contract theory] Horitsu Jiho 87:2 (2015) 4.

Reform of the employment system as a part of the structural reforms may not be easy.[78] The issue here is not just a matter of which option would be more economically efficient. The existing employment system has become an integral part of Japanese society. Its existence is not only tied to economic factors. That is why the eventual dissolution or possible changes to this system are not dependent only on economic considerations. The failure of the SEZs plans demonstrated the value the Japanese attach to the protection of employment, and the extent of opposition towards reforms aiming at a relaxation of dismissal standards.

The fact that long-term employment became deeply embedded in Japanese society increases its persistence and impedes reforms. Even though a more flexible labor market might contribute to the better economic performance of firms, the social constraints present a serious hindrance. At this stage, the government may not be prepared to take the risk of undertaking radical reforms that could undermine the existing employment system. Instead, it is more likely to see some reforms of limited scope aimed at adjusting to the new developments in the economy and the demography.

The government was active in trying to remedy demography related problems. It took action in different areas to promote the more efficient use of older employees and women, and to create more possibilities for foreigners.

One of attempts to ensure that older people can continue to work after the retirement age of 60 is the revision of the Elderly Employment Stabilization Law, 2006. On the basis of this law, employers are obliged to introduce a system to continue employment up to the pension eligibility age. After receiving their lump-sum retirement allowance, the employees are rehired as a kind of non-regular employees.[79] The Elderly Employment Stabilization Law was amended in 2012 by imposing on employers a duty to employ all willing employees, on the condition that they are in good health.

With respect to foreigners, in 2012 the government adopted the policy of preferential immigration treatment for highly skilled foreign professionals.[80] Thus far the results have been below expectations. According to the Ministry of Justice, after the first 20 months of implementation, the government had issued a total of 900 visas to highly skilled professionals, averaging approximately 50 visas per month, which was far short of the target.[81] This government policy is

[78] "The thicket of reform", Economist, 16 November 2013: <www.economist.com/news/asia/21589876-though-appearing-committed-big-structural-cprime-minister>.

[79] See the annotation of the Supreme Court decision in the case *Tsuda Electric Metter Co. v. Okada,* International Labour Law Reports 33 (2014) 157–163.

[80] <http://www.immi-moj.go.jp/newimmiact_3/en/>.

[81] "Skilled Foreign Professionals not exactly Jumping at Japan's Offer of Perks", Nikkei Asian Review, 30 April 2014: <http://asia.nikkei.com/Politics-Economy/Policy-Politics/Skilled-foreign-professionals-not-exactly-jumping-at-Japans-offer-of-perks>.

certainly a positive move, but it is far from sufficient. In order to achieve the expected objectives, skills will have to be combined with numbers.

The most promising remedy for the problem of the shrinking workforce lies in greater participation of women. Prime Minister Abe has announced that his government will promote "womenomics" as a policy, making a number of promises aimed at giving women equal participation in the economy. The government pledged to help working mothers by increasing the number of nursing schools and extending maternity leave, which represents the step in good direction. Prime Minister Abe also pledged to appoint women to 30% of senior management positions in governmental agencies and encouraged Japanese corporations to have women in 30% of top managerial positions by 2020. However, it is highly unlikely that these targets can be reached (even within the government) and there are doubts regarding the actual effects of the Japanese version of "womenomics" in an employment system that "allocates productive roles to men and reproductive roles to women".[82]

The main obstacle to the greater participation of women in the workforce and their failure to climb to leadership positions are the implicit constraints imposed by the existing corporate culture and practices.[83] Until those invisible impediments change, the government's statements and gender-equality policies will have only a limited effect. As a matter of principle, gender equality should be treated as a universal right, rather than as a response to economic or demographic problems; without such an approach, real gender equality cannot be achieved despite the legal measures.[84]

3. Dismissal law may change?

Japan needs changes to its employment system. Firms need substantial flexibility when they perform poorly and sales of their products decline. As a matter of principle, employers should be allowed to increase or reduce their workforce in accordance with their needs. In order to adjust to changing circumstances, reduced internal flexibility must be compensated for through the relaxation of dismissal regulations. The traditional Japanese employment system relied on internal flexibility, supported by job security, and limited external flexibility. Under the new and different circumstances, a new balance between the two types of flexibility needs to be struck.

The tendency towards less-stable employment has not been accompanied with more flexible legal standards on termination. Currently, employers must overcome several high hurdles before they can dismiss an employee. While

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[82] H. MACNAUGHTAN, Womenomics for Japan: Is the Abe Policy for Gendered Employment Viable in an Era of Precarity?, Asia-Pacific Journal 13:1 (2015) 1.

[83] *Id.*

[84] S. ASSMANN, Gender Equality in Japan: The Equal Employment Opportunity Law, Asia-Pacific Journal 12:2 (2014) 1.

some erosion in long-term employment is likely, that erosion will probably be the result of economic pressures, rather than a change in the applicable legal standards. In principle, once firmly established, legal standards are not easy to revise, despite changes in the economic sphere. A change in legal standards is even more difficult when those standards are strongly entrenched in the existing public policy considerations.

While the substantial legislative changes in respect of relaxing dismissal conditions are unlikely to happen at the moment, changes in judicial attitudes are already visible. As layoffs and unemployment are not so exceptional anymore, courts have become less sympathetic to dismissed employees than before.[85] The vagueness of the existing standards relating to dismissals, which leaves a broad scope for interpretation, facilitated this change.[86] Courts may play a role in revising the law by giving a different interpretation of "common sense" and giving it different contents. The abusive dismissal theory, or the "just cause" standard, is flexible enough to allow interpretations that may fit the need for greater flexibility in the labor market, if necessary.

Deregulation policy aimed at the greater economic efficiency promoted by the government may also have an impact on judicial interpretation.[87] The change in the attitudes of the courts reveals the potential of change in dismissal law. This assertion finds support in the fact that the legal framework on dismissals originally was a product of case law, and only at a later stage did it become a part of statutory law.

The main issue is not necessarily that regulations regarding employee dismissal are too rigid. The more serious issue is that outcomes from dismissal cases are hard to predict. The courts have a wide discretion in determining what is to be considered "just cause", and that is where the problem of predictability lies. Sometimes it is very difficult to determine which dismissals would qualify as lawful and which would not. As long as 'just cause' is required for dismissal, it is inevitable that the outcome is hard to predict.

The latest development is the government proposal to make it possible for the court to terminate the employment relationship even when the dismissal in question was null and void, on the condition that the employer pays financial compensation to the employee *(kaiko no kinsen-kaiketsu).* This proposal is bound to lead to conflicting views from labor unions, which oppose this proposal, and employers, which would welcome it.[88]

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[85] SUGENO/YAMAKOSHI, *supra* note 42, 83. The authors of this paper argue that Japanese law is not as strict regarding dismissals as it used to be.

[86] JONES/URASAWA, *supra* note 65, 134.

[87] NODA, *supra* note 77, 6.

[88] *Futō kaiko no kinsen kaiketsu keiei to rōso de sanpi, kisei kaikaku kaigi tōshin* [Pros and cons of payment of financial compensation in case of the unfair dismissal, approval and disapproval of the management and labor unions, regulatory reform report] Sankei Shinbun 16 June 2015: <http://www.sankei.com/politics/news/150616/plt1506160039-n1.html>.

4. Back to the future?

While employers favor greater flexibility regarding dismissals, they may not support the increased mobility of workers. In fact, the low mobility of the workforce is partly the result of the attitudes of many Japanese companies, which, instead of encouraging the mobility of regular employees, have preferred to increase the number of non-regular employees in order to achieve greater flexibility. Many large firms have reduced the intake of new regular workers in favor of increasing numbers of fixed-term workers who can be laid off in times of crisis. By keeping the number of regular employees at a low level and by hiring non-regular employees in accordance with actual needs, the companies are able to maintain flexibility and avoid the burdens of over-employment. Some of the work previously assigned to regular employees were shifted to non-regular ones.

The increased reliance on non-regular workers also creates some problems for employers. Non-regular employees receive less in-job training meaning lower productivity for the firm. Taking into consideration that labor law prohibits discrimination relating to wages,[89] many firms may prefer to employ regular employees in the future. According to the Analysis of the Labor Economy 2013 prepared by the MHLW, the percentage of companies planning to increase the ratio of regular employees in the future exceeds the percentage of companies planning to increase the ratio of non-regular employees.[90] This may reflect a departure from the view that was present in the aftermath of the burst bubble, that the best route to flexibility is to rely on non-regular workers (which leads to a reduction of costs at the expense of quality of performance). Firms may consider that they have sufficiently reduced regular employees since the 1990s and that now it is the time to accept more regular employees in the light of the recent signs of economic recovery.

Another potential reason is that Japan is already facing a labor shortage and many companies have realized that they are running short of core employees from younger generations. As the number of regular employees has been reduced and they became older over time, it was logical to expect that at a certain point the companies would have to reconsider the continuing erosion of numbers of core employees. This MHLW analysis indicates that such a point may have been reached.

With regard to mobility, the mobility rate is not as low as widely believed. According to government statistics, the Japanese labor market has already

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[89] The amendment of the Part-Time Employment Act adopted in 2014 prohibits the discrimination of part-time employees in terms of wages, education and training when those employees perform duties which are same as those of regular employees and to whom the same personnel system applies.

[90] <http://www.mhlw.go.jp/english/wp/l-economy/2013/dl/01.pdf>.

achieved substantial mobility.[91] Reduced job security and increased mobility of the workforce may be signs of changes that are under way. Even if employers consider increasing the ratio of regular employees, this will not mean going back to the past.

VI. Conclusion

The Japanese economy faces serious challenges. Continuous economic decline and an aging population are only some of the problems that may affect its future. The challenges Japan is facing are universal: striking a proper balance between flexibility and security and reconciling the interests of employers and employees. The manner in which these challenges are dealt with differs from nation to nation.

Japan has been slow to make changes to its employment model. Long-term employment has not disappeared, despite some pessimistic predictions, but there are significant changes with respect to some elements of long-term employment practices. Many companies have resorted to reducing their core workforce and are relying more heavily on non-regular employees. The old model of "lifetime employment" continues to be eroded, causing many Japanese to be concerned for their jobs (especially those workers lacking the skills and education that are in high demand). The Japanese people are getting accustomed to living with the new reality where there is no strong guarantee of regular employment and there is an increasingly large force of part-time workers working on a contractual basis.

Japan needs a diversification of employment types that enables various combinations of internal and external flexibility while allowing individual choice. Finding the optimal balance, however, is not easy. The right of employers to reduce their workforce in times of economic hardship is in direct correlation with the performance of companies and the economic prosperity of a country. On the other hand, the dismissal of workers has its social effects. Particularly sensitive are economic dismissals on a large scale, because those dismissals are usually not a consequence of any wrongdoing on the part of the workers and may seriously affect the social stability of a country. At the moment social constraints pose a serious obstacle to drastic changes to the existing system. Although employment practices are said to be changing, there is still a widespread belief that it is only morally acceptable to resort to layoffs when the company faces economic hardships and the layoff is based on reasonable grounds.

[91] The Survey on Employment Trends conducted by MHLW shows that 6,730,000 workers left their employment during 2012, which represents 14.8% of the total workforce.

In order for real change to occur, there must be consensus in society that those traditional ways associated with long-term employment should be discontinued as outdated or unsuitable, and an agreement on the need to create a new way of doing things. Even if consensus on the need for change is reached, there will still be disagreements on the scope, pace and goals of the changes. Retreating from the original ambitious plans to relax dismissal rules in special zones is just an illustration of the lack of consensus, even within the government. Responses to Abenomics employment reform proposals reflect different feelings and visions about the direction of contemporary Japanese society, and the struggle to balance economic transformation with social fairness.

Despite the changes to the economic and social environment, the core features of the Japanese model will most likely not disappear in the foreseeable future. Instead, some reforms of limited scope can be expected, mainly aimed at adjusting to the new changes in economy and demography. The process of change should be a gradual evolution assisted by legal reforms, and adjusted to changing circumstances.

Whatever course is taken in the future, those reform policies will have to consider various factors. Japan needs a solution that preserves the social stability that was provided by the protection of employees, while achieving the flexibility in the labor market that can contribute to a more efficient economic model.

How Industrial Policy Affects the Nurturing of Innovation

From the Perspective of Intellectual Property Rights

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I. Laws and Governmental Activity Aimed at the Promotion of Innovation

1. Future innovation depends on past innovation

No innovation[1] can be achieved in isolation from past innovations. Every innovator is *standing on the shoulders of giants* as expressed by Isaac Newton in a 1676 letter. Assuming this, we can expect the generation of more and more innovation by increasing the occasions where the past innovations intersect with one another.

This empirical knowledge we have is endorsed by the existence of the numerous accumulated studies concerning the relationship between the social network and the birth or diffusion of innovation. *Coleman et al*. on "Medical Innovation: A Diffusion Study" (1966) is the milestone study of the impact of social networks on the diffusion of innovation (in their study, the diffusion of the use of a newly developed medical drug among physicians), which has been followed by an ever increasing number of studies, some of which seek to discuss diffusion of information or innovation from the general or wider perspective,[2] and others which focus on a specific industry and/or geographical area.[3]

Modern patent laws require an innovation to be "non-obvious" in order to be patentable. Namely, an invention that could easily have been made by a person ordinarily skilled in the art of the invention is not patentable.[4] We can

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[1] Clearly, "innovation" is an ambiguous word with multiple meanings. The author does not try to define "innovation" here. However, the context in which the author discusses "innovation" is generally in line with the context in which Joseph Alois Schumpeter talked about "New Combination" in J.A. SCHUMPETER / R. OPIE, The Theory of Economic Development (Cambridge 1951).

[2] See e.g., H. ALDRICH / C. ZIMMER, Entrepreneurship through Social Networks, in: Sexton / Smilor (eds.), The Art and Science of Entrepreneurship (Ballinger 1986) 3–23, T.W. VALENTE, Network Models of the Diffusion of Innovations (New Jersey 1995), C. DEBRESSON / F. AMESSE, Networks of Innovators: A Review and Introduction to the Issue, Research Policy, 20:5 (1991) 363–379, M. GRANOVETTER, The Impact of Social Structure on Economic Outcomes, The Journal of Economic Perspectives 19:1 (2005) 33–50.

[3] See e.g., A. SAXENIAN, Regional Networks and the Resurgence of Silicon Valley, California Management Review 33:1 (1990) 89–112, P. ALMEIDA / B. KOGUT, The Exploration of Technological Diversity and the Geographic Localization of Innovation, Small Business Economics, 9:1 (1997) 21–31, Y. WATANABE, Collaborative Structure between Japanese High-tech Manufacturers and Consumers, Journal of Consumer Marketing 22:1 (2005) 25–34, H. WHITE, Scientific and Scholarly Networks, in: Scott / Carrington (eds.), The SAGE Handbook of Social Network Analysis (London 2014) 271–286.

[4] See e.g., Patent Act of Japan (*Tokkyoho*), Law No. 121/1959, as amended, English translation: the Ministry of Justice of Japan, available at <http://www.japanese lawtranslation.go.jp>: "Where, prior to the filing of the patent application, a person ordinarily skilled in the art of the invention would have been able to easily make the

reasonably deem that this requirement for "non-obviousness" or an "inventive step" is rooted in the understanding that every invention is created based on past inventions and knowledge, and that our patent laws award a patent only to the non-obvious inventions among all inventions. This requirement of patent law also coincides with our own empirical knowledge, i.e., that no innovation can be achieved in isolation from past innovations.

2. Future innovations occur at the intersection of past innovations

In light of our empirical knowledge outlined above, it would be reasonable for us to assume that no innovator can create a new idea, technology, work of authorship, etc. without depending on past innovations.

However, it is doubtful that only one past innovation can easily give birth to a new creation. Generally, a typical patent claim is comprised of a combination of known arts,[5] although something new is attached or found in the combination. If not, it would be extremely difficult for us to read and understand a patent claim. In a similar vein, a typical literary work is comprised of a combination of known words and phrases, although something unique is found in such combination. If not, it would be extremely difficult for us to read and understand novels, poems, etc. Even choreography is generally a combination of known compositions with new or unique combinations.[6] In light of our everyday experience, it would be easy to believe that most innovation, although not all, emerges by means of the intersection of multiple past innovations.

If so, by increasing the probability that the results of past innovations intersect with one another, we would be able to promote the occurrence of intersections of past innovations and, by this way, nurture future innovations,

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invention based on an invention prescribed in any of the items of the preceding paragraph, a patent shall not be granted for such an invention notwithstanding the preceding paragraph.", and Subsection (a) of 35 U.S.C. 103 "A patent may not be obtained although the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made."

[5] See e.g., M. SHISHIDO, Kouchigijyutu no Kumiawase to Shinposei [Combination of Elements of Prior Art and Inventive Step], Patent, 62:8 (2009) 48–52. Japan Institute of Invention and Innovation (<http://koueki.jiii.or.jp/index.html>) gives awards to excellent inventions every year. Looking at the patent claims of those awarded inventions (for the year of 2015, see <http://koueki.jiii.or.jp/hyosho/zenkoku/2015/zenkoku_jusho_ichiran.html>, and for the year of 2014, see <http://koueki.jiii.or.jp/hyosho/zenkoku/2014/zenkoku_jusho_ichiran.html>), almost all contain a combination of prior arts.

[6] See e.g., K. LAWS/A. SUGANO, Physics and the Art of Dance: Understanding Movement (2nd edn. New York 2008).

even though many other factors are related to the creation of a new innovation. Of course, however, the author admits that the discussion herein can disclose only limited aspects of an innovation ecosystem, because it is based on assumptions on assumptions, even though respective assumptions accord with our empirical knowledge.

3. How intellectual property rights restrict the transfer of the effects of a past innovation

Two major pathways convey the results of a past innovation to possible innovators. One is the dissemination of articles, patent publications, or informal communications including those made through Social Network Services (SNS) or weblogs describing or noting such innovation. Another is the dissemination of the products or services in which the relevant innovation is embodied. Assuming this, in order to widen the span of influence by means of the diffusion of the results of an innovation, both pathways are important.[7]

However, intellectual property laws ("IP laws") give the author or inventor of creative works or inventions (or, their assignees including their employers or contractors) rights ("IP rights") that can prevent others from disseminating services or products embodying such works or inventions. Among various IP rights, a patent right given to a certain innovation enables its owner to obstruct the dissemination of the products and services to which said innovation (i.e., the patented invention) is embodied. A copyright given to a literal, graphic, photographic, or similar work, which describes a certain innovation, enables its owner to prevent the dissemination of the reproduction of such works describing such innovation. A copyright given to a work such as a computer program to which an innovation is implemented enables its owner to obstruct the dissemination of the reproduction of such works. A legal protection given to a trade secret obstructs the dissemination of the information describing an innovation. In this way, IP rights have the power to inhibit the development of the paths that can convey the influence of innovations by means of the diffusion of the results of such innovations.

Obviously, the wider and quicker dissemination of new works of authorship or inventions embodied in products or services, as well as the incentivization of new creative activities, have traditionally been considered the goals of IP laws such as patent law and copyright law.[8]

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[7] For example, WATANABE, *supra* note 3, emphasizes the impact on innovation of mutual interaction between consumer products companies and ordinary consumers. Furthermore, practitioners, who are professional users of existing or conventional products or technology, may initiate an innovation in the course of trying to solve any weaknesses in such products or technology. This kind of innovation is pointed out by E. M. ROGERS, Diffusion of Innovations (5th edn. New York 2003) 153, by quoting E. VON HIPPEL, The Sources of Innovation (New York 1988).

Apparently, giving such rights to authors or inventors (or their assignees) conflicts with the first of the said goals of IP laws. Naturally, this conflict has provoked intense debate over the viability of IP laws.[9]

A study from the perspective of "Law and Economics" has pointed out that the impact of IP rights on increasing the supply by the right holder will finally reach its limit at a certain degree of strength of IP protection, and that

[8] See, e.g., F. GURRY, "Re-thinking the Role of Intellectual Property", speech given at the University of Melbourne, retrieved 22 August 2013 <http://www.wipo.int/export/sites/www/about-wipo/en/dgo/speeches/pdf/dg_speech_melbourne_2013.pdf>, and S. J. FRANKEL / M. KELLOGG, Bad Faith and Fair Use, Journal of the Copyright Society of the USA 60 (2012) 1–36 and the court cases quoted therein. People who are not involved in legal study or practice tend to emphasize only the latter goal. It is certainly a widely disseminated view that IP laws incentivize creators of new works or inventions by allowing them to gain financial profit (e.g., D. EASLEY / J. KLEINBERG, Networks, Crowds and Markets (New York 2010) 690–691). D.B. JUDD, Editorial "Open Innovation and Intellectual Property: Time for a Reboot?" Drug Discovery Today, 18:19-20 (2013) 907–909 states: "Although it is not widely recognized, patents were instigated to enhance innovation: for disclosing an invention that is novel and workable, the patent holder is granted a period of exclusivity from the time of filing. The publication of the patent enables others to use that information to enhance their ideas, and discoveries, in other words enabling 'open innovation'." This kind of popular view does not pay much attention to the impact of IP laws on the dissemination of "existing" (that is, already authored or invented) creations embodied in products or services. The creation of new works or inventions is, of course, one of the material processes of the dissemination thereof. However, IP laws provide no means to directly incentivize new creations. Rather, IP laws give the IP rights owner exclusive rights to monopolize the commercial distribution of products or services embodying already authored or invented creations. Therefore, IP laws directly motivate IP rights owners to invest in such commercial distribution by alleviating their uncertainty due to competition in the relevant market. However, the impact of IP laws on the promotion of innovation is apparently indirect and possibly limited. IP laws do not directly motivate authors or inventors to produce new works or inventions. IP laws simply give an economic incentive to creators to the extent that the creators themselves conduct the commercial distribution of products or services embodying their creation, or the commercial distributor of products or services provides economic interest to the creators through licenses, employment, etc.

[9] W.M. LANDES / R.A. POSNER, An Economic Analysis of Copyright Law, Journal of Legal Studies 18:2 (1989) 325–363 warn of the disadvantage of unnecessarily strong IP rights protection. J.E. STIGLITZ, Economics of the Public Sector (3rd edn. New York 2000) 344–347 also points out the negative aspects of IP rights. However, they do not implement the effects of a consumer network that is established and utilized by both competing suppliers of products and services embodying works of authorship or inventions. Moreover, the assumption of STIGLITZ (2000) does not necessarily reflect the reality, because it considers that IP rights warrant a monopoly for the rights owner. On the other hand, the author tries to implement the effects of a consumer network in the discussion herein, and also assumes that IP rights do not warrant giving a perfect monopoly to the rights owner. Businesses and governments sometimes argue for stronger IP rights protection or, conversely, argue to regulate the strength of IP rights, as typically found in the debates at WIPO (the World Intellectual Property Organization), negotiation for EPAs (Economic Partnership Agreements), or proposals for anti-patent troll legislation.

it is therefore harmful to strengthen IP protection beyond that point.[10] Criticisms of IP rights that emphasize their harm using anecdotal or empirical evidence, as well as being partly supported by economic reasoning, are common.[11] Practitioners and governments seek stronger protection for intellectual property, or conversely seek the expansion of free and fair use of technologies and cultural assets.[12]

However, legal studies have failed to answer two fundamental questions. The first question is under what conditions do IP rights promote a wider and quicker diffusion of new works of authorship or inventions embodied in products or services, and under what conditions do they hinder such diffusion? The second question is under what conditions do IP rights promote the wider and quicker diffusion of new products or services supplied by a new entrant by overcoming its disadvantage against the existing suppliers of similar, but not the latest, products or services, and under what conditions do they hinder such diffusion?

4. Trends emphasizing the role of diversity

It seems fashionable for governments to talk about innovation policy.[13]

Governments also often refer to the brilliant achievements of Silicon Valley or emphasize that they should learn from the experience of Silicon Valley.[14] Looking at their emphasis on the importance of diversity of human

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[10] See LANDES/POSNER, *supra* note 9.

[11] See e.g., J. BESSEN/M.J. MEURER, Patent Failure: How Judges, Bureaucrats, and Lawyers put Innovators at Risk (New Jersey 2008) and M. BOLDRIN/D.K. LEVINE, Against Intellectual Monopoly (London 2008).

[12] The typical debates can be seen in the litigation between the Authors Guild and Google (the latest decision is *Authors Guild v. Google, Inc.*, (2nd Cir. 2015) decided on 16 October 2015, which held that Google Books was a fair use), or the debates at WIPO regarding access to medical technologies and innovation: <www.wipo.int/freepublications/en/global.../628/wipo_pub_628.pdf>.

[13] The Cabinet Office of Japan has a website focusing on innovation policy <http://www.cao.go.jp/innovation/policy/link.html> which outlines Japanese innovation policies, as well as their counterparts of foreign states. Additionally, the Ministry of Economy, Trade and Industry of Japan published Research Regarding Innovation Policy for Sustainable Development *(Jizokukanou na Hatten no tame no Innovation ni kansuru Chosa)* in February 2014 (available at: <http://www.meti.go.jp/meti_lib/report/2014fy/E004005.pdf>).

[14] For example, see, MINISTRY OF ECONOMY, TRADE AND INDUSTRY OF JAPAN, The U.S. – Japan Innovation and Entrepreneurship Council, October 2012" <http://www.meti.go.jp/press/2012/10/20121025001/20121025001-6.pdf>; BARONESS NEVILLE-ROLFE, Vision for a digital single market, 25 February 2015, Digital Age conference, <https://www.gov.uk/government/speeches/vision-for-a-digital-single-market>; and SILICON SAXONY SILICON EUROPE, Cluster Alliance for European Micro-and Nanoelectronics

resources, technology and business (hereinafter, simply referred to as "diversity") in promoting the birth of innovations,[15] it raises the question – does diversity promote the birth of innovations, and, if so, how can diversity promote the birth of innovations?

In order for governments to formulate their innovation policies (or even to decide whether they should establish any specific innovation policy), these questions should not be ignored. The following are some of the reasons why governments and their advisers should seriously consider these questions:

1) Governmental policies that promote diversity would be of no use or even counterproductive, if diversity does not nurture innovation;
2) Conversely, governmental policy should promote diversity, if diversity nurtures innovation. However, if we do not know how diversity nurtures innovation, it is almost impossible for us to design an effective or, at least, useful innovation policy;
3) Moreover, governments should also consider which kinds of policies are practical and which are not. For example, if the players in the industry prefer uniformity to diversity, governmental policy that promotes diversity may not be very productive ("You can lead a horse to water, but you can't make him drink."). On the other hand, if there is a substantial number of potential entrepreneurs with diverse directions, it makes sense for governments to nudge[16] certain entrepreneurs to enter the market through the provision of financial resources. For example, since its establishment in 2004, the Organization for Small & Medium Enterprises and Regional Innovation, Japan[17] has been funding privately held venture capital funds and buyout funds[18] by means of participating in such funds as one of its multi-

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Industry, 8 October 2012 <http://www.silicon-saxony.de/en/news/news-detail/article/clusterallianz-silicon-europe-will-position-der-mikro-und-nanoelektronik-staerken.html>.

[15] See e.g., MINISTRY OF ECONOMY, TRADE AND INDUSTRY OF JAPAN, "Winners of the FY2014 Diversity Management Selection 100" <http://www.meti.go.jp/english/press/2015/0318_01.html> and the United Kingdom DEPARTMENT FOR BUSINESS INNOVATION & SKILLS, BIS Workforce Information: Equality and Diversity, 2015 <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/400001/bis-15-83-equality-and-diversity-workforce-information.pdf>.

[16] See R.H. THALER / C.R. SUNSTEIN, Nudge: Improving Decisions about Health, Wealth, and Happiness (London 2009).

[17] *"Dokuritsu Gyosei Hojin Chusho Kigyo Kiban Seibi Kiko"* in Japanese. This is an incorporated administrative agency (*Dokuritsu Gyosei Hojin* in Japanese) established by the Act on the Organization for Small & Medium Enterprises and Regional Innovation (*Dokuritsu Gyosei Hojin Chusho Kigyo Kiban Seibi Kikoho,* Law No. 147/2002, as amended).

[18] Most Japanese venture capital funds and buyout funds are established as limited partnerships under the Act concerning Investment Limited Partnership Agreement (*Toshi Jigyo Yugen Sekinin Kumiai Keiyaku ni Kansuru Horitsu,* Law No. 90/1998, as amended), and as general partnerships under the Civil Code prior to the enactment of the said law.

ple limited partners.[19] This method does not directly specify the type of ventures or their businesses. The choice of which ventures should receive investment is at the discretion of the fund managers of those privately held funds. The Organization merely encourages private fund managers to establish venture capital funds and invest in ventures. According to the report by the Organization, from this intentionally modest means, 18% of the ventures backed by one or more of the investment funds to which the Organization participated as a limited partner achieved IPOs during the ten-year period ending on 31 March 2015.[20]

Sections II and III below discuss the viability of IP law in promoting diffusion of innovation, because IP law is generally deemed as one of the typical means employed by governments in the course of their innovation policy. In discussing this issue, it is suggested that the diversity of governmental policy itself is essential for promoting innovation in the industry.

II. Under what Conditions do IP Rights Promote a Wider and Quicker Diffusion of New Works of Authorship or Inventions Embodied in Products or Services?[21]

In this section, the author attempts to propose a model that can be used to answer the question above, by borrowing the basic context and concept of a social network analysis.[22]

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[19] Other limited partners are usually institutional or personal investors from the private sector.

[20] See the inspection report publicized by the Cabinet Secretariat of Japan on 16 July 2015: <http://www.cas.go.jp/jp/seisaku/fund_kkk/dai4/siryou1.pdf>.

[21] This part is largely based on S. TERAMOTO, *Chitekizaisanken no Hataraki o Mikiwameru Moderu o Tukuru Kokoromi* [A Trial to Prepare a Model to Verify the Viability of Intellectual Property Rights], in: Koizumi / Tamura (eds.), *Habataki-21seiki no Chiteki Zaisan: Nakayama Nobuhiro Sensei Koki Kinen Ronbunshū* [Habataki – Intellectual Property Law of the 21st Century: Essays in Honor of the 70th birthday of Professor Nobuhiro Nakayama] (Tokyo 2015) 52–75. The models introduced therein and also used here were prepared by improving (with some minor error corrections) the prototype reported by the author at Analisi delle Reti Sociali '13 (Social Network Analysis '13) held in Rome between 20 and 22 June 2013 with the title "Assessing the Role of Intellectual Property Laws from a Social Network Perspective". TERAMOTO presented a limited number of examples that are the products of experiments using the models. In this paper, the author has conducted multiple experiments for each model (10 times each) to support the suggestions derived from the models, this was originally published in the paper cited in this footnote.

[22] As to the basic concept of a social network analysis, see e.g., VALENTE, *supra* note 2, J. SCOTT / P.J. CARRINGTON, The SAGE Handbook of Social Network Analysis

1. Model

a) The basic concepts of the model

The author proposes developing a model to assess the viability of IP rights in diffusing new works of authorship or inventions embodied in products or services by deeming a market as a network comprised of actual or potential consumers and suppliers.

(1) Implementing the impact of a consumer network in the model

Conventional IP debates have not expended much labor or time in discussing the impact of a consumer network that may promote the successful reach of a supplier to consumers,[23] although they have not necessarily neglected the impact of consumer networks.[24] However, efforts of suppliers without consumer networks are not sufficient to promote the diffusion of products or services. Obviously, the development of consumer networks substantially affects the diffusion of information, products, services, etc.[25] Moreover, it is widely known that businesses invest a great deal of money and labor in developing consumer networks through advertisements, exhibitions, and other types of merchandising activities. These are the reasons why the impact of a consumer network must be implemented in a model that is used to assess the viability of IP rights in promoting the diffusion of products and services that embody new works of authorship or inventions.

Our everyday experience tells us that if a consumer purchases an iOS device (or, conversely, an Android device), not only will the probability that her friend will purchase an iOS device (or, conversely, an Android device) increase, but also the probability that her friend will alternatively purchase an Android device (or, conversely, an iOS device), is also likely to increase. It suggests that a supplier is able to make use of a consumer network even if that network (or, a part thereof) is developed by the efforts of its competing supplier.

Suppose that we employ a model in which a supplier cannot make use of a consumer network, at least a part of which is developed by its competing suppliers' efforts. Such a model is likely to emphasize the effect of IP rights of a supplier to cut off the connection between consumers and its competitors, while neglecting the probability that a supplier will make use of a consumer

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(London 2011), C. PRELL, Social Network Analysis: History, Theory & Methodology (London 2012), J. SCOTT, Social Network Analysis (3rd edn. London 2012).

[23] See e.g., LANDES / POSNER, *supra* note 9, P. DRAHOS, A Philosophy of Intellectual Property (Aldershot 1996), and S. SCOTCHMER, Innovation and Incentives (Cambridge 2004).

[24] See e.g., SCOTCHMER, *supra* note 23, at 289–318.

[25] See e.g., ROGERS, *supra* note 7.

network partly developed by its own competitors. Therefore, it is anticipated that a model that fails to implement the impact of a consumer network overestimates the impact of IP rights that would deter the diffusion of products or services by preventing the sale of products and services by competitors of the supplier owning and exercising IP rights.

The author hopes to avoid overestimating the disadvantage that may be caused by IP rights, by employing a model that incorporates the impact of a consumer network on the successful reach of suppliers to consumers.

(2) Correcting the implicit assumption of limited demand

Conventional arguments often try to justify IP laws by contending as follows:[26]

(i) IP rights grant the rights owner a monopoly in the market where the products or services embodying the copyrighted works or patented inventions are distributed;
(ii) this monopoly motivates the rights owners to enter the market and to disseminate the products or services embodying such works or inventions; and
(iii) in this way, IP rights promote the dissemination of creative works or inventions embodied in products or services, as well as investment in the creation of new works of authorship or inventions.

Such arguments assume that free competition is not likely to provide suppliers of products or services with a satisfactory profit, while a monopoly is likely to provide the monopolistic supplier with a satisfactory profit. Conventional IP debates have also tended implicitly to assume that one consumer purchases only one product from only one of the two or more competing suppliers.[27] There is no doubt that there are cases where this assumption is appropriate. For example, a word processor user has the tendency to use only one product, which has resulted in WordPerfect being almost driven out of the market by Microsoft Word.

However, obviously, this assumption does not apply to every market. Nowadays, for example, many consumers use Apple Keynote and Microsoft PowerPoint simultaneously.[28] Consumers who purchase multiple iOS and

[26] Y. J. TIAN, Re-thinking Intellectual Property: The Political Economy of Copyright Protection in the Digital Era (New York 2009) at 61–124 describes in detail the conventional approaches employed to discuss the goals and mechanisms of IP law. See also E. C. HETTINGER, Justifying Intellectual Property, Philosophy & Public Affairs, 18:1 (1989) 31–52.

[27] LANDES / POSNER, *supra* note 9, employs such model.

[28] The assumption "You have to decide whether to prepare your half of the slides in PowerPoint or in Apple's Keynote software", employed by D. EASLEY / J. KLEINBERG, Networks, Crowds and Market (New York 2010) at 151, to explain coordination games shows that we often use both pieces of software.

Android devices are one of the typical examples of the contemporary situation of the market where the conventional assumption is not necessarily applicable. A consumer may purchase only one iOS device or Android device. Another consumer may purchase multiple iOS devices, or multiple Android devices. Moreover, a mobile gadget enthusiast or a digital nomad may purchase multiple iOS and Android devices. This reality shows that, unlike the conventional and implicit assumption, multiple suppliers may sell competing products simultaneously to one consumer. However, in spite of the apparent defect in the conventional justification of IP laws, only partial or anecdotal criticisms have been raised.

If the relevant market can provide suppliers with demand that is hard to exhaust, the impact of IP rights on a supplier in promoting its sales by excluding its competitors from the market is expected to be smaller or even negligible in comparison to the case of a market with a limited amount of demand. On the other hand, even in such a market with demands that are hard to exhaust, a supplier may find an advantage in exercising IP rights to achieve a purpose other than simply gaining higher sales. In order to assess the plausibility of these assumptions, the author employs two types of model, one of a market that has a limited amount of demand, and the other with demand that is hard to exhaust.

b) Designing a model[29]

Models of diffusion of innovation have been developing continuously, while at the same time implementing the impact of the dynamic change of the structure of a social network.[30] It might be a smart idea to employ up-to-date models in order to experiment and examine the diffusion of new products or services through a society. However, a sophisticated model implementing the results of a regression analysis of reality may in itself implicitly implement the factors that may accelerate the diffusion (including, e.g., the impact of the merchandising activities of mutually competing suppliers which may accelerate the diffusion), or the factors that may deter diffusion (including, e.g., the impact of IP rights exercised by one or more suppliers).

However, IP rights give the owner exclusive power to prevent others from distributing products and services embodying the works or inventions pro-

[29] The codes in R language used for designing the models used here are available at: <https://archive.iii.kyushu-u.ac.jp/public/LZTwAAXI0U-At50BijxWKy8GxtHh7hvfS-85VIZKFeuT>.

[30] See e.g., F. M. BASS, A New Product Growth for Model Consumer Durables, Management Science, 15:5 (1969) 215–227, VALENTE, *supra* note 2, and T. W. VALENTE, Network Models and Methods for Studying the Diffusion of Innovations, in: Carrington / Scott / Wasserman (eds.), Models and Methods in Social Network Analysis (New York 2005) 98–116.

tected by such rights. The model of a market, which is employed to assess the viability of IP rights to promote the diffusion of products and services, has shed light on the role of commercial suppliers, distinguished from consumers or potential consumers. In order to design a simple model for experimentation, this thesis begins by employing a simple and primitive formula to represent the diffusion of products and services through a society, as shown in *Step 4*, below.

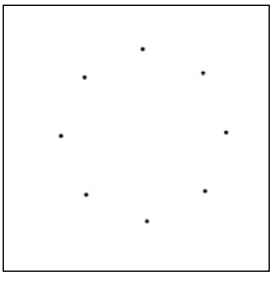
Step 1: Preparing the market

The model proposed here (hereinafter, *"Model1"*) tries to assess the viability of IP rights in promoting the diffusion of products and services embodying newly created works of authorship or inventions. If IP rights to protect such works or inventions are given to a supplier, it gains the power to exclude its competitors from the relevant market. Naturally, *Model1* is based on such a market (hereinafter, the *"Market"*).

A market is usually comprised of potentially competing suppliers and consumers (including potential consumers).[31] The suppliers distribute products and services embodying new works of authorship or inventions initially transmitted by the authors or inventors. Each of these actors (i.e., suppliers, consumers, and inventors or authors) can be deemed actors belonging to a certain social network. In order to denote these conditions of a market, a *Market* is defined as a network comprised of a certain number *("size")* of nodes (or, a *"size* x *size"* matrix) *(Figure 1).*

Figure 1: An example of a Market in the form of a matrix and a graph (size = 8)

	[,1]	[,2]	[,3]	[,4]	[,5]	[,6]	[,7]	[,8]
[1,]	0	0	0	0	0	0	0	0
[2,]	0	0	0	0	0	0	0	0
[3,]	0	0	0	0	0	0	0	0
[4,]	0	0	0	0	0	0	0	0
[5,]	0	0	0	0	0	0	0	0
[6,]	0	0	0	0	0	0	0	0
[7,]	0	0	0	0	0	0	0	0
[8,]	0	0	0	0	0	0	0	0



Step 2: Prearranging the default conditions of the market

Empirically, we know that the potential consumers, suppliers and the initial transmitter of newly created works of authorship or inventions (e.g., the author of literal or musical works, or the inventor of new technologies) are

[31] See e.g., N.G. MANKIW, Principles of Economics (6th edn. Mason 2012) at 66.

related to one another to a certain degree. This network possibly affects the diffusion of products and services distributed by the suppliers.[32] Since $Model_1$ tries to implement the impact of the consumer network, the *Market* must contain such a network from the beginning.

This network may take a great variety of forms. However, for the purpose of simplicity, each of the models starts from a regular graph. The default condition of the *Market* is defined by (a) *size*; (b) the degree of the regular graph *("vRegular");* and (c) one node arbitrarily chosen from all the nodes *("Origin"),* which represents the initial transmitter (the author or inventor) of newly created works of authorship or inventions (hereinafter, the *"new creation"*). A regular graph is also convenient for denoting the conditions in which nodes are directly or indirectly connected with each other, and the distances between respective nodes and the *Origin* have a wide variety of disparity.

In reality, a consumer network is likely to grow according to the passage of time, as we see in buzz marketing or communication through SNS. Such growth of a consumers' network may help or hinder the merchandising activities of suppliers. Moreover, suppliers often use advertisements on TV shows, newspapers, popular magazines, etc., in order to reduce the distance between potential consumers and the *Origin* or suppliers. The merchandising activities of suppliers can be considered to be targeted at the development of a consumer network. However, for the purpose of simplicity, $Model_1$ does not implement the dynamic development of a consumers' network, except for the establishment and cut-off of the edges connecting given suppliers and consumers.

The same IP laws are applied to a wide range of products and services. Some of the products and services may expect a dynamic development of a dense consumers' network, as well as a high degree of impact of such network on the diffusion of products and services. Mobile gadgets, web stores and prescription medicine[33] would be within the examples of such products and services. Others may expect a less dynamic development of a consumers' network and a lower degree of impact of such a network. In order to assess the viability of IP laws in promoting the diffusion under such varied conditions of the market, it would be reasonable to start with a model implementing the development of a consumers' network to the minimum degree possible.

Step 3: Nominating the first and second suppliers

In the *Market*, multiple suppliers (for the purpose of simplicity, $Model_1$ nominates only two mutually competing suppliers – the first moving supplier

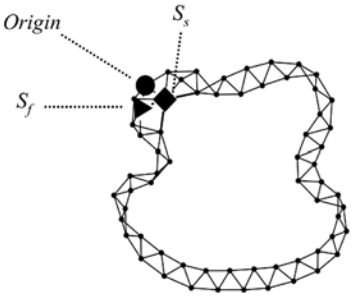
[32] See J.S. COLEMAN / E. KATZ / H. MENZEL, Medical Innovation: A Diffusion Study (Indianapolis 1966), and ROGERS, *supra* note 7.

[33] See COLEMAN / KATZ / MENZEL, *supra* note 32.

(hereinafter, *"S_f"*), and the following supplier (hereinafter, *"S_s"*)) sell their products or services implementing the *new creation* to consumers.[34]

It is easily presumed that such suppliers come from a location closer to the *Origin* than the majority of potential consumers.[35] For the purpose of simplicity, *$Model_1$* chooses two nodes arbitrarily from the nodes adjacent to the *Origin*, and nominates one of them as S_f and the other as S_s *(Figure 2)*.

Figure 2: Origin, S_f and S_s are nominated



In $Model_1$, a successful sale of one unit of products or services by S_f (or S_s) to a consumer is represented by the establishment of an edge between the node denoting S_f (or S_s) and another node denoting the said consumer. If S_f (or S_s) sells n units of products or services to one consumer, the number of edges connecting the node denoting S_f (or S_s) and another node denoting the said consumer becomes n.

Step 4: Prearranging the sales capabilities of suppliers

In reality, the probability of a supplier successfully reaching a consumer can be affected by many factors, including the access of the relevant consumer to the *new creation*; information about the products or services, the supplier, and previous purchasers of the products or services; the continuous access to the relevant information; the various ways to access the relevant information,

[34] Such consumers may also include the *Origin* and the other suppliers.

[35] For example, a pharmaceutical company (an example of a supplier) may often produce and distribute drugs developed by its employee researchers or contracted research or academic institute employees (an example of the *Origin*). Obviously, the distance between the pharmaceutical company and the inventor of new medicine is much shorter than the distance between the potential consumers (medical practitioners, patients, etc.) and such inventor or developer. A publishing company (an example of a supplier) may publish a book reproducing the work of an author contracted with the company (an example of the *Origin*). The distance between the publishing company and the author is much shorter than the distance between the ordinary readers of the book and the author.

and the feelings of the peers of the consumers. However, as our everyday experience informs us, the decision of a consumer to purchase products or services is, at least, based on information on the idea, technology, function, creative work, etc. embodied in such products or services. Moreover, the major merchandising activities of a supplier are invariably devoted to conveying such information to potential consumers through advertisements, commercial programs, websites, SNS, etc. In light of these considerations, even though *Model$_1$* tries to employ the simplest model possible, it cannot neglect the importance of the accessibility of potential consumers to the said information (or, in the context of *Model$_1$*, the *new creation*).

It is generally understood that a shorter distance between the transmitter and the receiver of information is likely to facilitate a better quality of communication.[36] Although the probability of a successful sale may be affected by various factors, it is obvious that any such distance has a significant impact on the probability of a successful sale of products or services. Certainly, suppliers always exert considerable efforts to provide consumers with a shorter path to enable them to access information about their products or services by advertising in magazines, newspapers, websites, etc. Moreover, it is a common phenomenon that after one consumer purchases a new product or service (e.g., a new mobile device), the probability that his/her friend will also purchase the same or a similar one increases.

In order to implement the said relationship between the probability of successful sales and distance in a simple, practical, and convenient manner, *Model$_1$* employs the concept of a time constant (τ) as follows:

- t*:* the distance between two nodes, one of which denotes the relevant potential consumer, and the other is the *Origin*.
- τ*:* a variable prefixed for each of the suppliers that is greater than zero.
- $P=e^{-\frac{t}{\tau}}$*:* the probability that an edge is established between the said node denoting the relevant potential consumer and the node denoting the relevant supplier.

In order to implement the said impact of the accessibility to consumers of the relevant information in a simplified manner, *Model$_1$* assumes that the probability of the successful sale of products or services by a supplier to a consumer gradually decreases according to the increase in the distance between the *Origin* and the node denoting the relevant consumer.[37]

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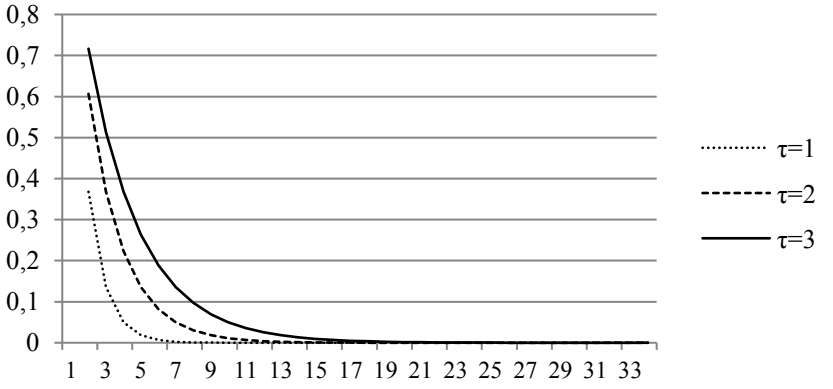
[36] See e.g., A. BAVELAS, Communication Patterns in Task-oriented Groups, Journal of the Acoustical Society of America 22:6 (1950) 725–730 and S. P. BORGATTI, Centrality and Network Flow, Social Networks, 27:1 (2005) 55–71.

[37] Because *Model$_1$* does not look at the distance between the respective suppliers and potential consumers, it cannot assess the impact of such distance on the diffusion of new products or services in the society. However, assuming that every supplier comes from a

These parameters for *Model1* approximately represent the relationship between the probability of a successful sale and the accessibility to consumers of the relevant information, even though the reality is certainly more complex. Moreover, the larger τ can represent the stronger sales capabilities, and the smaller τ can represent the weaker sales capabilities *(Figure 3)*. *Model1* prefixes certain values of τ (*"fτ"* and *"sτ"*) to represent the sales capabilities of S_f and S_s respectively.

Figure 3: The difference in the transition of P according to the value of τ



Model1 assumes that one consumer may purchase multiple products or services of the same kind. Accordingly, *Model1* permits multiple edges to be established between any combination of one node denoting a supplier and any of the other nodes. However, for the purpose of simplicity, *Model1* assumes that a supplier can send only one edge to each of the other nodes during each trial as explained in *Step 6*, below.

Step 5: Prefixing the strength of the IP rights

The IP rights given to a supplier give it the power to exclude the other suppliers from selling competing products or services to consumers. *Model1* represents the successful enforcement of S_f's (or S_s's) IP rights by the cut-off of the edges connecting S_s (or S_f) and other nodes. For the purpose of simplicity, *Model1* assumes that a successful enforcement of S_f's (or S_s's) IP rights against S_s's (or S_f's) sales of products or services to a certain consumer cuts off every edge connecting S_s (or, S_f) and the node denoting such consumer.

location much closer to the *Origin* compared with almost all of the potential consumers, it will be acceptable to employ only the distance between the *Origin* and potential consumers as a variable in order to prepare *Model1*.

Model$_1$ represents the strength of the IP rights given to a supplier by the probability (*"fForce"* for S_f, and *"sForce"* for S_s) that the edge(s) connecting the competing supplier and each of the other nodes are cut off.

Step 6: The Trials

At the respective trials, each of S_f and S_s tries to send edges to other nodes. The probability of the successful establishment of edges is regulated by the prearranged sales capabilities of the respective suppliers set out in *Step 4* above. If IP rights are given to either of the suppliers, such supplier tries to cut off the edge connecting its competing supplier and other nodes at each of the second and following trials. The probability that the edge(s) connecting S_s (or S_f) and each of the other nodes are cut off is regulated by *fForce* (or *sForce*), which denotes the strength of IP rights given to S_f (or S_s).

c) Parameters to assess the results of experiments on Model$_1$

The purpose of conducting experiments on *Model*$_1$ is to assess the viability of IP rights in promoting the diffusion of the *new creation* embodied in products or services distributed by suppliers. The degree of such diffusion can be approximately assessed by looking at, after each trial, a parameter that represents the gradual reduction in the degree of separation between the respective nodes and *Origin*. Among the basic and commonly used parameters, the author employs the *closeness centrality*, which is standardized by multiplying it by *"size - 1" (C'*$_c$*(i)):*

- $C'_c(i) = \frac{size - 1}{\sum_{j=1}^{size} d_{ij}}$
- $i = Origin$
- d_{ij} is the distance between node$_i$ and node$_j$.

The extreme form of diffusion of the *new creation* initially transmitted by *Origin* is represented by a graph in which every node is directly connected with either or both of the nodes denoting suppliers. Assuming the distance between *Origin* and both of the suppliers is d_s, the distance between *Origin* and each of the nodes that are neither *Origin*, *suppliers*, nor the nodes directly connected with *Origin* from the beginning is $d_s + 1$. Accordingly, if *size* is sufficiently large, the *closeness centrality* of *Origin* becomes very close to $\frac{1}{d_s+1}$ (if the suppliers are directly connected with *Origin* (or, $d_s = 1$), *0.5*).

In reality, individual suppliers may choose different parameters to assess their own performance (e.g., the sales proceeds by which growth may be achieved by an increase in the number of purchasers or even repeated sales to past purchasers, the number of purchasers, the share in the relevant market, the geographic location, class, or other attributes of purchasers, the diversity

in such attributes, or the growth of one or more of these indices). Therefore, it is not necessarily reasonable to employ a single parameter in order to assess the performance of S_f and S_s. However, various forms of achievement of a successful supplier, including the increase in the number of purchasers, the comparative advantage in the market share, and the growth of diversity in attributes of purchasers, are likely to increase the probability that the shortest path connects a pair of nodes. Moreover, the increase in this probability is likely to reduce the distance between the relevant supplier and the potential consumer who has not yet purchased the products or services. Further, any such reduction of distance is likely to increase the probability of the relevant supplier successfully reaching any such potential consumer. This is likely to warrant the supplier's successful "capture" of potential consumers of the subsequent or a wider range of products or services. Undoubtedly, Google and Apple are penetrating every aspect of our life by prominently increasing their *betweenness centrality* using Google's search engine, Gmail, and Android phones and tablets, or iTunes, iPods, iPhones or iPads. In consideration of such results, the author employed the *betweenness centrality* of a supplier ($C_b(i)$) in order to roughly assess the performance of a supplier.

– $C_b(i) = \sum_{i \neq j \neq k}^{size} \frac{g_{jk}(i)}{g_{jk}}$
– $i = S_f$ *or* S_s
– g_{jk} is the number of paths connecting $node_j$ and $node_k$
– $g_{jk}(i)$ is the numberw of paths connecting $node_j$ and $node_k$ via $node_i$

2. *Discussion using Model$_1$*[38]

a) Competition between suppliers, both with weak sales capabilities, in a market with limited demand

The first set of models employs the following set of variables to denote competition between suppliers with weak sales capabilities in a market with limited demand. The set of variables employed in this set of models is shown in *Table 1*.

[38] Each combination of variables produces a different result. Moreover, edges are generated and cut off with a probability given by the prearranged combination of variables. Accordingly, repeated trials using the identical combination of variables do not necessarily produce the same results. It must be noted that the nature of the following results is limited to examples that give us suggestions on how we assess the viability of IP rights in promoting the diffusion of *new creation* in the society. It would not be productive to be concerned about subtle differences between respective graphs. Rather, only a significant gap between the respective graphs should be noted.

Table 1: The set of variables employed in the set of models discussed in (a)

Set of variables	(i)	(ii)	(iii)
Conditions of the market	S_f conducts substantially no sales activities (for the purpose of comparison)	Neither S_f nor S_s enforces IP rights	S_f enforces IP rights
size	64	64	64
vRegular	4	4	4
cCapa	1	1	1
fDegree	1	1	1
sDegree	1	1	1
$f\tau$	0.001	1	1
$s\tau$	1	1	1
fForce	0	0	0.8
sForce	0	0	0
nTrial	200	200	200

cCapa = 1 means that each node receives up to only one edge from either S_f or S_s. This denotes that each consumer purchases only up to one unit of products or services. $f\tau = s\tau = 1$ denotes that both S_f and S_s have weak sales capabilities. $s\tau = 0.001$ denotes that S_s conducts substantially no sales activities in the relevant market. *nTrial* = 200 means a satisfactorily large number of trials, so that trials continue until after the *closeness centrality* of *Origin* reaches its ultimate value. *fForce* = 0.8 denotes that the enforcement of IP rights given to S_f cuts off the edges connecting S_s and each of the other nodes at the probability of *0.8*.

After repeating the same experiments ten times using the above-mentioned set of models, the examples of the development of the network of the *Market*, as well as the growth of the *closeness centrality* of *Origin* (*cenOrigin*) and growth of the *betweenness centrality* of S_f and S_s (*btwnSf* and *btwnSs*) are shown in *Figures 4, 5* and *6* for each condition of the market.[39] According to the results, the IP rights enforced by the supplier with weak sales capabilities against a supplier who also has weak sales capabilities does not cause a prominent difference in the growth of the *closeness centrality* of *Origin*. Especially, when compared with the experiments set out in (b) below, in which IP rights are enforced by the supplier who has weaker sales capabilities against a supplier who has stronger sales capabilities in a market with a limited amount of demand, or with the experiments, set out in (d) below, in which IP rights are enforced by the supplier who has weak sales capabilities against a supplier who also has weak sales capabilities in a market with growing demand. It is also

[39] The complete results of all the experiments discussed here are displayed separately and ready for download at <https://archive.iii.kyushu-u.ac.jp/public/QZiEAARIC4-AT9gBV6tWw1MKtJKw1LX6KM1kZn_v8gt4>.

suggested that free competition between suppliers is likely to restrict the growth of the *betweenness centrality* of a supplier, and thus limits the ultimate value thereof. It is possible that a supplier expecting much higher performance will exit the market, or even decide not to enter the market, which anticipates free competition between suppliers.

Figure 4: An example of the results of the experiments using the set of variables (i) of Table 1

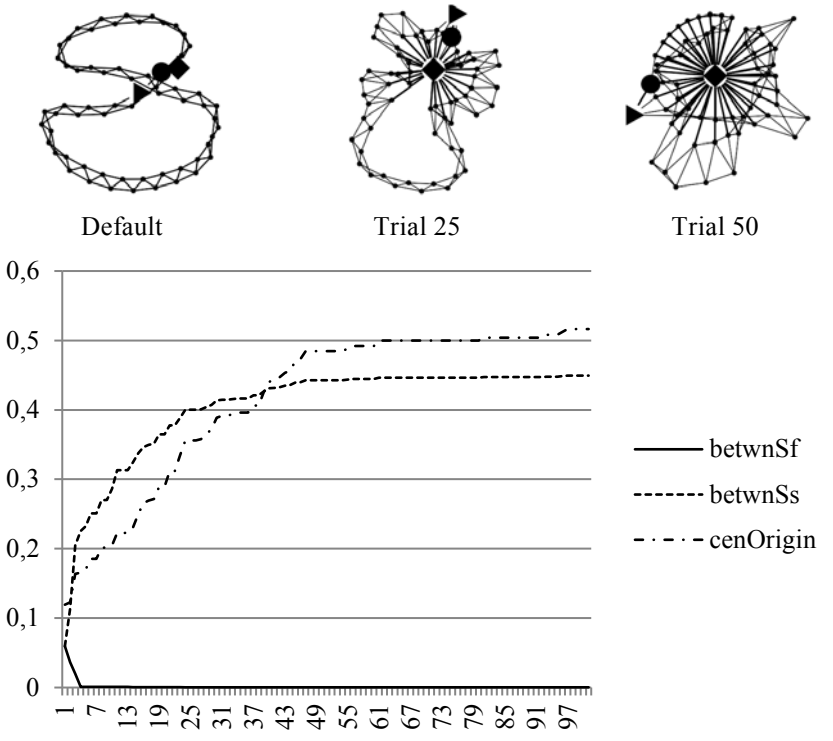
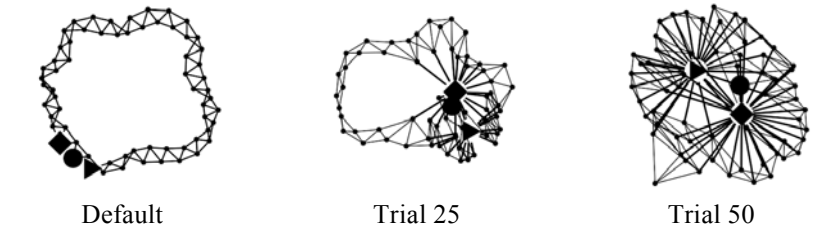


Figure 5: An example of the results of the experiments using the set of variables (ii) of Table 1



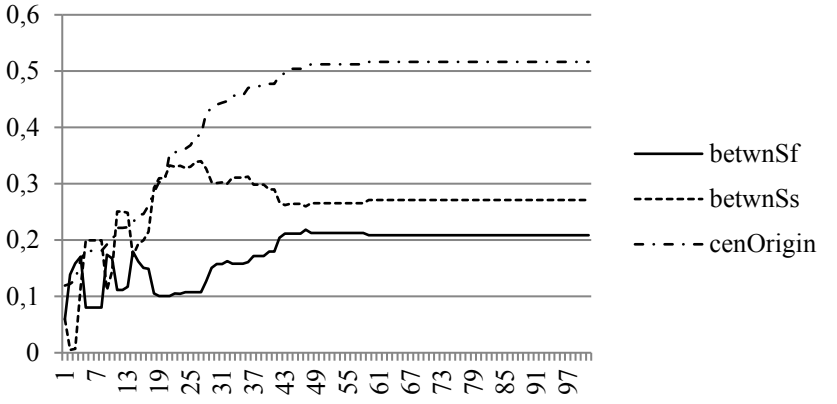
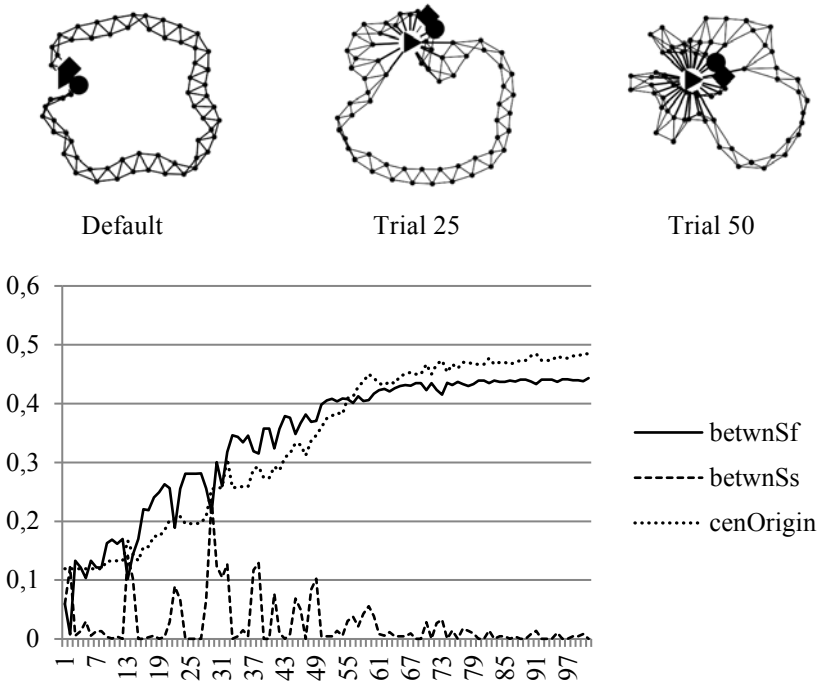


Figure 6: An example of the results of the experiments using the set of variables (iii) of Table 1



If both suppliers do not enter the market, or exit from the market at a very early stage, we cannot expect steady growth of diffusion of the *new creation* embodied in products or services. In light of this concern, giving IP rights to

either supplier potentially motivates that supplier to enter the market and continue its activities there. On the other hand, the disadvantage of IP rights, which can delay the diffusion, is not necessarily substantive in the relevant models. This example of models suggests that IP rights are possibly viable in promoting diffusion of the *new creation* embodied in products or services in the market of which conditions are similar to those of *Market* in this example.

b) Competition between a supplier with stronger sales capabilities and another supplier with weaker sales capabilities in a market with limited demand

The second set of models employ the following set of variables to denote competition between a supplier (S_f) with stronger sales capabilities and another supplier (S_s) with weaker sales capabilities in a market with a limited amount of demand.

Table 2: The set of variables employed in the set of models discussed in (b).

Set of variables	(i)	(ii)	(iii)	(iv)
Conditions of the market	S_f conducts substantially no sales activities (for the purpose of comparison)	Neither S_f nor S_s enforces IP rights	S_f enforces IP rights	S_s enforces IP rights
size	64	64	64	64
vRegular	4	4	4	4
cCapa	1	1	1	1
fDegree	1	1	1	1
sDegree	1	1	1	1
$f\tau$	0.001	2	2	2
$s\tau$	1	1	1	1
fForce	0	0	0.8	0
sForce	0	0	0	0.8
nTrial	200	200	200	200

$f\tau = 2$ and $s\tau = 1$ denotes that S_f has stronger sales capabilities and S_s has weaker sales capabilities. $sForce = 0.8$ denotes that the enforcement of IP rights given to S_s cuts off the edges connecting S_f and each of the other nodes at the probability of 0.8.

After 10 repeated experiments using the above-mentioned set of models, the examples of the development of the network of *Market*, as well as the growth of the *closeness centrality* of *Origin* and the growth of the *betweenness centrality* of S_f and S_s, are shown in *Figures 7, 8, 9* and *10* respectively for each condition of the market. According to the results, IP rights enforced by the supplier (S_f) with stronger sales capabilities against another supplier

(S_s) with weaker sales capabilities causes little difference in the growth of the *closeness centrality* of *Origin* compared from that in the case of free competition between suppliers. On the other hand, IP rights enforced by the supplier (S_s) with weaker sales capabilities against another supplier (S_f) with stronger sales capabilities causes a substantive delay in the growth of the *closeness centrality* of *Origin*.

Figure 7: An example of the results of the experiments using the set of variables (i) of Table 2

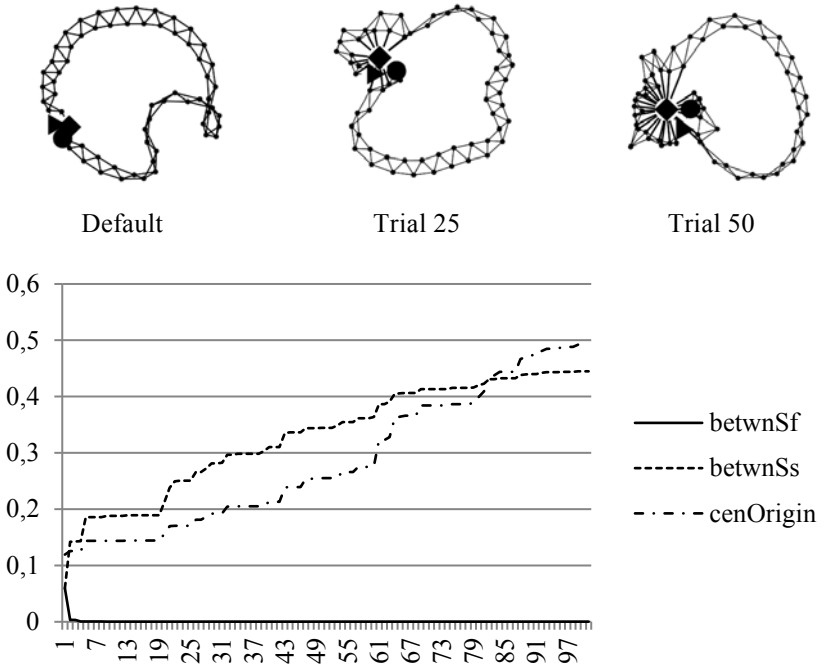


Figure 8: An example of the results of the experiments using the set of variables (ii) of Table 2

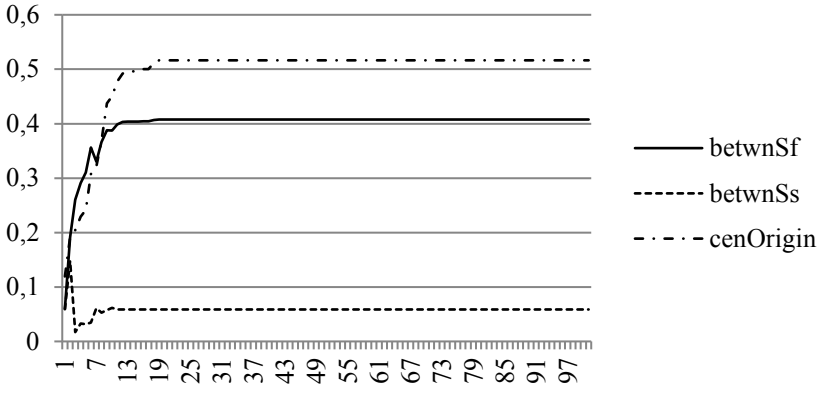


Figure 9: An example of the results of the experiments using the set of variables (iii) of Table 2

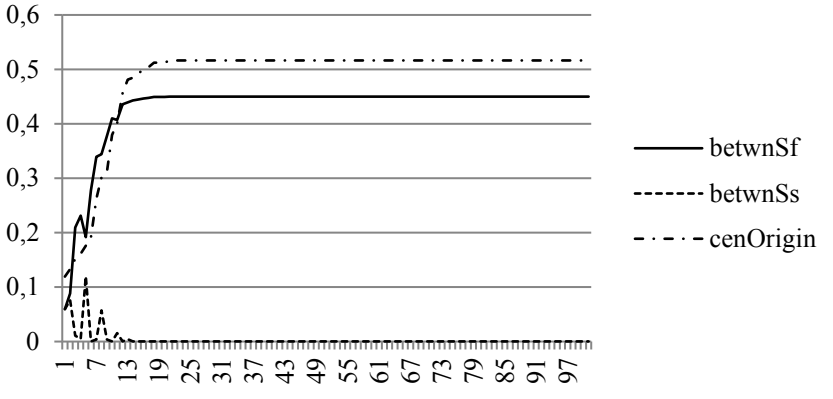
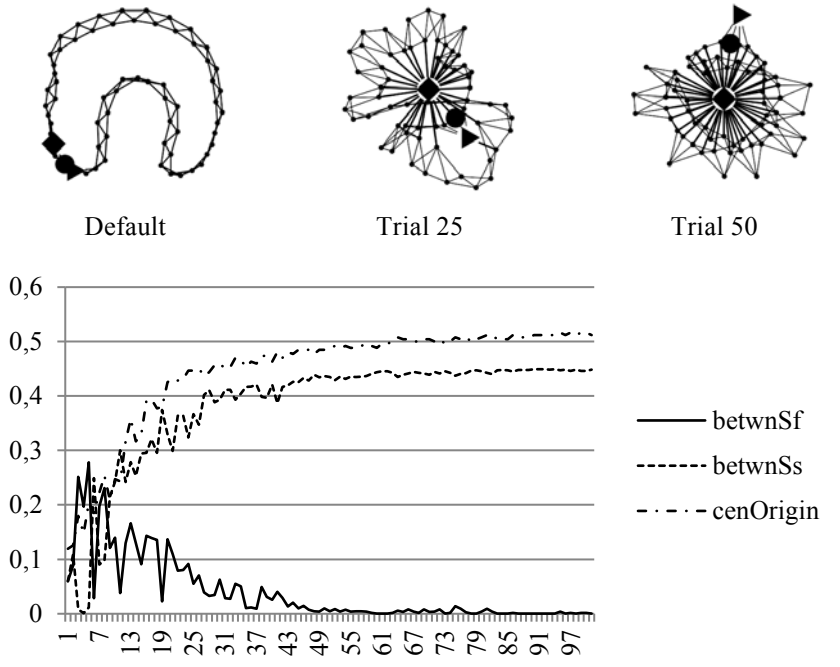


Figure 10: An example of the results of the experiments using the set of variables (iv) of Table 2



The difference in the growth of the *betweenness centrality* of S_f is not remarkable, regardless of whether or not IP rights are given to S_f. However, finally, the *betweenness centrality* of S_f converges to a comparatively higher ultimate value if IP rights are given to S_f, and to a comparatively lower ultimate value if IP rights are not given to S_f. However, the discrepancy between them is not necessarily significant.

These examples suggest that, under the conditions similar to those of this example, it is not necessarily manifest whether giving IP rights to a supplier with stronger sales capabilities motivates it to enter or continue activities in the market. However, giving IP rights to a supplier with stronger sales capabilities is not likely to deter the diffusion of new innovations embodied in products or services.

On the other hand, giving IP rights to a supplier with weaker sales capabilities is likely to substantially delay such diffusion. Presumably, the acquisition of technology ventures with weaker sales capabilities by mature companies with stronger sales capabilities is often considered reasonable in order to accelerate the diffusion of the technologies developed by ventures.

c) Competition between suppliers, both with strong sales capabilities, in a market with limited demand

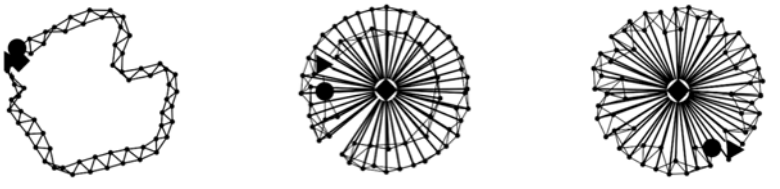
The third set of models employ the following set of variables to denote competition between suppliers, both with strong sales capabilities, in a market with limited demand. Here, $f\tau = s\tau = 2$ denotes that both S_f and S_s have strong sales capabilities.

Table 3: The set of variables employed in the set of models discussed in (c)

Set of variables	(i)	(ii)	(iii)
Conditions of the market	S_f conducts substantially no sales activities (for the purpose of comparison)	Neither S_f nor S_s enforces IP rights	S_f enforces IP rights
size	64	64	64
vRegular	4	4	4
cCapa	1	1	1
fDegree	1	1	1
sDegree	1	1	1
$f\tau$	0.001	2	2
$s\tau$	2	2	2
fForce	0	0	0.8
sForce	0	0	0
nTrial	200	200	200

After 10 repeated experiments using the above-mentioned set of models, the examples of the development of the network of *Market*, as well as the growth of the *closeness centrality* of *Origin* and the growth of the *betweenness centrality* of S_f and S_s, are shown in *Figures 11, 12* and *13* respectively for each condition of the market. According to the results, IP rights enforced by one supplier *(S_f)* with strong sales capabilities against another supplier *(S_s)* with also strong sales capabilities does not cause a significant delay in the growth of the *closeness centrality* of *Origin*.

Figure 11: An example of the results of the experiments using the set of variables (i) of Table 3



Default Trial 25 Trial 50

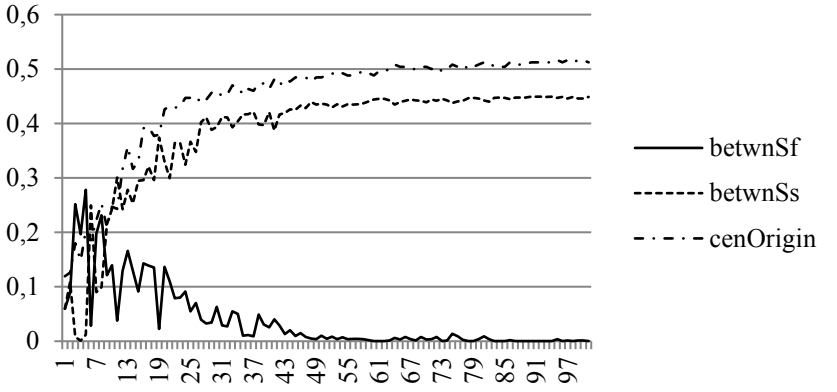


Figure 12: An example of the results of the experiments using the set of variables (ii) of Table 3

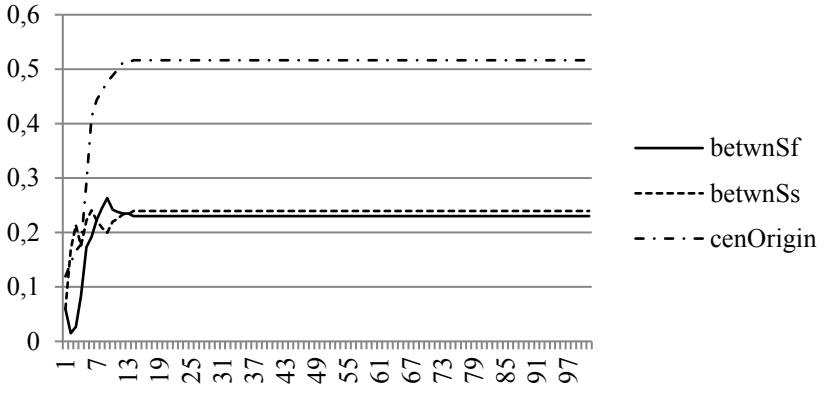
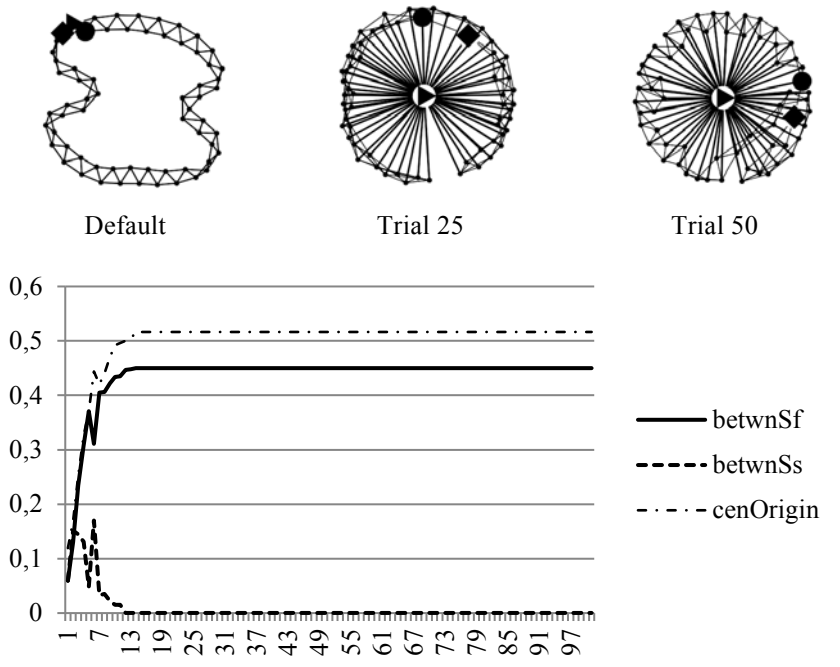


Figure 13: An example of the results of the experiments using the set of variables (iii) of Table 3



The *betweenness centrality* of S_f quickly reaches its ultimate value irrespective of whether or not IP rights are given to S_f, although the ultimate value thereof naturally becomes significantly higher if IP rights are given to S_f and, thereby, the edges connecting S_s and other nodes are cut off.

These examples suggest that, under the conditions denoted by these models, giving IP rights to either of the suppliers with strong sales capabilities is not likely to deter the diffusion of *new creation* embodied in products or services. Presumably, under the conditions contemplated by these models, IP rights are likely to encourage the supplier to enter or continue activities in the market.

d) Competition between suppliers, both with weak sales capabilities, in a market with growing demand

The fourth set of models employ the following set of variables to denote competition between suppliers, both with weak sales capabilities, in a market with growing demand:

Table 4: The set of variables employed in the set of models discussed in (d).

Set of variables	(i)	(ii)	(iii)
Conditions of the market	S_f conducts substantially no sales activities (for the purpose of comparison)	Neither S_f nor S_s enforces IP rights	S_f enforces IP rights
size	64	64	64
vRegular	4	4	4
cCapa	64	64	64
fDegree	1	1	1
sDegree	1	1	1
$f\tau$	0.001	1	1
$s\tau$	1	1	1
fForce	0	0	0.8
sForce	0	0	0
nTrial	200	200	200

cCapa = 64 means that each node receives up to *i* number of edges in total from S_f and S_s (*i* is an arbitrary chosen integer not less than *0* and not greater than *64*). This denotes the conditions in which demand continuously grows and saturates at a very late stage.

After 10 repeated experiments using the above-mentioned set of models, the examples of the development of the network of *Market*, as well as the growth of the *closeness centrality* of *Origin* and the growth of the *betweenness centrality* of S_f and S_s, are shown in *Figures 14, 15* and *16* respectively for each condition of the market. According to the results, the IP rights enforced by the supplier with weak sales capabilities against another supplier with also weak sales capabilities possibly causes a substantive delay in the growth of *closeness centrality* of *Origin.*

Figure 14: An example of the results of the experiments using the set of variables (i) of Table 4

Default Trial 25 Trial 50

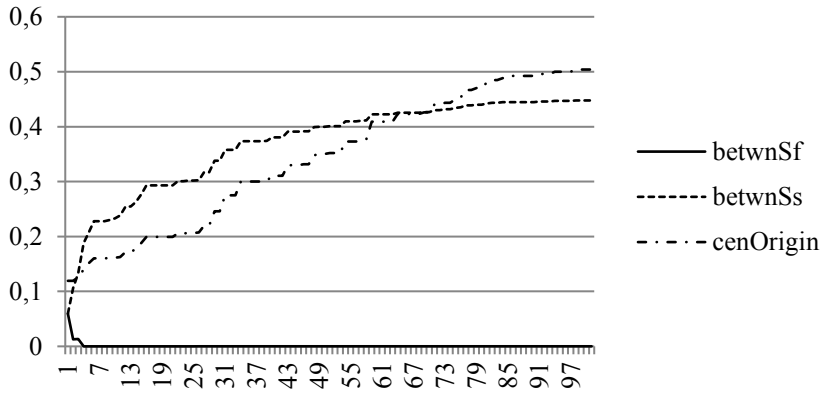


Figure 15: An example of the results of the experiments using the set of variables (ii) of Table 4

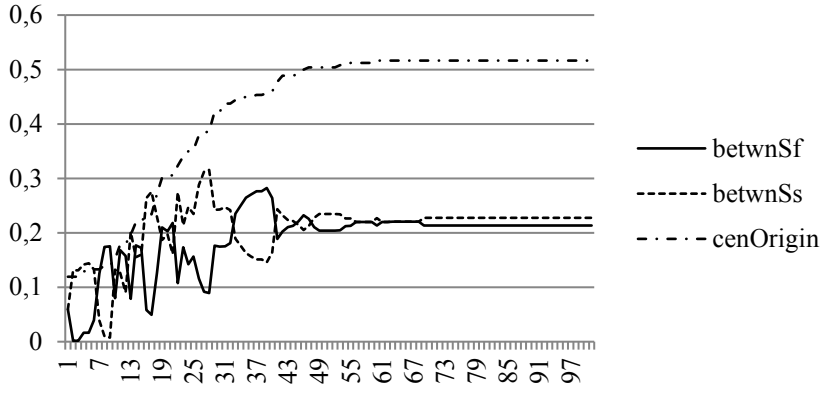
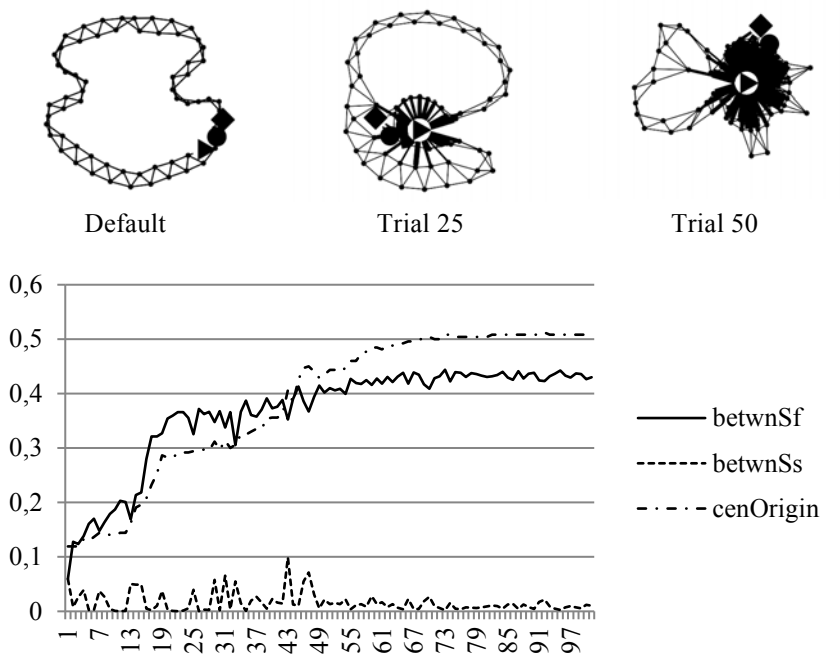


Figure 16: An example of the results of the experiments using the set of variables (iii) of Table 4



The difference in the growth of the *betweenness centrality* of S_f is not necessarily remarkable at the earlier stage, regardless of whether or not IP rights are given to S_f. However, finally, the *betweenness centrality* of S_f converges to the prominently higher ultimate value if IP rights are given to S_f, and to the lower ultimate value if IP rights are not given to S_f.

Presumably, under the conditions contemplated by this set of models, IP rights are likely to encourage the supplier to enter or continue activities in the market to the extent the supplier seeks higher *betweenness centrality*, which is likely to warrant the relevant supplier's successful reach to potential consumers of the subsequent or a wider range of products or services, rather than simply seeking greater sales performance. However, it should be noted that such IP rights might also cause a delay in the diffusion of *new creation* embodied in products or services.

e) Competition between a supplier with stronger sales capabilities and another supplier with weaker sales capabilities in a market with growing demand

The fifth set of models employ the following set of variables to denote competition between a supplier *(S_f)* with stronger sales capabilities and another supplier *(S_s)* with weaker sales capabilities in a market with growing demand:

Table 5: The set of variables employed in the set of models discussed in (e).

Set of variables	(i)	(ii)	(iii)	(iv)
Conditions of the market	S_f conducts substantially no sales activities (for the purpose of comparison)	Neither S_f nor S_s enforces IP rights	S_f enforces IP rights	S_s enforces IP rights
size	64	64	64	64
vRegular	4	4	4	4
cCapa	64	64	64	64
fDegree	1	1	1	1
sDegree	1	1	1	1
$f\tau$	0.001	2	2	2
$s\tau$	1	1	1	1
fForce	0	0	0.8	0
sForce	0	0	0	0.8
nTrial	200	200	200	200

After 10 repeated experiments using the above-mentioned set of models, the examples of the development of the network of *Market*, as well as the growth of the *closeness centrality* of *Origin* and the growth of the *betweenness centrality* of S_f and S_s, are shown in *Figures 17, 18, 19* and *20* respectively for each condition of the market. According to the results, IP rights enforced by the supplier *(S_f)* with stronger sales capabilities against another supplier *(S_s)* with weaker sales capabilities causes little difference in the growth of the *closeness centrality* of *Origin* compared with that in the case of free competition between suppliers. On the other hand, IP rights enforced by the supplier *(S_s)* with weaker sales capabilities against another supplier *(S_f)* with stronger sales capabilities causes a substantive delay in the growth of the *closeness centrality* of *Origin*.

Figure 17: An example of the results of the experiments using the set of variables (i) of Table 5

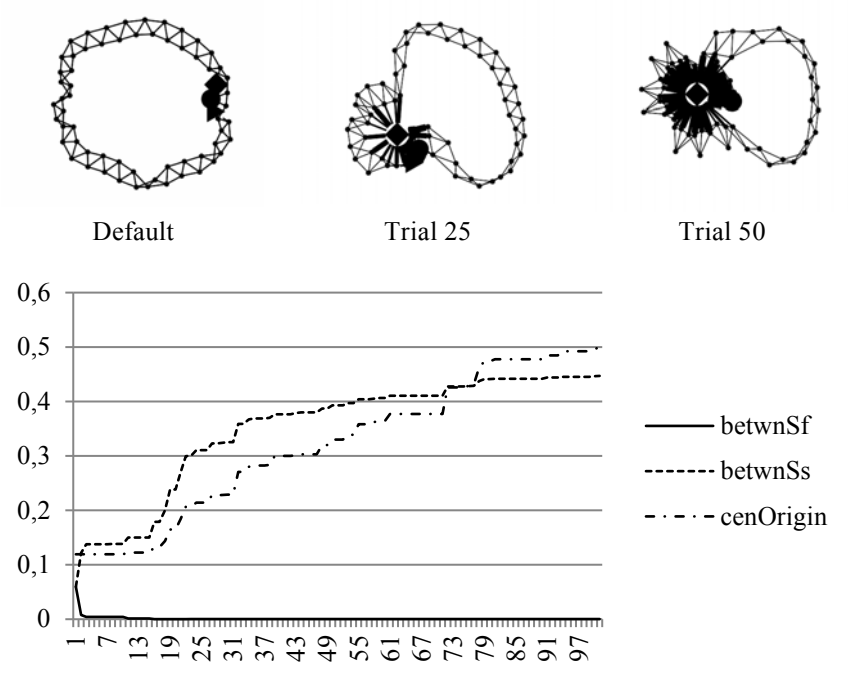


Figure 18: An example of the results of the experiments using the set of variables (ii) of Table 5

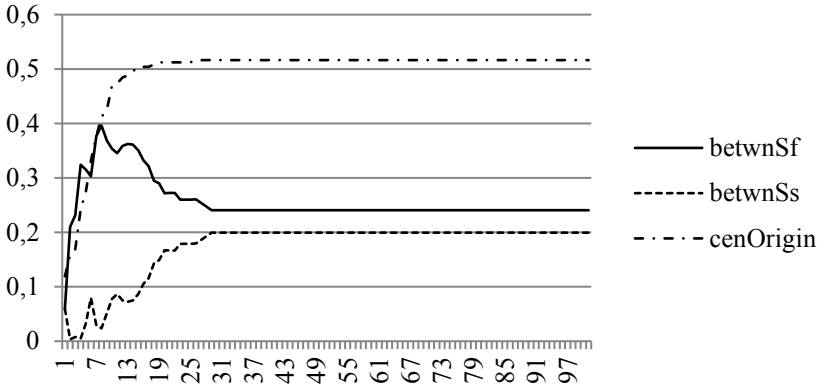


Figure 19: An example of the results of the experiments using the set of variables (iii) of Table 5

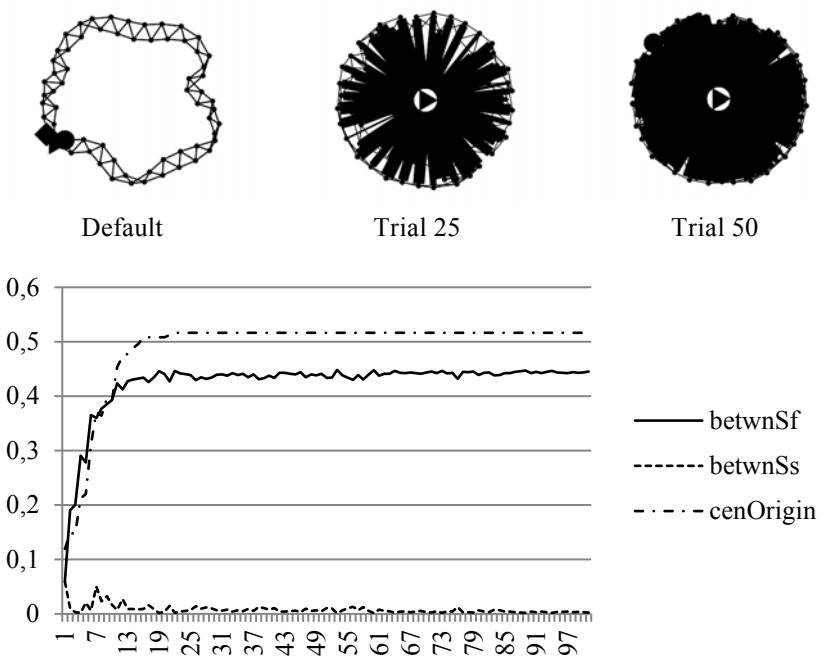
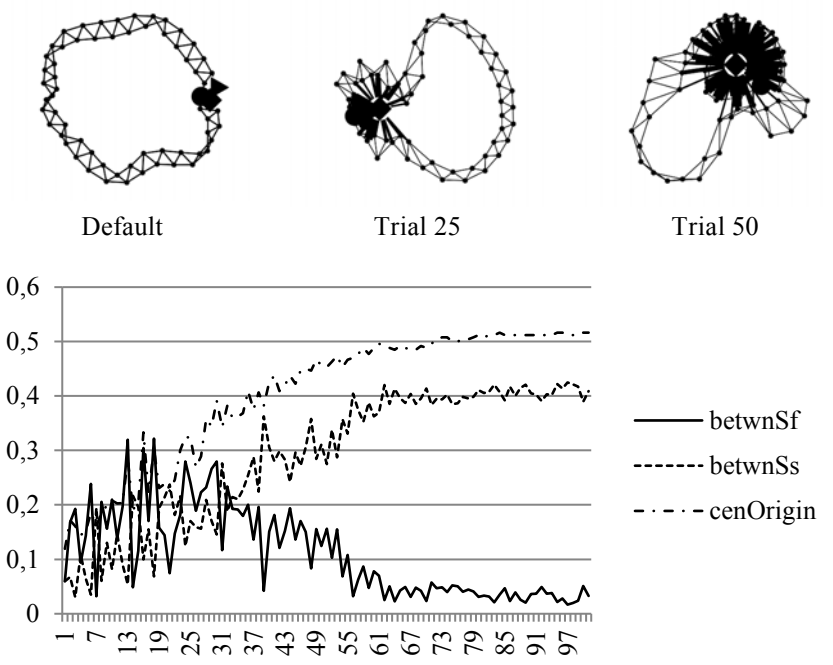


Figure 20: An example of the results of the experiments using the set of variables (iv) of Table 5



The difference in the growth of the *betweenness centrality* of S_f is not necessarily remarkable at the early stage irrespective of whether or not IP rights are given to S_f. However, finally, the *betweenness centrality* of S_f converges to the significantly higher ultimate value if IP rights are given to S_f, and to the lower ultimate value if IP rights are not given to S_f.

This example of models suggests that, under conditions similar to those of this example, IP rights are likely to motivate the supplier with stronger sales capabilities to enter or continue activities in the market to the extent the supplier seeks higher *betweenness centrality*, which is likely to warrant the relevant supplier's successful reach to potential consumers of the subsequent or a wider range of products or services, rather than simply seeking greater sales performance. Moreover, such IP rights are not likely to cause a substantive delay in the diffusion of *new creation* embodied in products and services.

On the other hand, giving IP rights to a supplier with weaker sales capabilities is likely to substantially delay such diffusion.

f) Competition between suppliers, both with strong sales capabilities, in a market with growing demand

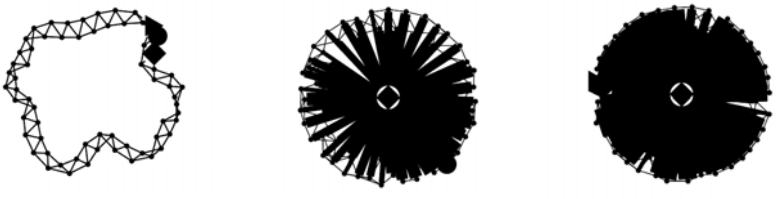
The sixth set of models employ the following set of variables to denote a competition between suppliers, both with stronger sales capabilities, in a market with growing demands:

Table 6: The set of variables employed in the set of models discussed in (c).

Set of variables	(i)	(ii)	(iii)
Conditions of the market	S_f conducts substantially no sales activities (for the purpose of comparison)	Neither S_f nor S_s enforces IP rights	S_f enforces IP rights
size	64	64	64
vRegular	4	4	4
cCapa	64	64	64
fDegree	1	1	1
sDegree	1	1	1
$f\tau$	0.001	2	2
$s\tau$	2	2	2
fForce	0	0	0.8
sForce	0	0	0
nTrial	200	200	200

After 10 repeated experiments using the above-mentioned set of models, the examples of the development of the network of *Market*, as well as the growth of the *closeness centrality* of *Origin* and the growth of the *betweenness centrality* of S_f and S_s, are shown in *Figures 21, 22* and *23* respectively for each condition of the market.

Figure 21: An example of the results of the experiments using the set of variables (i) of Table 6



Default Trial 25 Trial 50

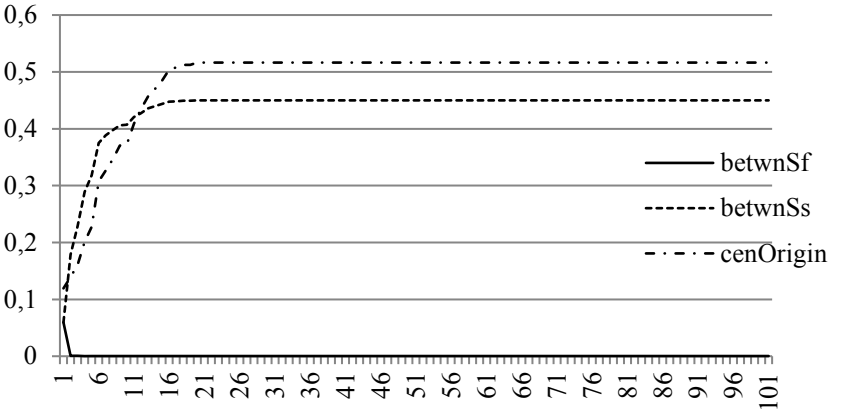


Figure 22: An example of the results of the experiments using the set of variables (ii) of Table 6

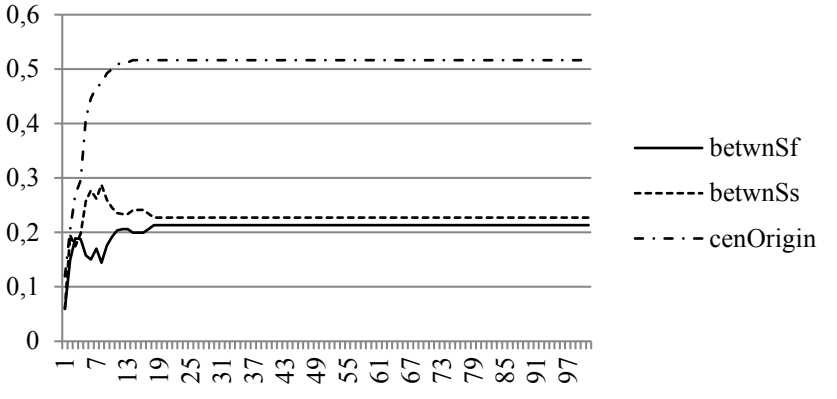
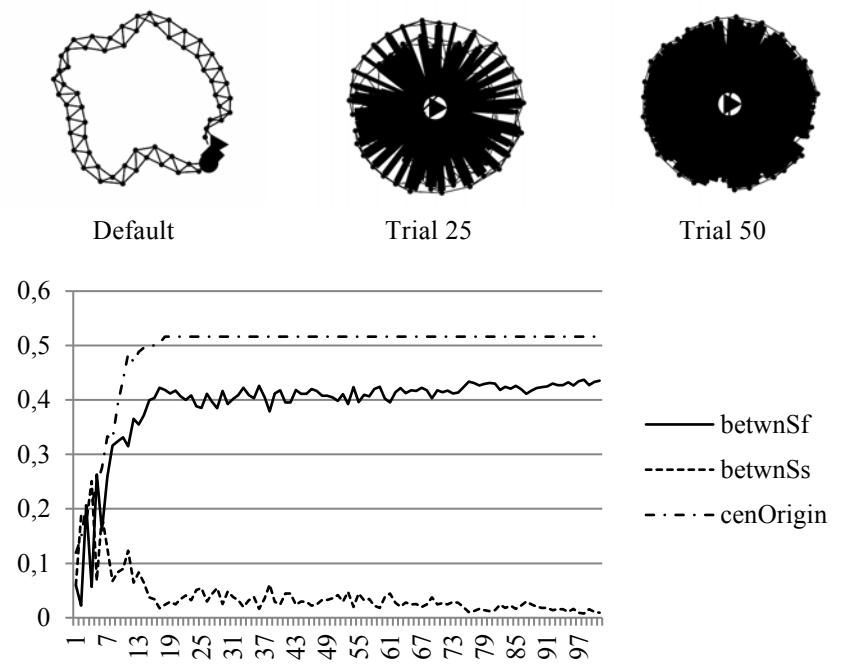


Figure 23: An example of the results of the experiments using the set of variables (iii) of Table 6



The *betweenness centrality* of S_f converges to the higher ultimate value if IP rights are given to S_f, and to the lower ultimate value if IP rights are not given to S_f. The difference is clear.

This example of models suggests that, under conditions similar to those of this example, giving IP rights to a supplier may cause little delay in the diffusion of *new creation* of the current generation, while it is likely to encourage such supplier to enter and continue activities in the market if the supplier seeks higher *betweenness centrality*, which is likely to warrant the relevant supplier's successful reach to potential consumers of the subsequent or a wider range of products or services, rather than simply seeking greater sales performance.

3. *Suggestions derived from the discussion using Model$_1$*

The discussion using *Model$_1$* suggests that giving IP rights to one of the competing suppliers possibly causes a delay in the diffusion of *new creation* embodied in products or services, although the degree of delay can be changed depending on the conditions of the relevant market. Especially, if IP rights are given to a supplier with weaker sales capabilities and enforced

against a supplier with stronger sales capabilities, the enforcement of such IP rights is likely to cause a substantive delay in the diffusion. On the other hand, giving IP rights to a supplier is likely to encourage the supplier to enter and continue the sales activities in the market to the extent the relevant supplier seeks higher *betweenness centrality* in the market.

Nevertheless, the said suggestion is based on the observation of the results derived from a limited number of experiments on models that also implement limited conditions. In reality, the conditions that are not implemented may also affect the diffusion rate. However, the said suggestion does not deviate greatly from the common understanding of legal practitioners – IP rights are often beneficial to both businesses and consumers, but sometimes disadvantage both or either of them, especially when they are enforced by those who have weaker sales capabilities or even have no intention of producing and selling the products or services implementing works or inventions, and we have to develop tactics (e.g., a patent pool, cross license scheme, open source license, or restrictions on injunctions) to alleviate such a disadvantage to a certain degree.

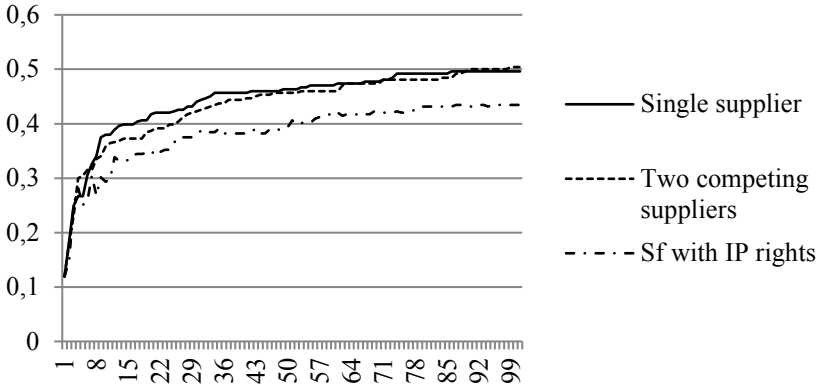
The arguments of both the advocates for stronger IP protection and the advocates for weaker IP protection would be justifiable. However, from the perspective of a social network, presumably, the conditions of the market assumed by the former are different from those of the latter, and *vice versa*.

4. The viability of Model$_1$

a) The advantage of Model$_1$ as opposed to conventional market models

Figure 24 shows an example of the growth of the *closeness centrality* of *Origin* in the experiments conducted using a model in which the distance between the node denoting a potential consumer and the node denoting a supplier does not affect the probability that the latter successfully sends edges to the former. The setting of the variables is the same as those of the model set out in II.2(a) above, except for that the probability that a supplier (S_f and S_s) successfully establishes an edge connected to each of the other nodes is fixed at *0.01* irrespective of the distance between the relevant pair of nodes.

Figure 24: An example of the results of the experiments using the set of variables (iv) of Table 6



The result of this example shows that the growth of the *closeness centrality* of *Origin* looks as if it is notably delayed when a supplier exercises its IP rights against its competing supplier. In contrast, in any of the results of the experiments set out in II.2, above, the growth of the *closeness centrality* of *Origin* is not so prominently slower in the case in which two suppliers compete with each other and one supplier exercises its IP rights against the other supplier, than in the case in which only one supplier enters the relevant market.

This comparison supports the plausibility of the concern set out in II.1(a)(1), above. If we discuss the competition between suppliers using a conventional model neglecting the effect of a consumer network, the results of such experiments possibly overemphasize the disadvantage of IP rights in deterring the growth of the *closeness centrality* of *Origin*.

b) The advantage of the models denoting a market with growing demand

The growth curve of the *closeness centrality* of *Origin* does not show a prominent difference irrespective of whether the market has a limited amount of demand or has growing demand. On the other hand, the growth curve of the *betweenness centrality* of S_f in the models of a market with growing demands shows that the value at which it converges can sometimes be much lower than its highest value once achieved by S_f (*Figures 15, 18* and *22*) unless S_f cannot exercise IP rights against its competing supplier S_s. Such a deterioration of the *betweenness centrality* of S_f is not remarkable in the models of a market with a limited amount of demand.

The existence of such difference itself suggests to us not only the advantage of the models denoting a market with growing demand, as well as the

conventional models assuming a limited amount of demand. Moreover, it can provide a clue to explaining the aggressive enforcement of IP rights by businesses in a market with continuously growing demand, where competing suppliers seemingly can coexist with one another. It is possible that they are using IP rights not only to increase their sales proceeds, but also to maintain or develop higher *betweenness centrality*.

III. Under which Conditions do IP Rights Help a New Entrant Supplier in a Market to Overcome its Disadvantage against Existing Suppliers?[40]

The discussion using models in Section II above, estimated the impact of IP rights to the diffusion of products or services in the society, assuming products or services of the same kind are simultaneously distributed by two competing suppliers. In contrast, this Section III covers the competition between a supplier in a market that has already established its own customer base and a new entrant supplier whose customer base is comparatively poor, and discusses the impact of IP rights to help such new entrant supplier overcome its disadvantage in the relevant market.

1. The pros and cons of legal protection of intellectual property – from the perspective of new entrants to a market

Many laws declare that the purpose of protecting technology by means of patents and other IP rights is to promote the development of industry and/or social welfare. For example, Article 1 of Patent Act of Japan[41] states: "The purpose of this Act is, through promoting the protection and the utilization of inventions, to encourage inventions, and thereby to contribute to the development of industry." The United States Constitution states in Article 1, Section 8: "The Congress shall have power: To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

However, some of the countries that are now characterized by their higher degree of intellectual property protection and their continuous and sophisticated development of industry were, in the past – when almost all of their domestic industry members were considered new entrants in the market

[40] This part is largely based on S. TERAMOTO, "Adjusting the Strength of Intellectual Property Rights to Allow Healthy Competition", a report at World Conference on Technology, Innovation Entrepreneurship. Istanbul, 28–30 May 2015.

[41] TOKKYOHO, Law No. 121/1959, as amended, English translation: the Ministry of Justice of Japan <http://www.japaneselawtranslation.go.jp>.

having weaker sales capabilities compared with the suppliers based in more developed countries – reluctant to give protection to the intellectual property embodied in imported intellectual products. For example,

> "[t]he first Copyright Act covered just maps, charts, and books. It gave authors an exclusive right over only printing, reprinting, publishing, and vending. Works were protected for just fourteen years, renewable once, if the author was alive when the first term expired. And works were only protected if they were registered, if the author deposited copies with an appropriate depository, and if the author was American. Our outrage at China notwithstanding, we should not forget that until 1891, American copyright law did not protect foreign copyrights. We were born a pirate nation."[42]

Japan "reluctantly" entered the Berne Convention for the Protection of Literary and Artistic Works and the Paris Convention for the Protection of Industrial Property, both in 1899. The stenographic record of the special committee that examined the bill of the Copyright Act for the Lower House of the 13th Imperial Diet of Japan *("Dai 13 kai Teikoku Gikai Shugi-in Chosakuken-hoan Shinsa Tokubetsu Iinkai Sokkiroku")*[43] shows that the Japanese government at that time was obliged to give legal protection to foreign inventions and works of authorship for the purpose of demanding that the developed countries (at that time) remedy unequal trade treaties. In addition, according to this record, the Japanese lawmakers at that time rightly presented their concerns about the disadvantage caused by IP rights in importing and reproducing foreign creative products, while pointing out the "pirating" experience of the United States.

These facts pose the frequently asked question – do IP rights deprive the disadvantaged player in the market, such as the domestic supplier of a developing country, of the chance to come from behind to beat the advantaged player, such as the multinational business giant? Alternatively, in contrast, do IP rights give the disadvantaged player the chance to overcome the giant?

2. Perspectives for devising a model to estimate the advantage of the respective suppliers in the market

A potential entrepreneur, who intends to create a new market for products or services (hereinafter, simply referred to as "products") embodying new technology, always faces the uncertainty of not knowing whether she will be able to survive the competition when followers enter the same market. However, suppose that she has a patent right or other IP rights that protect the said technology. Such rights give her the power to exclude competitors from the relevant market, as discussed in the experiments using models in II above.

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[42] L. LESSIG, Dunwody Distinguished Lecture in Law: The Creative Commons, Florida Law Review 55 (2003) 763, 768–769.

[43] Available at: <http://teikokugikai-i.ndl.go.jp/SENTAKU/syugiin/013/5278/main.html>.

Thus, IP rights, if granted to entrepreneurs, are likely to "nudge"[44] those entrepreneurs to enter the market to become the forerunner, by alleviating their uncertainty arising from competition.[45] The discussion using $Model_1$ in Section II above supports this justification of IP rights to a certain degree.

However, we also have to take into consideration the possible innovations brought out and diffused by the followers. The followers may innovate the technology originally developed by the forerunner, and the followers' products embodying such innovated technology may give consumers much greater benefits. However, if the forerunner's IP rights make the market conditions stable and unchanged by ensuring the forerunner's advantage, the followers would not have the opportunity to put themselves in a position to compete against the forerunner and thereby give birth to, and diffuse, innovations. If IP rights suffocate the competition in the market and deprive such following players of the chance to institute generational change in products or suppliers, IP rights would be harmful to the development of industry.[46] However, it would also be possible for followers to overcome their disadvantage in the market by cooperating with, or even beating, the forerunner using the IP rights of its own innovations.

For example, Toyota is known as the forerunner of the hybrid vehicle system,[47] which has become very popular and very beneficial to consumers. However, there is much room for improving the gas mileage of the gasoline engine combined with the hybrid system. Mazda has developed the leading energy-efficient engine technology ("*SKYACTIV* Technology").[48] If Mazda can improve Toyota's hybrid system by combining it with Mazda's *SKYACTIV* Technology, Mazda can make its products much more appealing to consumers and strengthen its market position. Conversely, if IP rights protecting Toyota's hybrid system inhibit Mazda from such improvement, Toyota is able to ensure its advantage in the market without increasing the benefit to consumers. In reality, fortunately for Mazda and consumers, and probably for Toyota too, Toyota decided to license its hybrid system technology to Mazda.[49] Mazda is now producing and selling automobiles employing

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[44] See THALER / SUNSTEIN, *supra* note 16.

[45] See LANDES / POSNER, *supra* note 9.

[46] We can find a considerable amount of literature identifying these kinds of problems caused by IP rights. See notes 9 and 11 above.

[47] See Toyota's technical information on its website: <http://www.toyota-global.com/innovation/environmental_technology/hybrid/>.

[48] See Mazda's technical information on its website: <http://www.mazda.com/en/innovation/technology/skyactiv/>.

[49] See the press releases by Toyota and Mazda of 29 March 2010 <http://www2.toyota.co.jp/en/news/10/03/0329_2.html>.

Toyota's hybrid system combined with *SKYACTIV* Technology.[50] In addition, Mazda agreed to produce and supply Toyota with automobiles powered by *SKYACTIV* Technology.[51] Moreover, Mazda and Toyota agreed to build an extended partnership to share technologies.[52]

The author has attempted to design a model on which we can discuss such an impact of IP rights by extending the simple network model ($Model_1$) as explained in Section II above.

3. Eigenvector centrality as an index

Suppose that we have the relevant market denoted as a network comprising of multiple nodes and the ties connecting nodes. Suppose also that a supplier's probability of approaching a greater number of possible consumers to sell a greater number of products largely depends on how influential the supplier is in the network so that it can effectively communicate the information concerning itself or its products to the possible consumers. This influence can be roughly estimated by (i) how many possible consumers have direct connections with the relevant supplier, and (ii) how many other influential consumers or other actors in the network have direct or indirect connections with the relevant supplier. In this context, the more influential supplier is considered as having an advantage in expanding its customer base, while the less influential supplier is considered as having a disadvantage for such purpose.

For example, assume that *Figure 25* denotes a very small market in which a triangle node and square nodes are mutually competing suppliers and other round nodes are consumers (if directly connected with either of the suppliers, they are actual consumers; if not, they are potential or possible consumers). In this market (represented by a network), the supplier denoted by the triangle node has an advantage over the supplier denoted by the square node in extending its customer base by reaching potential consumers. This is because the former supplier is connected with another influential node (circled by a dotted line) that has a direct or indirect connection with multiple nodes located in the right side of the graph.

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[50] See Mazda's press release of 22 October 2013 <http://www.mazda-press.com/eu/news/mazda-to-exhibit-all-new-mazda3-powertrain-derivatives-at-tokyo-motor-show/>.

[51] See the press releases by Toyota and Mazda of 9 November 2012 <http://www2.toyota.co.jp/en/news/12/11/1109.html>.

[52] See the press releases by Mazda and Toyota of 13 May 2015 <http://www.mazda-press.com/eu/news/toyota-and-mazda-team-up-to-make-cars-better/?year=2015&month=5> and <http://newsroom.toyota.co.jp/en/detail/7871861>.

Figure 25: The node having greatest eigenvector centrality (the triangle node) and the node having the second greatest eigenvector centrality (the square node)

In Section II above, the author employed *betweenness centrality* in order to assess the sales achievement of suppliers. However, in this Section III, in order to assess the said comparative advantage or disadvantage of suppliers, the author introduces *eigenvector centrality*.[53] Assuming that a given undirected graph G has n number of nodes; A is the adjacency matrix of G; a_{ij} is an element of A; and λ is the maximum eigen value of A (accordingly, the maximum *eigenvector centrality* in a network is always 1), $C_{ev}(i)$, the *eigenvector centrality* of $node_i$, is calculated as follows:

$$C_{ev}(i) = \frac{1}{\lambda} \sum_{j=1}^{n} a_{ij} C_{ev(j)}$$

For example, in the network depicted in *Figure 25*, the *eigenvector centrality* of the triangle node is 1, while that of the square node is 0.8893575.

4. Designing a model

A very simple model (hereinafter, *"Model$_2$"*) through which we can discuss the impact of IP rights in terms of the degree of advantage of the respective suppliers in a market is designed here. Due to its simplicity, *Model$_2$* focuses on the impact of the position of the respective suppliers in the network representing a hypothetical market, and ignores any other factors that may affect the advantage or disadvantage of the respective suppliers. Therefore, it should be noted, as with any other models used to explain reality, *Model$_2$* proposed herein explains only very limited aspects of the actual market.

Model$_2$ is prepared as a network that comprises of a specific number of nodes (here, the number of nodes = 64) and their connections, as *Model$_1$* was

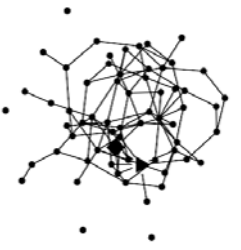
[53] P. BONACICH, Power and Centrality: A Family of Measures, American Journal of Sociology 92:5 (1987) 1170–1182. It should be noted that by employing one index for the purpose of convenience and simplicity, we inevitably neglect or underestimate several factors that are not substantially counted in the formula to generate such an index. For example, innovators and early adopters tend to avoid purchasing products already popular among the majority. However, such behavior and the supplier's ability to reach such class of consumers are not well represented by their *eigenvector centrality*.

so designed in Section II, above. Although an actual market may contain various kind of actors, including suppliers, consumers, agents, and advertisers, the indispensable participants of a market comprise of multiple suppliers competing with each other, and multiple consumers. For the purpose of simplicity, two nodes are nominated as suppliers, and the remaining 62 nodes are nominated as consumers.

In *Model*$_1$, one node was nominated as *Origin* because this model was designed to estimate the impact of IP rights to the diffusion of the *new creation* of *Origin* embodied in products or services. However, the purpose of the discussion using *Model*$_2$ is limited to the competition between the suppliers and their advantage or disadvantage in the market, while the degree of diffusion of the *new creation* is out of the scope of the discussion using *Model*$_2$. Accordingly, *Model*$_2$ does not include *Origin* as its participant.

In any market, the suppliers and the consumers are likely to be connected with each other directly or indirectly to a certain degree. For example, a consumer who purchases a product from a supplier can be deemed as connected directly with such supplier. A friend of such consumer can be deemed as connected indirectly with such supplier through the said consumer. However, it is not easy to devise the structure of such network, because it may vary depending on various conditions including the class of products, and the behavior of suppliers or consumers in a specific society. *Model*$_1$ started from a regular graph, and it was designed as a sparse network. This is because the default condition of *Model*$_1$ is designed to denote the condition of a market in which no products or services embodying the *new creation* have yet been distributed. However, *Model*$_2$ starts from a market in which suppliers have already distributed products or services of the same kind to some of the consumers. Accordingly, the nodes denoting such consumers must be directly connected with either or both of the nodes denoting suppliers from the beginning. Therefore, for the purpose of convenience, *Model*$_2$ assumes that the default condition is a random graph comprising of the said 64 nodes, in which the probability that a tie exists between any pair of nodes is 0.05 *(Figure 26)*.

Figure 26: S_f (the triangle node) and S_S (the square node) in a market denoted by a random graph.



In order to denote the supplier that is more advantageous in the said default market, the node that has the maximum *eigenvector centrality* is chosen and named as S_f. In order to denote the supplier that is less advantageous in the said default market, the node that has the 5th maximum *eigenvector centrality* is chosen and named as S_s[54] (for example, in *Figure 26*, S_f is denoted by a triangle node, and S_s is denoted by a square node).

As explained in relation to $Model_1$ in Section II.1.a)(2), above, $Model_2$ also assumes that the relevant market may have limited demand ($cCapa = 1$) or have growing demand ($cCapa = 64$). The assumption concerning the relationship between the probability of a supplier successfully reaching a consumer, and distance between them (variable *t, ft,* $s\tau$ and probability *P*), employed by $Model_1$ is also employed in $Model_2$. The setting of the variables denoting IP rights given to and exercised by each of S_f and S_s (namely, $fForce$ and $sForce$) of $Model_1$ is also applied to $Model_2$.

5. *Examples of models*[55]

The author assigned several sets of values to the said variables to derive examples of models that were likely to represent the competition between suppliers in a market under specific combinations of conditions. The author then repeated the experiments 10 times for each set of variables, and examined whether S_s's *eigenvector centrality* (evc_s), which is lower in the default network, exceeds S_f's *eigenvector centrality* (evc_f). Each experiment using respective sets of values comprised of 100 trials, and in each of the trials, as in the case of the experiments using $Model_1$, both S_f and S_s try to connect with nodes denoting consumers, while they try to cut off the ties between the node denoting the competing supplier and nodes denoting consumers. *Table 7* shows the conditions of the market denoted by the variables given to $Model_2$. *Table 8* show the set of variables used in the examples and the results of experiments repeated 10 times for each set of variables. It should be noted that the same combination of variables does not necessarily produce the same result, because the connections between nodes and their cut-off is not fixed. It is made only based on given probabilities.

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[54] Although S_s is the less advantageous supplier, it is likely to have considerably higher *eigenvector centrality* compared with most consumers, because S_s should have been making efforts to connect itself to consumers. On the other hand, $Model_2$, has to make a clear distinction between the *eigenvector centrality* of S_f and S_s. So, in spite of the node having the 2nd higher *eigenvector centrality*, the node having the 5th higher *eigenvector centrality* is nominated as S_s.

[55] The code prepared in *R* language to design $Model_2$ is disclosed at <https://archive.iii.kyushu-u.ac.jp/public/SZpkAAqImY-A88QBjXlWpNoM2norKcUern3lGTt1Mo8m>.

Table 7: The conditions of the market denoted by variables given to Model$_2$

		Value of variables	Conditions of the market denoted by the relevant variables	Value of variables	Conditions of the market denoted by the relevant variables	Value of variables	Conditions of the market denoted by the relevant variables
Variables	*cCapa*	1	Limited demand	64	Growing demand	–	–
	fτ	1	S_f has weak sales capabilities	2	S_f has strong sales capabilities	–	–
	sτ	1	S_S has weak sales capabilities	2	S_S has strong sales capabilities	–	–
	fForce	0	S_f does not enforce its IP rights	0.2	S_f enforces its weak IP rights	0.6	S_f enforces its strong IP rights
	sForce	0	S_S does not enforce its IP rights	0.2	S_S enforces its weak IP rights	0.6	S_S enforces its strong IP rights

Table 8: The set of variables used in the examples and the results of experiments

		Model$_2$(1)	*Model$_2$(2)*	*Model$_2$(3)*	*Model$_2$(4)*	*Model$_2$(5)*	*Model$_2$(6)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	1	1	1	1	1	1
	sτ	1	1	1	1	1	1
	fForce	0	0	0.2	0.2	0.6	0.6
	sForce	0	0	0	0	0	0
Results*	$evc_f > evc_s$	6 of 10 experiments	4 of 10	10 of 10	10 of 10	10 of 10	10 of 10
	$evc_f = evc_s$	0 of 10	3 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	$evc_f < evc_s$	4 of 10	3 of 10	0 of 10	0 of 10	0 of 10	0 of 10

* (eigenvector centrality after the 100th trials)

		Model₂(7)	*Model₂(8)*	*Model₂(9)*	*Model₂(10)*	*Model₂(11)*	*Model₂(12)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	1	1	1	1	1	1
	sτ	1	1	1	1	1	1
	fForce	0	0	0	0	0.2	0.2
	sForce	0.2	0.2	0.6	0.6	0.2	0.2
Results	$evc_f > evc_s$	0 of 10	0 of 10	0 of 10	0 of 10	8 of 10	5 of 10
	$evc_f = evc_s$	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	1 of 10
	$evc_f < evc_s$	10 of 10	10 of 10	10 of 10	10 of 10	2 of 10	4 of 10
		Model₂(13)	*Model₂(14)*	*Model₂(15)*	*Model₂(16)*	*Model₂(17)*	*Model₂(18)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	1	1	1	1	1	1
	sτ	1	1	1	1	1	1
	fForce	0.6	0.6	0.2	0.2	0.6	0.6
	sForce	0.6	0.6	0.6	0.6	0.2	0.2
Results	evcf > evcs	10 of 10	6 of 10	0 of 10	0 of 10	10 of 10	10 of 10
	evcf = evcs	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	0 of 10	4 of 10	10 of 10	10 of 10	0 of 10	0 of 10
		Model₂(19)	*Model₂(20)*	*Model₂(21)*	*Model₂(22)*	*Model₂(23)*	*Model₂(24)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	2	2	2	2	2	2
	sτ	1	1	1	1	1	1
	fForce	0	0	0.2	0.2	0.6	0.6
	sForce	0	0	0	0	0	0
Results	evcf > evcs	10 of 10	10 of 10	10 of 10	10 of 10	10 of 10	10 of 10
	evcf = evcs	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10
		Model₂(25)	*Model₂(26)*	*Model₂(27)*	*Model₂(28)*	*Model₂(29)*	*Model₂(30)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	2	2	2	2	2	2
	sτ	1	1	1	1	1	1
	fForce	0	0	0	0	0.2	0.2
	sForce	0.2	0.2	0.6	0.6	0.2	0.2

Results	evcf > evcs	0 of 10	0 of 10	0 of 10	0 of 10	10 of 10	10 of 10
	evcf = evcs	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	10 of 10	10 of 10	10 of 10	10 of 10	0 of 10	0 of 10
		Model₂(31)	*Model₂(32)*	*Model₂(33)*	*Model₂(34)*	*Model₂(35)*	*Model₂(36)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	2	2	2	2	2	2
	sτ	1	1	1	1	1	1
	fForce	0.6	0.6	0.2	0.2	0.6	0.6
	sForce	0.6	0.6	0.6	0.6	0.2	0.2
Results	evcf > evcs	10 of 10	10 of 10	7 of 10	8 of 10	10 of 10	10 of 10
	evcf = evcs	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	0 of 10	0 of 10	3 of 10	2 of 10	0 of 10	0 of 10
		Model₂(37)	*Model₂(38)*	*Model₂(39)*	*Model₂(40)*	*Model₂(41)*	*Model₂(42)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	1	1	1	1	1	1
	sτ	2	2	2	2	2	2
	fForce	0	0	0.2	0.2	0.6	0.6
	sForce	0	0	0	0	0	0
Results	evcf > evcs	0 of 10	0 of 10	10 of 10	10 of 10	10 of 10	10 of 10
	evcf = evcs	0 of 10	1 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	10 of 10	9 of 10	0 of 10	0 of 10	0 of 10	0 of 10
		Model₂(43)	*Model₂(44)*	*Model₂(45)*	*Model₂(46)*	*Model₂(47)*	*Model₂(48)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	1	1	1	1	1	1
	sτ	2	2	2	2	2	2
	fForce	0	0	0	0	0.2	0.2
	sForce	0.2	0.2	0.6	0.6	0.2	0.2
Results	evcf > evcs	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf = evcs	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	10 of 10	10 of 10	10 of 10	10 of 10	10 of 10	10 of 10

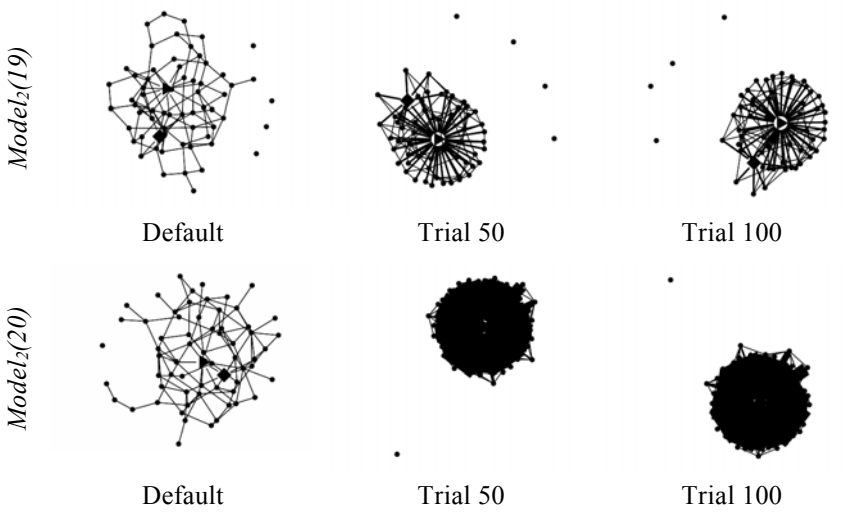
		Model₂(49)	*Model₂(50)*	*Model₂(51)*	*Model₂(52)*	*Model₂(53)*	*Model₂(54)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	1	1	1	1	1	1
	sτ	2	2	2	2	2	2
	fForce	0.6	0.6	0.2	0.2	0.6	0.6
	sForce	0.6	0.6	0.6	0.6	0.2	0.2
Results	evcf > evcs	0 of 10	0 of 10	0 of 10	0 of 10	4 of 10	4 of 10
	evcf = evcs	0 of 10	0 of 10	0 of 10	0 of 10	1 of 10	0 of 10
	evcf < evcs	10 of 10	10 of 10	10 of 10	10 of 10	5 of 10	6 of 10
		Model₂(55)	*Model₂(56)*	*Model₂(57)*	*Model₂(58)*	*Model₂(59)*	*Model₂(60)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	2	2	2	2	2	2
	sτ	2	2	2	2	2	2
	fForce	0	0	0.2	0.2	0.6	0.6
	sForce	0	0	0	0	0	0
Results	evcf > evcs	7 of 10	4 of 10	10 of 10	10 of 10	10 of 10	10 of 10
	evcf = evcs	0 of 10	5 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	3 of 10	1 of 10	0 of 10	0 of 10	0 of 10	0 of 10
		Model₂(61)	*Model₂(62)*	*Model₂(63)*	*Model₂(64)*	*Model₂(65)*	*Model₂(66)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	2	2	2	2	2	2
	sτ	2	2	2	2	2	2
	fForce	0	0	0	0	0.2	0.2
	sForce	0.2	0.2	0.6	0.6	0.2	0.2
Results	evcf > evcs	0 of 10	0 of 10	0 of 10	0 of 10	6 of 10	2 of 10
	evcf = evcs	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	10 of 10	10 of 10	10 of 10	10 of 10	4 of 10	8 of 10
		Model₂(67)	*Model₂(68)*	*Model₂(69)*	*Model₂(70)*	*Model₂(71)*	*Model₂(72)*
Variables	*cCapa*	1	64	1	64	1	64
	fτ	2	2	2	2	2	2
	sτ	2	2	2	2	2	2
	fForce	0.6	0.6	0.2	0.2	0.6	0.6
	sForce	0.6	0.6	0.6	0.6	0.2	0.2

Results	evcf > evcs	4of 10	6 of 10	0 of 10	0 of 10	10 of 10	10 of 10
	evcf = evcs	2 of 10	1 of 10	0 of 10	0 of 10	0 of 10	0 of 10
	evcf < evcs	4 of 10	3 of 10	10 of 10	10 of 10	0 of 10	0 of 10

Even within the limited examples shown in *Table 8*, there are several characteristic results.

If the sales capabilities of S_f, the originally advantaged supplier, are stronger than those of S_s, the originally disadvantaged supplier ($f\tau = 2, s\tau = 1$ in the experiments using *Model₂(19)* and *Model₂(20)* as shown in *Table 8*; the examples of the development of networks in these models are shown in *Figure 27*), it is not surprising that S_s cannot catch up S_f, unless S_s can interfere with the sales activities of S_f by exercising S_s's IP rights ($evc_f > evc_s$).

Figure 27: The examples of the development of networks in Model₂(19) and Model₂(20)



However, if the sales capabilities of S_s are stronger than ($f\tau = 1, s\tau = 1$ in the experiments using *Model₂(37)* and *Model₂(38)* as shown in *Table 8*) or balancing with ($f\tau = s\tau = 1$ or $f\tau = s\tau = 2$ in the experiments using *Model₂(1)*, *Model₂(2)*, *Model₂(55)* and *Model₂(56)*) that of S_f, there is ample room for S_s to rival or even overturn the position of S_f in the market ($evc_f = evc_s$ or $evc_f < evc_s$), unless S_s's sales activities (connection with the nodes denoting consumers in the experiments using *Model₂*) are interfered with through S_f's enforcement of its IP rights (cut-off of the ties connecting S_s with the nodes denoting consumers in the experiments using *Model₂*).

In contrast, once S_f enforces its IP rights ($fForce = 0.2$ or $fForce = 0.6$ in the experiments using $Model_2$), S_s will hardly rival or overturn the position of S_f in the market ($evc_f > evc_s$) when the sales capabilities of S_s are equal with that of S_f ($f\tau = s\tau = 1$ or $f\tau = s\tau = 2$ in the experiments using $Model_2(3)$, $Model_2(4)$, $Model_2(5)$ and $Model_2(6)$ or $f\tau = s\tau = 2$ in the experiments using $Model_2(57)$, $Model_2(58)$, $Model_2(59)$ and $Model_2(60)$), or even when the sales capabilities of S_s are stronger than that of S_f ($f\tau = 1$ and $s\tau = 2$ in the experiments using $Model_2(39)$, $Model_2(40)$, $Model_2(41)$ and $Model_2(42)$), unless S_s can counter by enforcing its own IP rights.

On the other hand, in the experiments denoting the condition where the IP rights enforced by S_s are stronger than those enforced by S_f ($sForce = 0.2$ and $fForce = 0$, $sForce = 0.6$ and $fForce = 0$, or $sForce = 0.6$ and $fForce = 0.2$ in the experiments using $Model_2$), S_s often rival ($evc_f = evc_s$) or overturn the position of ($evc_f > evc_s$) S_f when the sales capabilities of S_s are equal with that of S_f ($f\tau = s\tau = 1$ in the experiments using $Model_2(7)$, $Model_2(8)$, $Model_2(9)$, $Model_2(10)$ and $Model_2(12)$ or $f\tau = s\tau = 2$ in the experiments using $Model_2(61)$, $Model_2(62)$, $Model_2(63)$, $Model_2(64)$ and $Model_2(66)$), or even when the sales capabilities of S_f are stronger than that of S_s ($f\tau = 2$ and $s\tau = 1$ in the experiments using $Model_2(25)$, $Model_2(26)$, $Model_2(27)$ and $Model_2(28)$).

6. Suggestions derived from the experiments using $Model_2$

In reality, typical examples of the competition between the advantaged suppliers (S_f) and the disadvantaged suppliers (S_s) are found in the thriving market of quickly developing countries. From the perspective of the industry of a developing country, products implementing innovations tend initially to be distributed by foreign businesses or their importers, distributors or licensees. For example, in 1930, the total number of automobiles sold in Japan was 22,727, among which the number of imported completed automobiles was 2,591 and the number of automobiles assembled in Japan using imported components 19,678, while domestic production of automobiles amounted to only 458.[56] Therefore, it is natural for such foreign businesses (including the domestic distributors with whom they have contracted) to have higher *eigenvector centrality* in the relevant market, while pure domestic businesses have much lower *eigenvector centrality*. On the other hand, it is also probable that the following domestic businesses would gradually develop their own technological as well as marketing capabilities, and become able to supply advanced products to consumers. It is natural for consumers to prefer such advanced

[56] AUTOMOBILE BUSINESS ASSOCIATION OF JAPAN, History and future of Japanese automobile industry, Ministry of Commerce and Industry of Japan, Engineering Bureau survey materials, cited in Japan Automobile Manufacturers Association Incorporated, History of Japanese automobile industry, Tokyo: Japan Automobile Manufacturers Association Incorporated (1988) at 14.

products and the *eigenvector centrality* of the domestic businesses would increase gradually.

As suggested by the experiments set out above, there is a certain degree of concern that the IP rights owned and exercised by the existing suppliers would enable them to maintain their comparative advantage, by obstructing the growth of the *eigenvector centrality* of the new entrants in the market. The possibility of such IP rights inhibiting catch-up by new entrants may lead us to suspect that IP rights are detrimental to the birth and diffusion of innovations through market dynamism. However, there is a possibility that IP rights, once acquired by the followers or new entrants in the market, help their *eigenvector centrality* to overtake the advantageous suppliers' *eigenvector centrality*. Accordingly, unilateral resistance to stronger IP rights will be harmful even to the new entrants or followers, while adjustments to the degree of protection afforded by IP rights, as a transitory measure to permit followers to catch up, could offer a practical help to the new entrants or followers.

IV. Conclusions and Suggestions for a Governmental Innovation Policy

It is likely that every practicing lawyer would argue that the models used in the discussions in Sections II and III above are over-simplified and neglect many major factors that exist in reality. This is true. They are simple and able to reflect only limited aspects of the realities in the market. However, it must be noted that, despite the simplicity of the models, the repeated experiments produced different results depending on the conditions given to the models by using a different set of variables. Moreover, it should also be noted that even the same set of variables sometimes generate different results. That is, the aforementioned experiments suggest: IP rights are likely to be viable in promoting the diffusion of the products or services implementing innovations under specific conditions, while IP rights are likely to be detrimental to the diffusion of such products or services under other specific conditions; and it is also even probable that IP rights have little positive or negative effect on the diffusion of such products or services under other conditions. Moreover, IP rights of forerunner suppliers are likely to frustrate catch-up by followers, while IP rights of new entrant suppliers are likely to help them to catch-up with the forerunners.

IP rights can be helpful for a supplier under specific conditions to accelerate its growth or to keep its position in the market. IP rights can be helpful for society under specific conditions to accelerate the diffusion of products or services embodying innovations or to help change generations of suppliers

distributing products or services embodying innovation. However, under other conditions, IP rights are harmful or neutral, at best. Moreover, it would be highly difficult to predict the conditions that will be encountered at different times, at the time of the start of research, development, venture, or entrance to a specific market.

Even the effects of one specific set of legal rules (here, IP rights) under simple models denoting limited aspects of the market and society are diversified depending on the current and future conditions. In consideration of this, it is not practical to choose promising ventures in advance and to give opportunities for the acquisition of more IP rights than others are allowed. Moreover, it is not practical for us to try to predict whether strong or weak IP rights are helpful to the growth of the innovation in the respective business areas. Assuming that IP rights are helpful to suppliers and diffusion of innovation under some conditions, what the government can do for the promotion of the diffusion of innovation would be to recommend and help entrepreneurs to acquire more and more IP rights, while trying to adjust the strength of IP rights when the exercise of IP rights is obviously detrimental to the welfare of the society.

Presumably, when the government employs other more complex means (such as, finance, deregulation, tax exemptions, or otherwise) to promote diffusion and/or the birth of innovations, it would be more difficult to predict whether such means work. However, this does not mean that to do nothing is better. Rather, preparing various sets of conditions would be practical, as used in Sections II and III above, because some of them are likely to produce good results, although we cannot expect all sets of conditions to work.

In order to simultaneously operate multiple sets of conditions in one country in the expectation that some of the sets will help diffusion and give birth to innovation, governments should consider applying varying degrees of financing, deregulation, tax exemptions, etc. to companies – thus creating a New Economic Zone to realize the *diversity* of legal conditions and governmental policy.

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