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MPIfG Discussion Paper 20/2

Who Are These Bond Vigilantes Anyway?

The Political Economy of Sovereign Debt Ownership
in the Eurozone

Tobias Arbogast



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Abstract

This paper examines the ownership structure of eurozone public debt and the distributional consequences thereof. Through both a comparative perspective and an explorative case study of Italy, this paper asks two research questions. Firstly, it asks who holds government debt in Spain, France, Germany, and Italy. I focus in on Italy to provide, to the author's knowledge, the first highly disaggregated view of the holding structure of public debt. Secondly, for Italy I study distributional effects by examining who benefits from the interest received on government debt. This is accomplished through an investigation of the various stakeholders associated with public debt. Results indicate that most of the public debt is held by private and public financial institutions but rarely directly by households. Both direct and indirect beneficiaries of the interest received on government bonds in Italy turn out to be largely wealthy households, reflecting the unequal ownership of wealth more generally. However, prominent public financial institutions are also significant beneficiaries, which likely ameliorates a possible regressive distributional effect of the public debt holding structure. The paper discusses the results with an eye on inequality and contributes to further study of the political economy of public debt.

Keywords: disaggregated, government bonds, inequality, ownership, public debt

Zusammenfassung

Dieses Papier untersucht die Frage, wer die Gläubiger des Staates sind. Durch eine vergleichende Perspektive auf die vier größten Volkswirtschaften der Eurozone (Spanien, Frankreich, Deutschland und Italien) sowie eine explorative Fallstudie zu Italien ermittelt die vorliegende Studie einerseits die aggregierte Eigentümerstruktur von Staatsanleihen. Andererseits wird die Eigentümerstruktur für den Fall Italien disaggregiert, um mögliche Verteilungswirkungen jener Gläubigerstruktur zu erforschen. Dies wird durch eine Analyse der direkten und indirekten Empfänger von Zinszahlungen auf Staatsschuldspapiere ermöglicht. Die Ergebnisse weisen auf eine starke Konzentration von Staatsschuldenbesitz im Finanzsektor hin, während private Haushalte als Halter nahezu vollständig verdrängt wurden. Insofern private Haushalte Staatsschuldspapiere besitzen, sind dies überwiegend vermögende Haushalte. Ähnliches ergibt die Analyse der indirekten Verteilungswirkungen, welche die Vermögensungleichheit im Allgemeinen widerspiegeln. Für den Fall Italien zeigt sich auch, dass die Gruppe der Begünstigten auch im großen Maße öffentliche Finanzinstitutionen einschließt, wodurch eine regressive Wirkung der Halterstruktur von Staatsschulden möglicherweise abgeschwächt wird.

Schlagwörter: disaggregiert, Gläubiger, Halterstruktur, öffentliche Schulden, Staatsanleihen, Ungleichheit

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Who Are These Bond Vigilantes Anyway? The Political Economy of Sovereign Debt Ownership in the Eurozone

1 Introduction

It is a seemingly trivial fact that every debt, including public debt, constitutes an asset for someone else. However, this accounting truth gains much political traction in crisis situations when public debt service turns into a priority for states, at the cost of other public spending such as social welfare. In several cases of public debt crises, harsh austerity measures were implemented to repay the holders of government bonds at the expense of the wider population that had to bear the brunt of social spending cuts (Zezza 2012; Stuckler and Basu 2013). Whoever holds public debt securities therefore not only has an interest in the state's ability to repay the debt but also holds a claim on the future tax revenues of the state and, as a result, a claim against taxpayers. As Marx ([1894] 1991, 607) observed a long time ago, government bonds are titles to money long spent but with a claim on the future revenue of the state. This raises the question of who owns this public debt and what the implications of particular ownership structures are. Among others, this question has long been analyzed through a distributional prism, that is, by asking who benefits from the interest payments associated with public debt. The European sovereign debt crisis further invigorated interest in the ownership structures of sovereign debt as it became painfully clear that government bond holders not only benefit from interest payments but might also have power over state financing and, by extension, fiscal policy (Rommerskirchen 2019). What is more, government bond holders benefit from these debt securities' role in financial markets by virtue of their ownership of a safe asset and store of value. It is, thus, for several good reasons that the question of who owns government bonds has re-entered the debate in academic and policy circles. Unfortunately, the data situation on exact ownership structures (i.e., the investor base) remains highly problematic at best (Streeck 2014a, 82). This is, for example, also acknowledged by national debt management offices (Maria Cannata 2019; Christian Hirschfeld 2019).¹ The reasons for the problematic data situation lie

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inter alia in the financialization of public debt and debt management offices. Specifically, the hitherto well-known groups of creditors such as domestic banks have been replaced by anonymous and often international government bond holders who trade the debt in secondary markets (Fastenrath, Schwan, and Trampusch 2017). To the extent that information on specific holders of government bonds exists, the data is usually not publicly available. A case in point is the ECB's newly established SHS-S dataset, which identifies eurozone holders of a given security, including government bonds, but is highly confidential. A further difficulty in mapping the holding structure lies in the fact that different sources cannot always be harmonized because they sometimes use different categories and differ in whether they report nominal or market values of holdings. For instance, the difference between the market and nominal value of Italian general government debt has usually been modest, but exploded in 2014 when the difference rose to nearly 20 percent of GDP (Dembiermont et al. 2015, Graph 2). This caveat should be kept in mind throughout this paper and demands both a cautious interpretation of the numbers reported and future validation of the present empirical work. For want of a better alternative, however, combining different sources appears to be the best available option for researchers. The approach pursued in this study is to identify significant holders on a fine-grained level rather than exhaustively map the entire holding structure. As such, the unexplained residual of the holding structure is still sizeable.

The research question that I ask in this paper is two-fold, and the paper is accordingly structured into two parts. The first part asks who holds the outstanding government debt in the eurozone. In so doing, I study the four biggest eurozone economies using aggregate-level data. To go beyond this coarse level of analysis, I employ an exploratory case study of Italy where I disaggregate the ownership structure to an individual firm and household level by combining several data sources. The second part uses data on companies' shareholders and household panel data for Italy to uncover which stakeholders benefit indirectly from the interest payments received on government bonds held by financial institutions.

The current study contributes empirically by providing, to my knowledge, the first highly disaggregated analysis of a country's public debt ownership structure and its implications for distribution. Naturally, the exploratory nature of this endeavor favors a small- n approach based on abundant descriptive material. The approach being used is analogous to working one's way through the layers of an onion in that I go from aggregate data on the share of the total government debt held by each sector to the disaggregate level of both type and token of financial institutions holding the public debt. This approach makes it possible to uncover a methodological issue associated with the

1 I conducted interviews with the former head of Italy's Debt Management Directorate in the Treasury, Maria Cannata, as well as with the spokesperson of Germany's Finanzagentur, Christian Hirschfeld. Both confirmed that comprehensive disaggregated data, if at all existent, would be in the hands of the private companies that administer the coupon payments (i.e., clearing houses): in the German case, Clearstream (part of Deutsche Börse); for Italy, Monte Titoli (part of London Stock Exchange).

coarse, aggregate view of government debt ownership, namely the underestimation of ownership concentration when a financial services company holds public debt via its insurance and banking branch. Similarly, the quest for identifying beneficiaries goes from the institutional to the household level beneficiary. As such, the level of description moves from the macro (ownership structure over time and across space) to meso (types of institutions) and, ultimately, micro level (individual holders and beneficiaries).

The empirical mapping shows that the holding structure of government debt is highly skewed in favor of a few financial institutions whose ownership of government debt situates them centrally in the state-finance nexus. To the marginal extent that households still figure as direct holders of government debt, it is overwhelmingly wealthy households who own the debt. Focusing more narrowly on the question of distribution, and in particular the economic benefits gained from state's interest payments, I find some heterogeneity in the indirect beneficiaries of the holdings of financial institutions. Still, by and large beneficiaries who stand to gain from public debt holdings are either other financial institutions or wealthy households. Therefore, the paper contends that, even though public debt is often seen as a (Keynesian) tool for progressive policy, *the holding structure of the public debt in Europe disproportionately benefits the wealthy because the debt is mostly held by financial institutions whose stakeholders (shareholders; investors; employees) are likely to be wealthy households.*² However, this finding does not lend itself to a rigid class perspective whereby a small group of coupon-clipping rentiers directly extract money from the state. Instead, the paper's findings should be interpreted as a case of how rentier income initially flows not to households but to financial firms as corporate profits of which interest income earned on government debt is one component (Epstein and Jayadev 2005). Only once we analyze the structure of beneficiaries of these firms can we say something about households.

While I marshal the empirical data to shed light on the monetary distributional effects of the *interest payments channel*, this is not to deny that other, potentially even more relevant, channels for benefitting from owning government debt exist. On the contrary, analyses of the (structural) power of finance vis-à-vis states through ownership of government bonds are numerous but could not be accommodated within the scope of this paper (see, e.g., Streeck 2014a; Fastenrath, Schwan, and Trampusch 2017; Kaplan and Thomsson 2017; Roos 2019; Hardie 2012). Similarly, other authors have analyzed how government bonds figure in the liquidity management and trading of financial institutions, thereby constraining states' financial sovereignty (Gabor 2016; Gabor and Ban 2016; Braun 2017). However, existing studies sometimes provide only tenuous empirical proof for the asserted power dynamics associated with government bond holders, which is often owing to the lack of fine-grained data (Hager 2016b). Thus, by providing a coherent map of the

2 This point is crucial for avoiding misunderstandings: This study does not attempt to examine the reasons for why sovereign debt is high in the first place or how the money is being spent by governments (see Streeck 2014a). As such, it does not study the *overall* distributional effect of public debt.

ownership structure, I hope that other facets of the political economy of sovereign debt ownership can be more readily studied in an empirical fashion in the future.

The paper proceeds as follows. Section 2 reviews the extant literature from various theoretical strands and critically engages with the hitherto employed methodology. Section 3 provides the empirical aggregate-level picture of the government debt holding structure of the four biggest eurozone economies. Section 4 is a case study of Italy that presents a disaggregated picture of the country's public debt ownership, while Section 5 studies the beneficiaries of this holding structure. Section 6 concludes with a discussion of the findings against the background of similar studies for the US and suggests what remains to be done in terms of future research on the topic.

2 Government debt ownership and distribution

The question of who owns government bonds (i.e., the holding structure) has been a long-standing topic in economics and has more recently also become of interest to central banks, debt management offices, and international organizations such as the IMF. Interest in the holding structure ranges from questions of financial stability (Andritzky 2012) and the sovereign-bank nexus (Alogoskoufis and Langfield 2018) to topics such as states' funding costs (Arslanalp and Tsuda 2014) and how much public debt is held abroad (Giannetti and Laeven 2012). Other studies focus on diverging effects of the European debt crisis on core and periphery sovereign debt (Merler and Pisani-Ferry 2012) or the historical trajectory of government debt ownership (Abbas et al. 2014). By contrast, coming from a political economy tradition, this paper examines the ownership structure to ask who gains from it. Crucially, the study does not examine distributional effects *within the private sector* such as through valuation effects (e.g., capital gains) that benefit sellers of government bonds at the expense of buyers.³ Instead, I investigate the distributional effects *between the public and private sector* through the interest payments on government bonds.

A common position in the literature on government debt ownership was to argue that, as long as the national debt is held by residents, no net economic loss arises from it since “we owe it to ourselves” (Lerner 1948, 256). On the other hand, public debt held abroad was indeed seen as a net loss to the domestic economy as it transfers wealth from domestic taxpayers to foreign bondholders, but as such leaves untouched the domestic

3 Unfortunately, Hager (2016a; see Figure 1) confuses the two in his account of the distributional effects of government debt by assuming that the large return from US government bonds comes from high interest rates when, in fact, the opposite is true: yields fell but large capital gains could be reaped – a mechanism that concerns redistribution *within* the group of creditors. On a separate note, it should also be pointed out that, strictly speaking, interest is not a “transfer” of wealth but an income received in exchange for foregoing liquidity.

distribution of income. Such a view on the distributional effects of public debt was, however, criticized as inadequate by some economists on the grounds that the domestic distributional effects – whereby one group in the economy benefits from the interest payments on sovereign debt at the expense of another – do matter. Adam Smith ([1776] 1998, 1253) had already argued that the public debt would transfer money from the “industrious classes” to public creditors. Since the latter would have much less interest in the welfare of the economy than the former, this was bound to have negative effects. Similarly highlighting the danger of the potential for the public debt to feed into a rentier class, Marx ([1894] 1991) argued that the rise of the national debt “[...] means nothing more than the growth of a class of state creditors with a preferential claim to certain sums from the overall proceeds of taxation” (607). Several decades later, the rise of public borrowing shifted the topic to the center of the post-war US macroeconomic debate (Ratchford 1942). Early Keynesian economists became very preoccupied with the link between servicing the public debt and the rise of a class of rentiers (Reinhardt 1945, 210; Lerner 1948). Since high-income households have more wealth available to save and invest as well as a higher savings rate (Haller 1968, 184; Kalecki 1954), the assumption was that they would also hold most of the government bonds, especially if public debt rose quickly (Pigou 1940, 83; Hansen 2003, 179). However, given that wealthier households also bore a higher tax burden, shedding light on possible distributional effects of public debt requires a comparison of the distribution of (the interest payments on) government bonds across income classes with the distribution of the tax burden or “tax incidence” across income classes (cf. Reinhardt 1945, 211; Dalton 1954, 181; Musgrave and Musgrave 1973, 236–38). If taxes paid by various income classes were proportional to their holdings of government bonds, they would simply pay themselves “from the left pocket” as tax payer to the “right pocket” as coupon receiver (Ratchford 1942, 455). By the same token, however, for the public debt not to have regressive effects, a highly concentrated public debt would have to be combined with a strongly progressive tax (e.g., capital levy) to repay it (Kalecki 1943, 2).⁴

According to this “transfer approach,” in order to investigate the distributional effects of public debt ownership one would only need to compare the two flows of money from and to households, i.e., interest received versus taxes paid. Indeed, less Keynesian macroeconomic authors have also employed a methodological framework in which it is assumed that households hold public debt. Barro (1974) invoked this logic in his influential paper, in which he argued that the attempt to use public debt to boost growth or social welfare would be self-defeating because rational taxpayers would account for the higher future tax burden required to repay the debt plus interest by investing their tax relief in government bonds. Again, implicit in this “Ricardian Equivalence” is the assumption of a distribution of government bonds that is equal to the distribution of the tax burden. Prominent public finance scholars in Germany have, however, heavily

4 As Kalecki pointed out, a capital levy to repay the national debt will only change the income and consumption *within* the capitalist class, while aggregate income and consumption remain relatively unaltered.

criticized studies invoking a transfer approach for, among others, being misguided in its focus on households when in fact the majority of public debt is held by financial institutions (Andel 1969; Gandenberger 1970; Anselmann and Kraemer 2016).⁵ This paper pays heed to this critique by studying the actual holding structure dominated by financial institutions, which leaves the transfer approach inadequate for a distributional analysis. Instead, I follow Kurz and Rall (1983) who attempted to include indirect distributional effects. First, however, I review the extant empirical literature on the question of who holds government debt and who benefits from this.

Few empirical studies have been carried out on the topic of (the distributional effects of) public debt ownership, and those that have come to sometimes strikingly diverging conclusions (Michl 1991; Cohen 1951). A recent attempt to collate the existing studies and systematically investigate the question for the US was carried out by Hager (2016b; 2014; 2013, 52 for an overview of studies).⁶ He shows that the conclusions of previous studies were disparate and speculative owing to the lack of reliable disaggregated data (Hager 2013, 52, 165). As far as any overall conclusions can be drawn from a patchy empirical record, Hager (2013, 138–62) finds that domestic government bond ownership concentration, operationalized by the share held by the top one percent, was very high (45 percent) from 1920 to 1929. This share decreased to 17 percent in 1969 but rose again to 42 percent in 2010 (see Appendix, Figure 16, for up-to-date data), paralleling the twentieth century U-shaped trajectory of wealth and income distribution more generally (Piketty 2014, 292, 299; Hager 2016b, 40). In fact, the finding that in the US the wealthiest 0.1 percent of households own about 39 percent of all fixed-income claims (i.e., including government bonds) as opposed to 22 percent of all wealth (Saez and Zucman 2016) suggests that the distribution of government bonds might be even more concentrated than wealth. Following a transfer approach logic, Hager goes on to compare the holding structure with the tax burden and finds the latter to alleviate the regressive effects of the former. Throughout, though, Hager cautions that it is not possible to use the empirical data to draw a direct link from the taxes paid by the working class to wealthy bondholders. This methodological caution is echoed by other studies that were conducted for Germany (e.g., Anselmann and Kraemer 2016). Owing to the

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- 5 Andel's (1969) critique asked about the comparative distributional effects of government borrowing since all sources of state financing have distributional effects, i.e., a "differential incidence analysis" (Musgrave and Musgrave 1973, 238). Gandenberger's (1970) main criticism, on the other hand, was that capital owners receive interest income irrespective of the source so government bonds should not be seen as the *cause* of interest income (Gandenberger 1981, 39). Nevertheless, government borrowing might raise the general rate of interest and therefore affect the functional (as opposed to personal) distribution of income in favor of rentiers. Viewed through a market mechanism perspective, this is correct and would require a study of the interest *margin* earned by government bond holders, that is, one would also have to consider the financing costs of holders. However, from a public finance perspective this is not of primary concern because it is state expenditure – such as coupon payments – that must be democratically legitimated and not how this translates into a profit – or not – on the part of market actors.
- 6 Hardie (2012) is another invaluable exception but focused on developing countries, which is not the focus of this study.

lack of data on the distribution of government debt securities at the household level, Kurz and Rall (1983) follow previous studies on the assumption that this distribution is similar to the distribution of securities among households more generally. The authors also point out that the overwhelming share of government debt is held not by households, rich or poor, but by banks and other financial institutions such as insurance companies. In all likelihood, the authors argue, the indirect beneficiaries of such holdings by financial institutions are again the wealthy, since they are the main shareholders of such companies or depositors in the case of banks. This indirect link has also been the focus of Hager's analysis (2016b, 51), which attempts to link the high (financial) *corporate* holdings in the US to the household level and hence re-introduce the class dimension. The fact that direct household ownership in government bonds only accounts for a fraction of the overall US sovereign debt ownership structure constitutes a methodological problem for the contention of a "bondholding class" (Canterbery 2002). Indeed, since many of the class analytic conclusions drawn by Hager depend on a correct analysis of *indirect* ownership structures and what they mean for distribution, he provides evidence that the holdings of financial institutions such as mutual funds overwhelmingly benefit a rentier class as such funds are disproportionately owned by the wealthy.

While broadly following Hager's perspective, this study employs a more refined problem-driven approach to map the respective ownership structures and identify indirect beneficiaries. Specifically, the preferred methodological approach is to combine both quantitative and qualitative data to be able to go beyond the aggregate view and analyze more fine-grained data. Among other reasons this is crucial for comparative work. As Hardie (2012; 2011) shows, both the heterogeneity of investors in government bonds as well as commonalities in the holding structure of government bonds only show up when we compare different economies and go beyond the aggregate picture.⁷ This means paying greater attention to domestic financial structures such as institutional holdings, which is especially important given that, as noted above, in most cases government debt markets are largely driven by financial institutions rather than retail investors. Institutional holdings involve different types of financial flows and balance sheet operations that are less obvious on a "pure" household level (e.g., fees, primary dealers, secondary market trading, etc.). Furthermore, more fine-grained information about the specific investor base of government bonds might reveal changing motives for why government bonds are being held. Additionally, questions of power and processes of financialization are inextricably linked to this, as has been argued by some authors. For instance, Streeck (2014b, 43) argues that government bonds not only provide wealthy individuals with a liquid store of value but also confer power over the state to a group of powerful creditors (Streeck 2014a). Other authors discuss the role that government bonds have come to

7 The investor base refers to the *type* of investors, while another often-studied but distinct dimension concerns how geographically (de)centralized the investor base is. Both topics are crucial for understanding how creditors shape the available policy options and more general policy climate for governments. For example, Kaplan and Thomsson (2017) show how a decentralized and international holding structure has been associated with austerity, while Roos (2019, 325) argues that it is a concentrated holding structure that facilitates repayment.

play in repo markets as well as in central bank collateral management (Gabor and Ban 2016; Gabor 2016). While this study's scope does not allow for a discussion of what the holding structure of government debt means for power dynamics and financialization, it does furnish the disaggregated data necessary for studying these questions.

In summary, the holding structure of government bonds has been analyzed with respect to questions such as its distributional effects but this has become all the more difficult given the lack of fine-grained data. Hager's work provides the most recent systematic attempt to map the ownership structure of government bonds in the US. His study finds, on the one hand, the household sector's holdings to be top-heavy and, on the other hand, the pervasive significance of private financial institutions as holders. Specifically, Hager finds banks to have moved somewhat to the background in the holding structure. Furthermore, wealthy households stand to gain not only from their direct ownership of government bonds but also indirectly from the holdings of financial institutions since the stakeholders of financial institutions are usually, again, wealthy households. Unfortunately, to date no similar work has been conducted for the eurozone, a gap this study tries to fill. Furthermore, as Hager himself points out, since the holding structure is largely mediated by financial institutions, I focus at more length on the indirect beneficiaries. Given the need to have fine-grained data to illuminate these issues, the next section tackles the paucity of reliable empirical data and reveals who owns public debt in the eurozone.

3 Aggregate holding structure of public debt securities in the eurozone

This section uses a comparative approach to the sectoral holdings of government debt securities of Germany, France, Spain, and Italy to shed light on common trends as well as idiosyncrasies in the holding structure.⁸ The selection of these four cases is, on the one hand, based on the importance of these economies for the eurozone. On the other, the public debt of Italy and Spain has come to be seen as less safe than its French and German counterparts, providing an interesting comparative lens on the countries' respective holding structures. In the following figures the government bond ownership is broken down by sectors in terms of the share of total government debt as well as the gross amount held in each sector.⁹ The data is from the most recent version of the Bruegel database of sovereign bond holdings elaborated on in Merler and Pisani-Ferry (2012). Some stylized trends stand out in the figures below (Figures 1–8).¹⁰

8 Debt securities make up the largest part of total (central) government debt in all cases. The other category – direct loans to governments – usually refers to loans made by banks.

9 The breakdown of the categories differs by virtue of the statistical agencies' methodology. The more accurate description for banks in the data is "monetary financial institutions" and also includes money market funds (see Eurostat 2010).

10 Again, as the authors also note, it is highly problematic but at present the only available method to combine nominal and market values. For Germany, there is a change in the aggregation

The *non-resident or foreign holdings* of the surveyed eurozone countries accelerated strongly between the introduction of the euro and the global financial crisis (GFC). This is commonly explained by how financial integration led to a diversification of the investor base (Bruegel 2019). That is, yields on sovereign debt converged through the implicit pooling of risk by the common currency and common central bank. In all four countries, foreigners heavily bought into the sovereign bond market both in absolute terms and relative to the total holdings. Except for French and German debt, Merler and Pisani-Ferry (2012, 4) find these foreign holders to be largely other eurozone investors. After the financial crisis, the foreign holdings rose further in gross terms except for Italy. The gross foreign demand continued to rise through the sovereign debt crisis especially for France's and Spain's public debt. However, in proportion to the total, foreign demand slacked in Spain and Italy during the tumultuous period from 2011 to 2014. For Italy, Tooze (2018, 385) explains the swift foreign capital flight through fear of contagion: international creditors were afraid that the announced creditor haircut to Greek public debt might be applied to Italy too. From its already high level, foreign demand for German and French public debt rose in relative terms during the same period – a classic flight to safety.

The *central bank (Eurosystem)* holdings partly ameliorated this capital flight during the European sovereign debt crisis. With the advent of quantitative easing (specifically the public sector purchase programme or PSPP), the Eurosystem's holdings sharply rose, to some extent replacing foreigners as a share of the total (though not necessarily in absolute terms).¹¹ Italy is peculiar in that the central bank already held a significant amount of its sovereign's debt before QE.

Domestic bank holdings in the countries surveyed have all been high relative to the total debt, speaking to the specificity of the European financial system (Merler and Pisani-Ferry 2012, 4; Andritzky 2012, 13). In all four countries, from the introduction of the euro to the GFC, domestic banks were largely replaced in relative terms: by foreign holdings in Italy and Spain, and by foreigners as well as other financial institutions in Germany and France. Banks, however, re-entered the domestic sovereign bond market during the tumultuous 2011–2014 period in Italy and Spain. The phenomenon that banks happen to increase their holdings of domestic sovereign debt when the sovereign is in distress can be explained by financial repression, liquidity, or by a more profit-focused argument (Dell'Ariccia et al. 2018). Banks have an incentive to increase their exposure to their sovereign's debt as default risk – and hence yields – rises. Banks' equity holders face limited liability while fully internalizing upside risks and thus gain from higher yields but can shift default risks to taxpayers or banks' creditors (Acharya, Drechsler, and Schnabl 2014). Borrowing short-term to lend long-term, these banks' carry trades

method between 1999Q4 and 2000Q1 so that the foreign share jumps from 35 percent to 42 percent. I therefore used the data point from 2000Q1 instead of 1999Q4.

11 The share of the national central banks' subscription to the ECB's capital determined their proportions of purchases in the public sector purchase programme.

were effectively a bet on the survival of the eurozone (Acharya and Steffen 2015). Other reasons for this phenomenon include banks' access to inside information, moral suasion (Tabellini 2018) and, at a later point in the crisis, the cheap liquidity furnished by the ECB's long-term refinancing operations (LTRO). Moreover, domestic banks acted as countercyclical shock absorbers during the sovereign debt crisis at a time of panic selling of the country's public debt (Tabellini 2018) even though some argue that this role could have been equally played by households (Gros 2017).

Looking at domestic *other financial institutions* (OFIs include, e.g., insurance companies and investment funds) we observe a continuous and strong growth of this sector's holdings from 1998 to 2014 in absolute terms. In Italy, Spain, and France, the sector's holdings grew significantly from 2011 to 2014. In Italy, the sector more than doubled its holdings between 1997 and 2014. Big insurers hold not only their domestic sovereign's debt but also other eurozone public debt. For example, in 2018, Italian insurance giant Generali reported holdings (at fair value) of 59 billion euro of Italian public debt but also 32 billion euro of French public debt (Generali Group 2018, 49). Similarly, the French insurance firm AXA held 50 billion euro of French government bonds, 24 billion euro of German, and 21 billion euro in Italian government bonds as per 2018 (AXA 2018, 203).

Lastly, holdings of *other residents* (households, non-financial firms, and other organizations) are frequently difficult to capture. In France, for instance, the data do not allow to distinguish these from central bank holdings. However, one can show that in Germany, Spain, and especially Italy, the household sector has lost out the most. The category of other residents in Italy has historically held a high share of their sovereign's debt securities but have seen their slice of holdings shrink from 430 billion euro or 40 percent of the total in 1997 to 93 billion euro or 4.7 percent of the total in 2018 (see also Section 4). As in other countries, this is partly explained by the professionalization of savings through financial intermediaries and the advent of institutional investors (Garcia-Macia 2018). It is partly, however, also underestimated by virtue of "round-tripping" in statistics. For instance, holdings of foreign investment funds are actually attributable to resident households but show up as foreign holdings in statistics. The Banca d'Italia estimated that between 9.5 and 16 percent of total non-resident holdings of Italian government debt might in fact be attributable to Italian savers (Banca d'Italia 2011, 57). Adjusting for this methodological problem, it has been estimated that the true share of Italian debt held by foreign investors might be around 25 percent and households' holdings correspondingly higher (UniCredit 2018, 4).

In sum, what we learn through the aggregate view on holding structures of government debt securities in Germany, France, Spain, and Italy is, firstly, that gross public debt rose dramatically in all countries. This was especially exacerbated through the GFC and the sovereign debt crisis. The lion's share of this was absorbed by foreigners, domestic banks, and other financial institutions, as well as the central bank. Conversely, with the

advent and rise of institutional investors as well as the continuing weight of banks, direct holdings of households have become almost epiphenomenal to the modern holding structure of government debt. This diachronic trend holds for all four surveyed countries. Indeed, the trajectory of government debt holding structures is largely shaped by the financial sectors’ (including central banks’) intervention in this market. The degree of such interconnectedness between financial institutions and government debt is both revealed and fortified through financial and sovereign debt crises. What has changed, however, is the composition or type of financial institutions that dominate and, as such, entrenched national structural features exist. For instance, in Italy, we observe a strong sovereign-bank nexus, while in other countries (e.g., France) other financial institutions have become more dominant. Should the thesis of a bondholding class thus be modified to a bondholding financial sector? On the face of it, the direct holdings would suggest this to be the case. But, as I show by means of the Italian case study, it is possible to identify the ultimate indirect beneficiaries – households or individuals – by going beyond a sectoral level of analysis.

Figure 1 France’s public debt securities holdings by sector

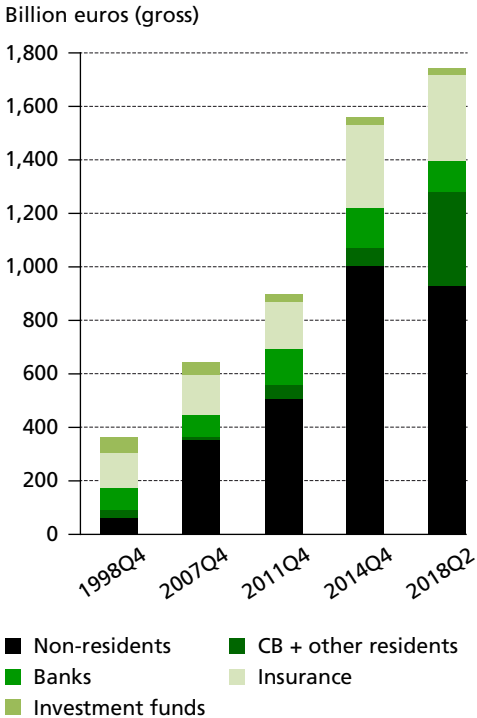
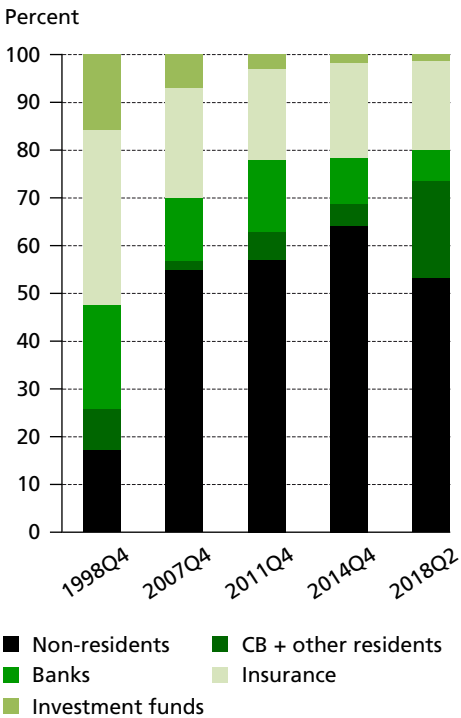
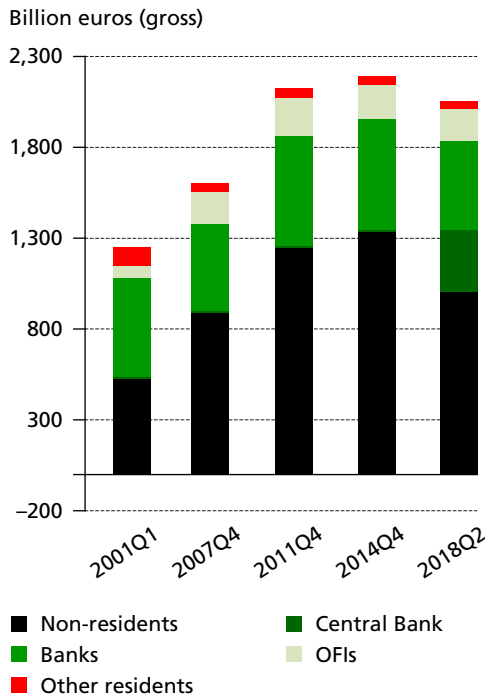


Figure 2 France’s public debt securities holdings by sector (percent total)



Note: The statistics do not allow a distinction between central bank (CB) holdings and other resident. Source: Bruegel *Who's afraid of sovereign bonds* dataset.

Figure 3 Germany's public debt securities holdings by sector



OFIs = Other financial institutions.
Source: Bruegel *Who's afraid of sovereign bonds* dataset.

Figure 4 Germany's public debt securities holdings by sector (percent total)

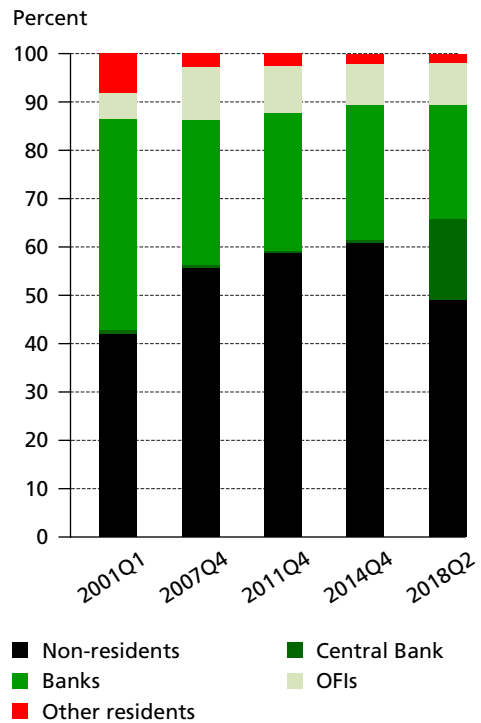
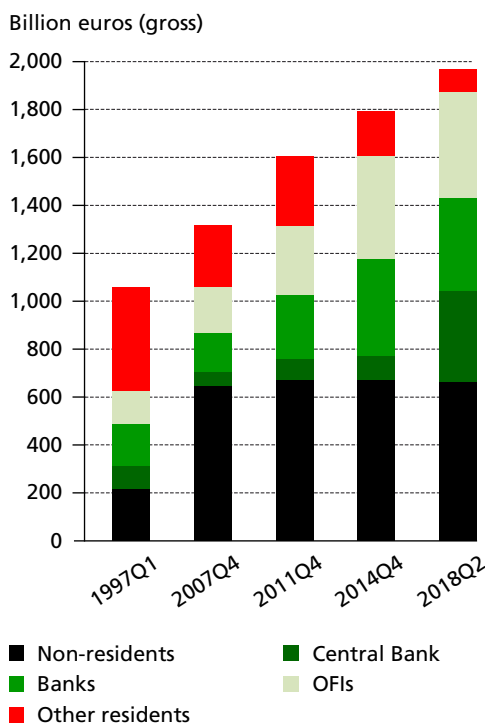


Figure 5 Italy's public debt securities holdings by sector



OFIs = Other financial institutions.
Source: Bruegel *Who's afraid of sovereign bonds* dataset.

Figure 6 Italy's public debt securities holdings by sector (percent total)

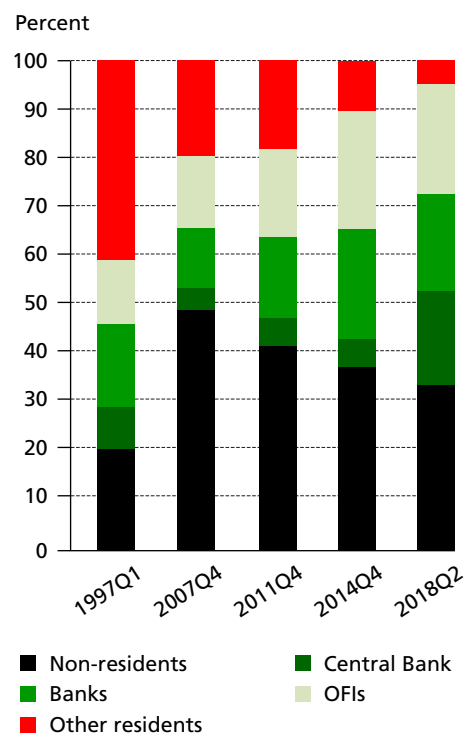


Figure 7 Spain’s public debt securities holdings by sector

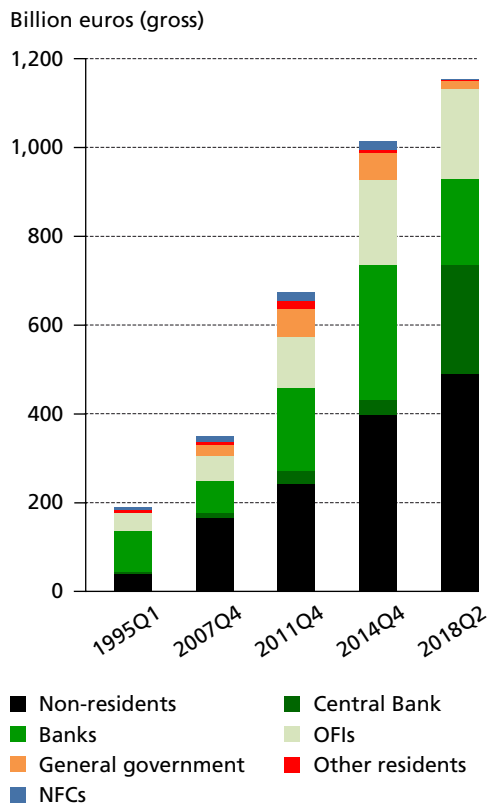
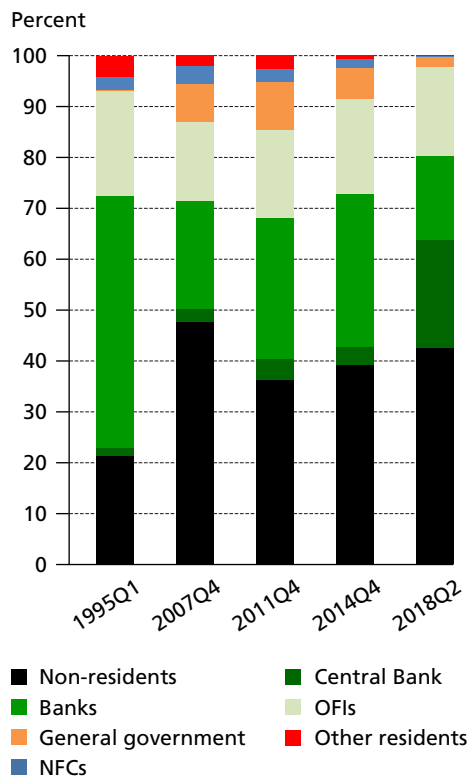


Figure 8 Spain’s public debt securities holdings by sector (percent total)



NFCs = Non-financial corporations.
 OFIs = Other financial institutions.
 Source: Bruegel *Who's afraid of sovereign bonds* dataset.

4 Disaggregating the holding structure of Italian public debt

In recent years, Italy’s public debt has become a pivotal issue around which much of the discussion of the viability of the eurozone has revolved. Indeed, the country has had an astounding history of public debt, which skyrocketed from under 60 percent of GDP in 1980 to around 120 percent of GDP in 1994 (Banca d’Italia 2018b). More relevantly, interest payments as a percent of revenue stood at a staggering 28 percent in 1995 (IMF 2019). Even though this ratio fell abruptly afterwards, mirroring the drop of yields on Italian public debt that accompanied the founding of the European Monetary Union, it remains very high. The Italian situation is thus chosen as an insightful and highly important case for the future of the eurozone. Besides, the data situation is relatively favorable due to the high level of domestic holdings. Nonetheless, the lack of a coherent, publicly available, and disaggregated data set requires data triangulation with all the associated methodological issues arising from that strategy.

While the above sectoral analysis is helpful in comparing countries and identifying broad trends, it is inadequate if we want to analyze the implications of the given holding structure for distribution because the type of financial institutions (e.g., public versus private) matters, for example, in terms of its business model and governance. One important motivation for this disaggregating approach lies in the need to be able to pin down the implications of *indirect* ownership, that is, when households hold government debt via a life insurance or custodian-bank (see also Hardie 2012, 6). This is all the more relevant since direct holdings by households have shrunk tremendously. Therefore, we must now find out (1) which type and token of institutions hide behind the sectors, (2) how much they hold, and (3) who are the ultimate beneficiaries (Section 5). The method employed thus moves into the next layer of the holding structure by going from aggregate to disaggregate (macro-meso) and from institutional to ultimate beneficiary (meso-micro). Given that almost 85 percent of the total Italian public debt is in the form of debt securities (see Appendix, Figure 17), the following analysis is mostly focused on marketable debt.

Non-residents

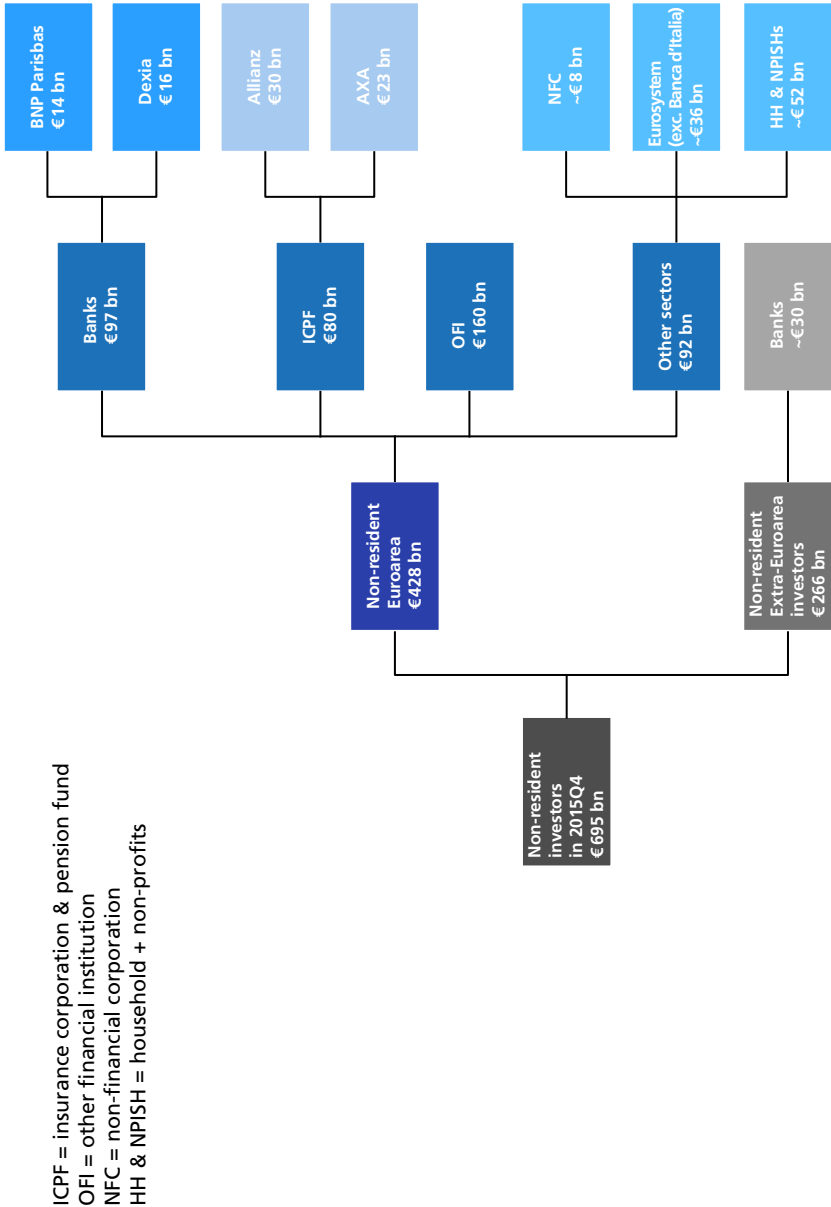
My first aim is to further illuminate who is behind the rather uninformative category of non-residents. As pointed out above, it is estimated that for tax reasons between 9.5 and 16 percent of total non-resident holdings of Italian government debt might be attributable to Italian savers (Banca d'Italia 2011, 57). Combining the estimates from Della Corte and Federico (2016, 10), who use data from the ECB's SHS-S and from the IMF's global survey of portfolio holdings (CIPS), with the data for 2015 from Arslanalp and Tsuda (2019), we can come up with a plausible disaggregation for the sub-categories within "non-residents." These estimates should only be interpreted as very rough estimates since Della Corte and Federico use market value data while Arslanalp and Tsuda report data at face value or adjusted for valuation changes.¹² It should be borne in mind that the data used are from 2015Q4 (see diagram).¹³ Similar to other eurozone countries, a large proportion of foreigners are other eurozone investors: an estimated 428 billion euro are held inside the eurozone and 266 billion euro are held by extra-eurozone investors.¹⁴ Within the category of non-resident eurozone investors, banks

12 I simply use the percentages reported in Table 1 by Della Corte and Federico (DC&F) and apply them to Arslanalp and Tsuda's (A&T) numbers. For example, DC&F report that euroarea investors account for 61.6 percent of total foreign holdings and A&T report €695 billion of foreign holdings, thus: $0.616 * €695 \text{ bn} = €428 \text{ bn}$ for euroarea investors and the residual of €267 to extra-euroarea investors.

13 The illustration is similar to Guglielmi et al. (2017, 19), who report very similar numbers to Della Corte and Federico. Data for the disaggregate breakdown of non-residents refers to 2015Q4 due to data unavailability, while the breakdown of residents is done with the most recent statistical data (2018Q2). The difference should, however, not be too dramatic in the broader scheme of the analysis as non-residents held 695 billion euro in 2015Q4 and 664 billion euro in 2018Q2.

14 According to Arslanalp and Tsuda, of the 664 billion euro, 193 billion euro are attributable to foreign official investors but cannot be ascribed to a specific region.

Figure 9 (Non-exhaustive) list of significant foreign owners of Italian government debt securities as per 2015Q4



ICPF = insurance corporation & pension fund
 OFI = other financial institution
 NFC = non-financial corporation
 HH & NPISH = household + non-profits

Note: Data refer to 2015Q4; percentages are recomputed from Della Corte and Federico and are relative to total government debt securities. Given that the figure is a non-exhaustive overview, percentages and amounts in euros do not add up to 100 percent; the tilde indicates my own estimates. Source: Various (Guglielmi et al. 2017; Arslanalp and Tsuda 2019; Della Corte and Federico 2016; Bruegel 2018; European Banking Authority 2016).

account for roughly 97 billion euro, leaving, according to my estimates, around 32 billion euro to banks outside the eurozone.¹⁵ Eurozone insurance companies and pension funds (ICPFs) account for roughly 80 billion euro. Other financial institutions (OFIs) held about 160 billion euro and are assumed to be mostly asset managers and funds (UniCredit 2019, 5). The remaining uncategorized investors in the eurozone account for approximately 92 billion euro and are likely to be largely foreign official investors (cf. UniCredit 2019). A few large institutional holders can be identified by means of the European Banking Authority (EBA; 2016) data as well as balance sheet data (Allianz 2015). Unfortunately, yet another incongruence emerges because the EBA reports carrying amounts of banks' sovereign debt securities, thus again demanding caution when interpreting the various holdings (Figure 9).

Residents

Using data from 2018Q2, we now move from the external holdings of the Italian public debt to the domestic holdings; the central bank holdings have already been identified in Section 3.

The first category I examine is that of *other residents*.¹⁶ It should be remembered, though, that in both relative and absolute terms this sector has become rather insignificant. The sector consists, on one hand, of households and non-profit organizations, which together account for approximately two-thirds of this category (120 billion euro). On the other, non-financial corporations hold the remaining one-third of 46 billion euro (Banca d'Italia 2018a; Tables 5, 27). We can further learn about Italian household holdings by using the Banca d'Italia's Survey of Household Income and Wealth (SHIW) to find out how the government bonds are distributed across wealth strata.¹⁷ However, it should be borne in mind that in this less significant sector only 10 percent of households reported direct holdings in the 2016 survey (2017b, 87).

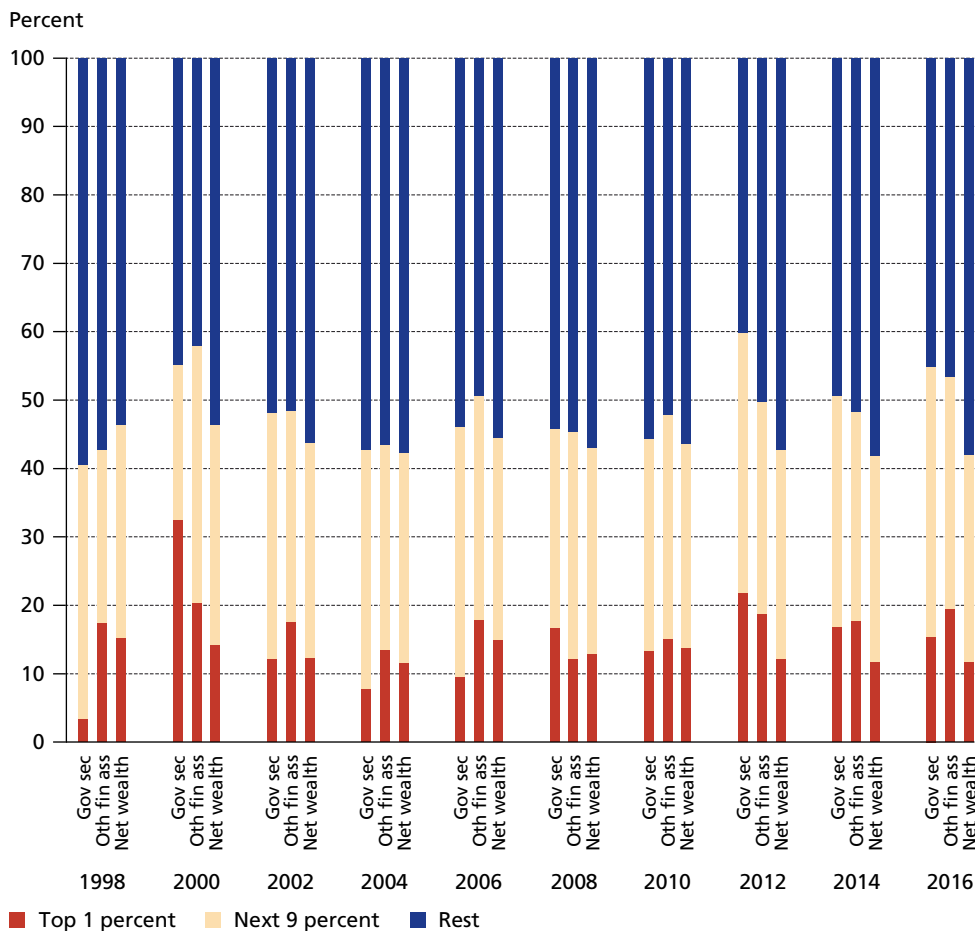
15 To compute this, I take the number for total foreign banks (151 billion euro) from A&T and subtract the euroarea banks' holdings as reported in DC&F.

16 A common issue is that of fiduciary holdings by, for example, banks. However, fiduciary holdings must be reported in the sector of the rightful owner of a financial asset rather than the custodian (e.g., a bank). Thus, if the direct holdings of households are small, we can infer that the large banks' holdings are likely to be for their own portfolio rather than fiduciary holdings for private investors. This inference is not possible for holdings abroad where it might well be that Italian households invest in investment funds abroad, which in turn buy Italian government debt (Della Corte and Federico 2016).

17 The usual caveat of such (self-reported) data applies: due to sampling difficulty of rich households, the estimate of the share of government bonds held by wealthy households is likely to be conservative, the underestimation becoming more pronounced the further we move up the wealth distribution. A study by D'Aurizio and colleagues (2008) extended the SHIW with another survey, allowing them to also include very rich households. This almost tripled the amount of Italian households' average financial wealth they found from 22,000 euro to 59,000 euro (417).

Figure 10 below shows how much the top 1 percent and the top 10 percent hold as a share of total household net wealth, as a share of the total of government debt securities held by households, as well as their share in the total household holdings of other financial assets. The data show that the wealthiest households' share of the total household holdings is very high and relatively stable over time (cf. Garcia-Macia 2018). With the exception of the introduction of the euro that provided a boost to holdings at the top, from 1998 to 2016 the wealthiest 10 percent of households held on average 49 percent of household wealth invested in government debt, while the top 1 percent accounted for 15 percent. This degree of concentration at the top is similar to the share of the top 10 percent in the total household financial assets without government debt (49 percent) and their share of overall household net wealth (44 percent). Of these shares, the top one percent accounted for 17 percent of total household financial assets (excluding government debt) and for 13 percent of total household net wealth.

Figure 10 Households' various forms of savings in the SHIW (share held by wealth brackets)



Note: Percentages are computed as shares of the total wealth held by households in the SHIW. N=between 7,147–8,156 (depending on year). Source: Banca d'Italia's Survey of Household Income and Wealth 1998–2016.

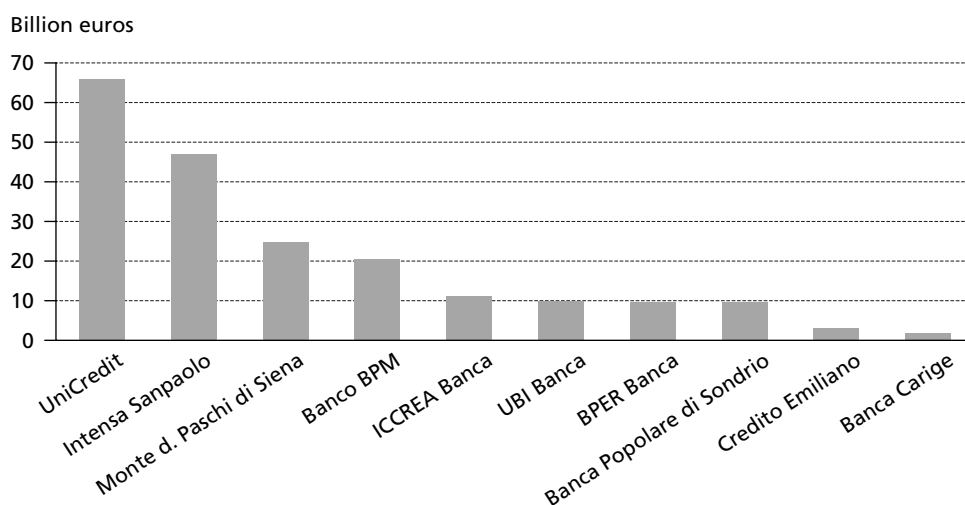
Thus, the concentration of government debt securities at the top is similar to the concentration of financial wealth more generally but is even slightly more pronounced than the concentration of net wealth as such. Put bluntly, the top 10 percent in the sample hold close to half of all household wealth invested in government debt or other financial assets. The slice of government debt held by the bottom 90 percent of the wealth distribution reached a record low of 40 percent in 2012 and only 45 percent in the 2016 survey. Over the years, the concentration in government debt at the top closely followed the concentration of financial wealth more generally in the SHIW. That is, the correlation between the top 10 percent of households' share in government debt securities and their share in other financial assets gives a Pearson's $r=0.74$ for the period 1998 to 2016. Thus, not only could the top 10 percent increase their share of overall financial wealth in the household sector, but this was also mirrored by their rising share of household holdings of government bonds. The implications of this will be discussed in Section 5. In summary, I find that the interest income received from directly holding government bonds rises disproportionately with a household's position in the wealth distribution (Figure 10). We next consider in more detail the holdings of financial institutions.

We now examine more closely the domestic *banking sector's* holdings of domestic sovereign debt. The most authoritative data set for this purpose is again the EBA's most recent EU-wide transparency exercise (2018). Below are the ten most significant Italian banks in terms of government debt ownership.¹⁸ Even though there seems to be a strong bias in favor of bank holdings of public debt in continental Europe more generally (Andritzky 2012, 13), Italian banks' holdings of domestic sovereign debt are exceptionally high. It is also striking how highly concentrated the holdings are: UniCredit and Intesa Sanpaolo together held more than the remaining Italian banks in the EBA test combined. Incidentally, Unicredit is not only the largest Italian private bank and one of the most significant holders of government debt, but also the most important primary dealer in the Italian government debt market ("List of Specialists in Government Bonds" 2018) as well as a shareholder of the Banca d'Italia. While this finding cannot be explored here, it points to the highly institutionalized nexus between a few select big banks and the state (Figure 11).

Even more striking, however, is something that is not covered by looking at government debt ownership through the lens of debt *securities*. For all other sectors, the differences between gross debt and debt securities held in the respective sector are unsubstantial. But this is not true for the banking sector, where non-security forms of government debt account for roughly 270 billion euro as per 2017Q4 (Banca d'Italia 2018b). This is almost exclusively due to debt being held by the largely government-controlled credit institution Cassa Depositi e Prestiti. On top of its 57 billion euro in Italian government debt securities, it holds 236 billion euro in loans to the Italian government (Cassa Depositi e Prestiti

18 By way of exception, this data also includes – in addition to government debt securities – direct loans to the government because it is a crucial component of this sector's lending to their sovereign.

Figure 11 Top 10 private Italian banks' holdings of their sovereign's general government debt as per 2018Q2



Note: The amounts indicated in the EBA's stress test are carrying amounts.
Source: European Banking Authority (2018).

2018, 184, 187, 404).¹⁹ As shown in Section 5, the Italian Ministry of the Economy is itself the largest shareholder of Cassa so that this debt is arguably to some extent owned by the government itself.²⁰

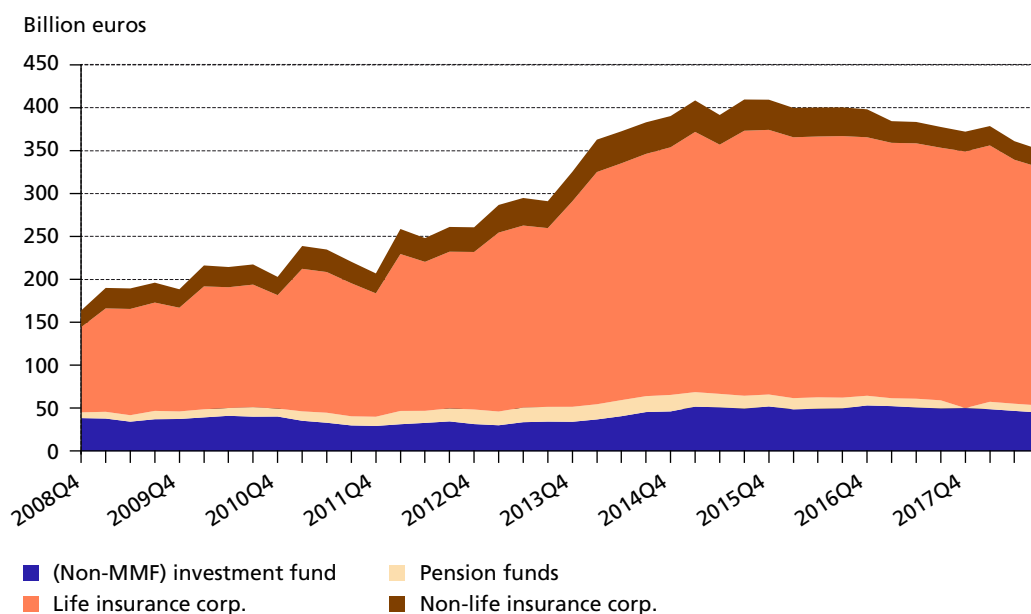
Lastly, I disaggregate which institutions are hidden in the composite of *other financial institutions*. While data from the OECD's Institutional Investors' Assets and Liabilities allows an intra-sectoral breakdown by type of OFI, I also use annual report data to identify some of the biggest holders in the sector and the degree of concentration. Once again, we need to keep in mind that the OECD's data is in market values, while numbers from annual reports are usually in fair value terms. As was shown above, non-financial corporations barely hold any Italian public debt, leaving the lion's share of domestic corporate holdings to financial corporations (Figure 12).

The figure makes clear that this sector's holdings are overwhelmingly dominated by Italian life insurers. Zooming in on the big players shows that the three largest Italian insurance companies hold an overwhelming majority of the total holdings associated

19 During the height of the European debt crisis, Cassa acted as a hidden lender of last resort by increasing its stock of Italian government bonds from a mere 200 million euro in 2009 to 21.4 billion euro in 2012 (De Cecco and Toniolo 2014, 255). Thanks to Fabio Bulfone and Donato Di Carlo for their help in understanding Cassa's holdings.

20 Cassa's lending to the Italian state in the form of non-security loans is based on Cassa's main asset, namely postal savings. To the extent that these are indeed private household assets that are indirectly re-channeled to the government, the real – though mediated – lending of the household sector to the state might in fact be much higher.

Figure 12 Italian general government debt securities held by domestic institutional investors



Note: Available data is limited to what the OECD provides and hence non-exhaustive; amounts are market values.

Source: OECD Institutional Investors' Assets and Liabilities (2018).

with other financial institutions.²¹ The four largest Italian insurance corporations (or insurance arms of the parent company) alone account for around 210 billion euro or 80 percent of total holdings (322 billion euro) within the Italian insurance corporation subsector – Poste Italiane holds 128 billion euro (2018, 147), Generali holds 58 billion euro (2018, 215), Intesa some 46 billion euro (2018, 491), and Unipol 25 billion euro (2018, 85). Another striking finding that is only revealed by going beyond the sectoral view of government debt holdings is the re-appearance of Intesa Sanpaolo as a public debt holder in the insurance sector. This banking group holds Italian government debt via both its banking business *and* via its insurance business. In fact, the EBA data reveal an amount of only 34 billion euro held by Intesa, but its insurance branch holds another 50 billion euro as per 2017Q4. The sectoral view would therefore have seriously underestimated the concentration of Italian government debt in this company. As regards other, non-insurance, financial intermediaries, the Banca d'Italia (2018d; Tables 11, 13, 15) reveals in its financial account data a further breakdown of financial corporations. Unfortunately, no firm-level data on the stock held by asset managers and hedge funds seems to be available. However, the category of non-MMF investment funds is composed mostly of these two types of actors and appears to hold only modest stocks of Italian public debt securities. Nonetheless, anecdotal evidence obtained through interviews with the former head of the Public Debt Directorate of the Italian Treasury, Maria

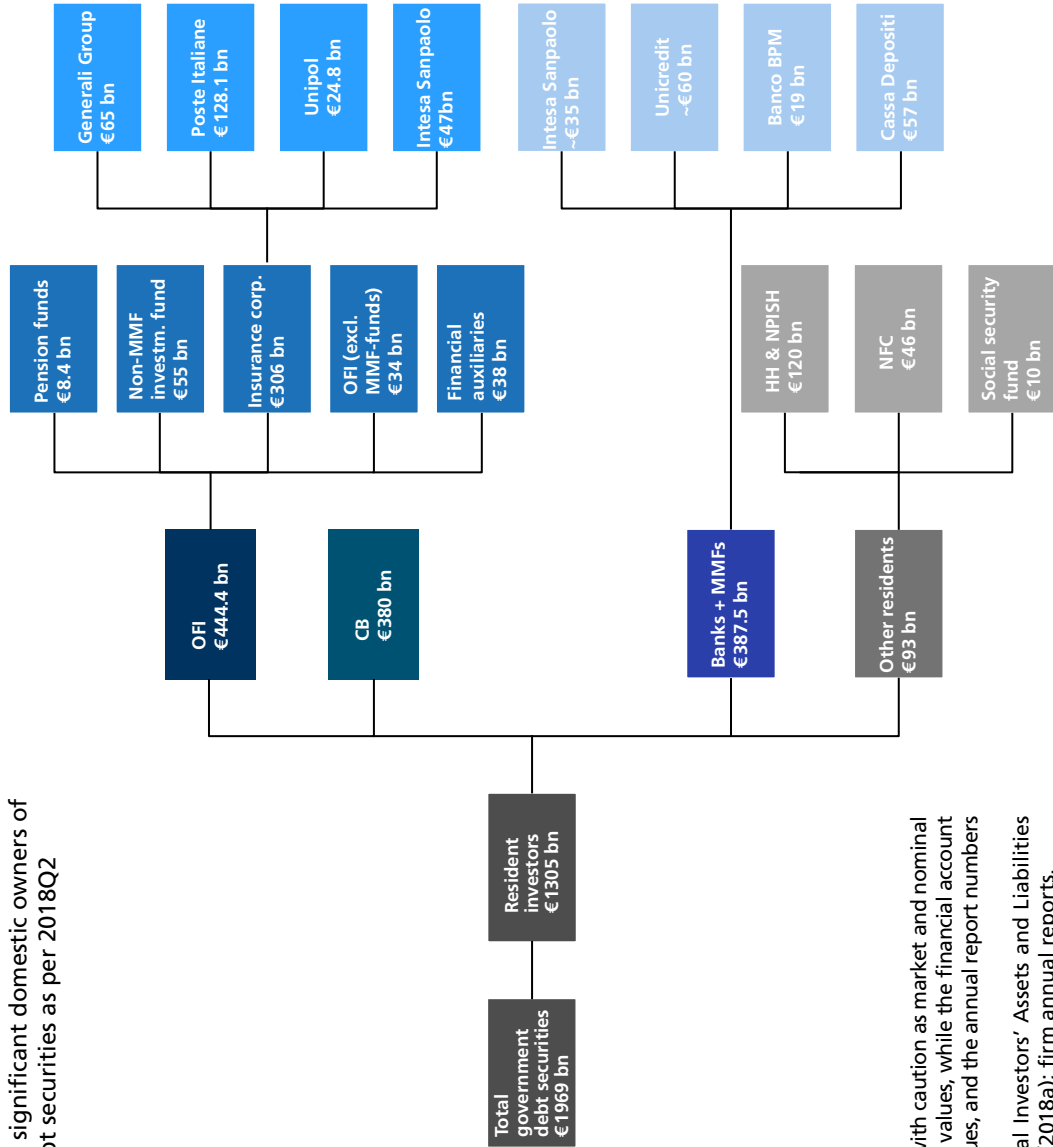
21 It needs to be kept in mind that definitions can differ and the associated numbers vary substantially.

Cannata, as well as an interview with the German Debt Management Agency (Finanzagentur), suggests that hedge funds have recently moved into eurozone sovereign debt, most likely for leverage and arbitrage opportunities (Figure 13).

Five main insights can be gleaned from the disaggregation of Italian public debt holdings. Firstly, the overwhelming majority of public debt is held not by households but by financial institutions. Secondly, this is corroborated by the finding that, even in the foreign sector, we find large holdings of banks and non-bank financial institutions such as insurance corporations and asset managers. Thirdly, within the financial sector, holdings are highly concentrated, with a few significant players, including a government-owned bank itself. Fourthly, the sectoral approach might underestimate the holdings of specific financial institutions where they have both a banking and an insurance arm. Fifthly, the Italian case study shows that, to the extent that households still figure as public creditors, this study finds (financially) wealthy households to hold the bulk of government debt securities. The empirical findings confirm Hager in that, within the household sector, it is predominantly the wealthy households who hold government debt. Similarly, as in Hager's (2016b, 41) findings, the ownership structure of Italian government bonds mirrors the ownership structure of wealth more generally in two ways. On the one hand, we see how the lopsided wealth distribution (Piketty 2014) is paralleled in the concentration of government bonds in the hands of wealthy households. On the other, just as much wealth is nowadays absorbed, managed, and invested by fiduciary financial institutions (banks, institutional investors, asset managers, etc.); the Italian government debt ownership structure is also dominated by financial institutions. However, it is clear that the postulation of a bondholding class of households as direct owners is less accurate than that of a bondholding group of financial institutions (that might in turn serve a class). Italy is thus a case in point of a political economy of sovereign debt ownership that is dominated by financial institutions, public and private, as well as foreigners, although to a lesser extent than other advanced economies. In this regard, Hager is right when he points out that "the class underpinnings of the public debt are now much murkier than they were in the nineteenth century, as broader swathes of the population have an indirect stake in the public debt owned by corporations" (Hager 2015, 507).

The following analysis tackles the question of who benefits from this holding structure of Italian government debt. For this purpose, I investigate how households might benefit indirectly from the holdings of financial institutions through shareholdings in these financial institutions but also through other indirect channels of ownership.

Figure 13 (Non-exhaustive) list of significant domestic owners of Italian government debt securities as per 2018Q2



Note: The numbers should be interpreted with caution as market and nominal values are combined. Bruegel uses nominal values, while the financial account statistics and the OECD data use market values, and the annual report numbers are usually carrying amounts.
 Source: Bruegel (2018); OECD Institutional Investors' Assets and Liabilities (2018); Banca d'Italia Financial Accounts (2018a); firm annual reports.

5 Cui bono?

The main variable under investigation in most studies investigating the distributional effects of government debt ownership is interest payments (Hager 2016b). These are seen as transfers from governments – and by extension taxpayers – to owners of the securities. In Italy, this effect is substantial: interest expenditures on the public debt accounted for, on average, 8 percent (73 billion euro) of total government expenditure from 2010 to 2018 (Ministero dell’Economia e delle Finanze 2019). This has long led some scholars to argue that the fiscal deficit or the new net issuance of government debt is largely destined for servicing the interest on the existing debt (Guglielmi et al. 2017, 9; Spaventa 1984, 127, as quoted in Epstein and Schor 1986). Even though interest rates in Italy have recently dropped thanks to QE (see Appendix, Figure 18), the legacy of high interest rates in the past and a substantial stock of public debt mean that, at present, interest expenditure is still significant.²² Italy’s significant primary surpluses in the last two decades were thus offset by the debt-increasing “snowball” effect. Not only does Italy lack monetary sovereignty but growth is also insufficient to reduce the public debt (Blanchard 2019). Investigating the interest payment channel of the possible distributional effects of public debt is therefore highly pertinent in Italy. This is all the more the case for the beneficiaries of Italian banks’ holdings given that Italian government debt securities accounted for, on average, 9 percent of their total assets from 2010 to 2019 (Appendix, Figure 19). The last section already showed who the direct beneficiaries of this channel are (i.e., the owners), while this section studies the derivative effects of who benefits indirectly.

Distributional effects are usually studied with respect to the personal distribution of income. It has become clear that the method used in the transfer approach of studying distributional effects of the holding structure is not viable when the debt is largely held by institutions rather than households. Thus, a different method of identifying beneficiaries must be chosen that is able to account for indirect channels of benefitting from public debt – both via interest payments and other channels. Various stakeholders might benefit economically from the interest received by, say, an insurance company or bank: shareholders (dividends), employees (salaries, bonuses), insurance policy holders (lowered contribution and higher payouts), depositors (higher interest), and investment managers (fees). While it is impossible to precisely quantify which stakeholder category receives how much, given that banks and insurance companies are dominant holders we can investigate three important groups of beneficiaries: insurance policy/fund holders, depositors, and shareholders. Of course, much also depends on the governance and

22 To the extent that the long-term interest rates charged are autonomous and market-determined (by bidders in government bond auctions in the primary and by supply and demand in the secondary market), the quantitative cost associated with this for taxpayers (i.e., the real rate) and by extension the distributional effect is similarly to some extent a market-determined variable. The determination of the level of the interest rate effect on distribution is therefore possible only through a study of the institutional and market forces that shape yields. Thanks to Waltraud Schelkle for pointing this out to me.

payout structures of individual firms. Indeed, high levels of interest earned from holding government debt will not necessarily turn into higher end-of-year profits or dividend payouts if the interest margin earned on the difference between assets and liabilities is low or the gains are passed on to life insurance policy holders. Nonetheless, preliminary evidence on the shareholders of dominant public debt owners can shed light on one important stakeholder group that commonly stands to gain from profitability. In what follows, I show that the indirect beneficiaries of the main financial-institutional holders of Italian government debt are either OFIs themselves (e.g., asset managers), public financial institutions, or wealthy families and individuals.

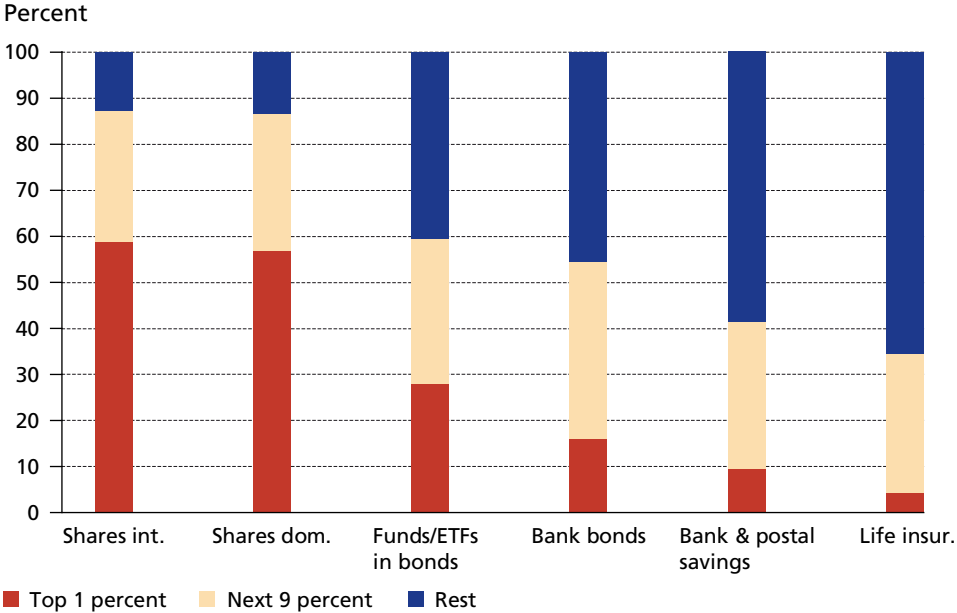
The following diagram gives an overview of the biggest shareholders of the main holders of Italian government debt. A few central nodes can be identified. The major asset managers appear to be shareholders in several of the biggest holders of Italian public debt, which is not surprising given their overall market share (Fichtner, Heemskerk, and Garcia-Bernardo 2017). Next, a variety of banks, including international investment banks as well as the traditional banking foundations, stand out as key shareholders in the largest financial-institutional holders of Italian sovereign debt, although the shareholding structure of eurozone banks is known to be in flux (Véron 2017).

Incidentally, UniCredit and Intesa Sanpaolo – while themselves holders of public debt – are also the biggest shareholders of the Banca d'Italia, which now holds a significant part of the Italian public debt. Looking at the web of shareholders in the major creditors to the Italian state also reveals significant individual beneficiaries, namely Italian billionaire families in their role as investors in insurance giant Generali. As a case in point, Francesco Gaetano Caltagirone is an Italian billionaire businessman who was not only vice-president and the second-largest shareholder of Banca Monte dei Paschi di Siena (holding approximately 25 billion euro of Italian government debt as per 2018Q2), but also became vice-chairman (and with 5 percent also the fourth-largest shareholder) of one of the largest domestic holders of Italian debt: Assicurazioni Generali (Generali Group 2019). Once more, we cannot directly infer the exact value of the dividends that he receives as a result of Generali's profits from holding Italian government debt, but, to the extent that profits do originate from this interest income and are paid out as dividends, he certainly is a major beneficiary. Aside from this peculiarity, the Italian state itself appears to indirectly benefit from its own debt through both its direct and indirect (via Cassa Depositi) shares in one of the most important holders of Italian public debt securities: Poste Italiane. Such "self-indebtedness" through public institutions is to some extent not a new phenomenon. In fact, in the post-war period Cassa Depositi owned almost half of all Italian public debt securities at one point (De Cecco and Toniolo 2014, 192). The scope of this paper does not allow discussion of the political economy implications arising from this empirical fact. However, at least compared to private creditors, the state's indebtedness to public institutions relieves some pressure in terms of real interest expenditure and possibly allows fiscal space on more favorable terms, similar to when the Banca d'Italia was still an integrated central bank (Epstein and Schor 1986) (Figure 14).

While Figure 14 above shows the major shareholders of the biggest creditors of the Italian state, it is also instructive to know how shareholdings in these creditor companies are distributed across household wealth strata. No direct data is available, but we can approximate this by looking at the distribution of free-floating shares in domestic companies more generally in the Banca's household panel data. It turns out that shares in (domestic) firms almost exclusively benefit the very wealthy: the wealthiest 10 percent are estimated to own more than 80 percent of all listed and unlisted company shares and hence dividends received by Italian households (Figure 15). In fact, the wealthiest 1 percent alone account for approximately 58 percent of shares held by households. As such, to the extent that Italian government debt raises the profits of Italian insurance corporations or other financial corporations such as domestic banks who hold the debt, this overwhelmingly benefits the wealthier strata of Italian households. This finding accords with Kurz and Rall's (more dated) analysis of the German case (Kurz and Rall 1983, 60) but also with other studies on Italian household wealth (Garcia-Macia 2018). From the point of view of wealth inequality, this finding is unsurprising because stock market participation is strongly correlated with income and net wealth (ECB 2016). But, as highlighted in the introduction, the regressive effects discussed here concern claims against *public* rather than *private* economic units, which implies that such claims are not merely another instance of general wealth and its unequal distribution.

The distributional effects of this holding structure of Italian public debt are not limited to the indirect *shareholding* channel though. If an insurance corporation earns high interest income from holding government debt, it might lower the premiums charged to its customers and/or increase payouts from insurance products (e.g., life insurances), while banks with high interest income from government bonds might increase the interest paid on saving accounts. Another aspect of this is that we do not know which share of banks' government bond holdings are actually supposed to generate interest income (buy-and-hold), and which share serves other aims, for example, funding other positions (e.g., through repo contracts) or providing custodian services to customers. Even though isolating effects from interest payments is difficult, we can make headway by examining how life insurance policies, postal savings, bank deposits, and bank bonds are distributed across wealth strata more generally (cf. Kurz and Rall 1984, 48–56). To this end, we can again refer to the Banca d'Italia's panel data from the household survey to estimate the share claimed by the wealthiest 1 percent and 10 percent in the total wealth owned by Italian households in various forms of savings. First, to account for the possibility that households might hold government bonds via investment funds, the distribution of savings in the form of funds and exchange traded funds (ETFs) is also examined. The concentration is again highly top-heavy but less extreme than for company shares. In light of the large concentration of Italian public debt in the banking sector, I also analyzed the distribution of bank bonds across wealth strata. This is pertinent given the importance of bank bonds as an investment asset in Italy (Gros 2017). Again, the Banca's household panel data show that more than half of bank bonds held by households are accounted for by the wealthiest 10 percent. Lastly, bank and postal savings as well as life insurance policies are also again top-heavily distributed across

Figure 15 Distribution of various forms of savings in the Italian household sector by wealth bracket



Source: Banca d'Italia Survey of Household Income and Wealth (2016).

wealth deciles but much less so than other forms of savings. In combination with the above finding that Cassa Depositi owns a large share of the public debt, it appears that the public debt holding structure in Italy serves a wider segment of the population than in the US as studied by Hager (2016b) (Figure 15).

Lastly, we can also ask who gains from the Banca d'Italia's large holdings of Italian public debt. This is, however, not straightforward to answer. On the one hand, the Banca has private shareholders (Banca d'Italia 2018c; Reuters 2019) who can in total receive up to 380 million euro in dividends per year. Shareholders are both private and public financial institutions, including UniCredit and Intesa Sanpaolo, but also the social security institutions of the public pension system. Dividends are partly paid from the Banca's interest income on public debt even though no direct correspondence between profits and dividends can be established. Furthermore, of the Banca's profits, a maximum of 6 percent are paid out to shareholders (max. 3 percent per shareholder), and the remainder flows back to the state (Article 38, Banca d'Italia 2016). For example in 2017, the Banca reports that out of the net profit of 3.9 billion euro, shareholders received dividends of 340 million euro (Banca d'Italia 2017a, 20). On the other hand, however, with regards to the Eurosystem's (and hence the Banca's) profits from QE, the ECB indicates that the principal redemptions on the securities purchased under the PSPP are reinvested by the Eurosystem in the issuing jurisdiction (ECB 2017).

Summarizing the empirical analysis of indirect beneficiaries of Italian public debt, the following findings can be established. First, the analysis of who holds shares in the ma-

major corporate creditors of the Italian state reveals that it is again financial institutions that loom large in the indirect ownership structure of Italian public debt: private banks (as shareholders in the central bank), non-profit banking foundations, big asset managers, as well as the state itself (via quasi-public banks or the central bank). At a household level, we find prominent super-rich Italian families as major shareholders in big creditor companies. Moreover, we can see that, insofar as financial corporations earn interest income from holding Italian debt, the wealthiest strata of households ultimately stand to benefit from this source of income – not just as shareholders, but also through insurance products and savings deposits. Indeed, the implications of the analysis of both the direct holdings of Italian government debt by households as analyzed in Section 4 (Figure 10) as well as the indirect channels analyzed here are relatively clear: the concentration of government bonds and hence interest payments is closely related to wealth inequality in Italy as such (e.g., D'Alessio 2012, Table A3). Simply put, the more financial wealth a household owns, the more likely they are to not only own government debt but also other financial instruments that provide indirect channels of benefitting from interest on Italian public debt. Accordingly, the indirect interest income received also rises disproportionately with a household's position in the wealth distribution. However, this concentration is less pronounced when we look at insurance or bank and postal saving channels of "partaking" in the ownership structures of government debt. Since such channels are significant in Italy, this finding stands somewhat in contrast to Hager's (2016b) claim of a US public debt ownership structure that works almost exclusively for the rich. Overall, though, it is still fair to claim that, to the extent that income is generated from public debt ownership, it appears that it is disproportionately the wealthy who stand to benefit from it. In this regard, however, it becomes necessary to specify how financial institutions distribute, if at all, income from their public debt holdings and how this might differ in the case of public as opposed to private corporations. Such analyses of governance structures are, however, beyond the scope of this paper.

6 Conclusion

This study set out to establish who the state's creditors are in the eurozone in order to understand the distributional consequences of different holding structures. The study not only extends Hager's (2016b) work on the US by looking at the European situation but also provides a more detailed methodological foundation for studying the political economy of particular ownership structures. The empirical results show that the direct ownership structure of public debt in Spain, France, Germany, and Italy, while retaining some of its broad contours, has changed in some significant ways. The holding structure of all countries is marked by the internationalization of sovereign debt and, recently, by a high share held by central banks. Similar to Hager's (2015) findings, I also find high concentration of the public debt in the books of a select few financial institutions in Italy. However, in contrast to Hager's finding that traditional banks have declined as holders

and made way for institutional investors in the US, this study finds that in the eurozone, and particularly in Italy, both domestic and foreign (but still eurozone) banks still figure prominently in several areas of sovereign debt. In fact, UniCredit and Intesa Sanpaolo not only emerged as significant holders of the public debt but are found to play a more complex role in the ownership of public debt. For one, Intesa also owns Italian public debt via its insurance arm. Secondly, both institutions also figure as primary dealers as well as being the biggest shareholders of the Banca d'Italia. Thus, domestic banks appear to occupy a more structurally significant and potentially powerful position vis-à-vis the Italian state. These findings highlight the bank-based nature of European sovereign debt markets but also showcase divergences *within* the European financial system in this regard (Hardie et al. 2013). Specifically, Italy is a peculiar case as financial institutions prominently include formerly or still semi-public rather than private financial institutions. Indeed, a closer look at the type of financial institutions holding the Italian public debt made it possible to identify the state itself as an indirect beneficiary of the public debt, both through the finance ministry's stake in Poste Italiane and Cassa Depositi as well as through the Banca d'Italia.

With regards to households as holders of public debt, I find this sector to have been largely replaced in favor of financial institutions and this is most apparent in Italy. In fact, the household sectors' holdings have become practically insignificant, which highlights the weight of – domestic and foreign – financial-institutional holdings, some of which are public or publicly owned, as my findings for Italy show. Broadly speaking, the finding by Hager (2016b) that the holdings of government debt in the household sector are concentrated at the top can be confirmed, though less so in Italy than the US. Similarly, this study finds a strong association of this effect with wealth concentration at the top more generally.

Given the dominance of institutional holdings, this study also assembled concrete evidence on indirect beneficiaries. The shareholder analysis of big Italian creditor institutions revealed a mixed picture of banks, asset managers, billionaires, and the state itself. Examination of which households might stand to benefit indirectly from this ownership structure revealed a strong concentration of financial assets in the top wealth brackets, reflecting wider inequality in wealth. To the extent that interest payments flow from the state to financial institutions, the wealthier an Italian household, the more disproportionately they benefit from this. This finding can be interpreted as showing how high wealth inequality possibly translates into high concentration of public debt in the upper strata. Nonetheless, since postal savings and bank deposits are more evenly – though not equally – distributed, the substantial holdings of Cassa Depositi lessen a potential regressive effect of the public debt ownership structure in Italy as compared to the US. More generally, the variegated types of stakeholders of Italian public creditors revealed that not only the direct but also the indirect holdings of Italian public debt are not as diversified as one might think. Depending on one's viewpoint, this can be interpreted as either a case of welcome fiscal breathing space and favorable in distributional terms or as a sign of lacking market discipline (Véron 2017).

The complexity in the causal chain of interest payments from the state to the ultimate beneficiaries of the public debt holdings makes drawing strong conclusive statements on distributional effects difficult though. This is all the more pertinent as economies have financialized and financial institutions, in turn, invest idle money from across social classes rather than a small rentier class (Lapavistas 2011, 618). As such, my study accords with Hager in that “[...] the new aristocracy includes a whole array of intermediaries, many of which cannot be said to work exclusively in the interests of the wealthy elite” (2015, 513). Moreover, the question of what the distributional effects are when the state figures as an indirect beneficiary of its own debt remains open. One possibility is that public debt ownership is less regressive in its distributional effects in this case. But even in the case of the holdings of the Banca d’Italia it might appear that a certain part of the interest received on the public debt is “leaked” to shareholders (i.e., domestic banks) and therefore has possibly regressive distributional effects. Thus, the finding of a less regressive ownership structure in Italy than in the US should not be seen as indicating class neutrality. Private financial institutions, domestic and foreign, still hold around – or even more than – half of the outstanding stock of Italian public debt securities. Given that private financial institutions are ultimately owned by (mostly wealthy) households, this dimension still suggests that the public debt ownership structure works to a significant extent in favor of wealthy households.

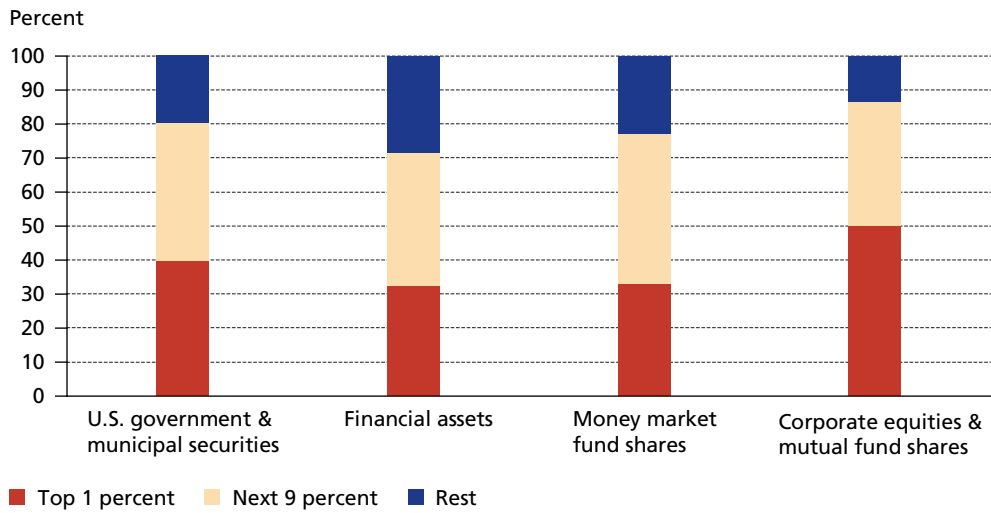
The empirical work provided in this study also enables further investigation of how, for example, shareholders benefit not only in monetary terms (e.g., interest income) but also exert powerful control over the state. While this study’s methods were tailored to a study of distributional effects rather than questions of power, it seems only natural to ask to what extent ownership of public debt also translates into power, as is done by recent work in political economy (Hager 2016b; Roos 2019; Streeck 2014a). As such, Italy is again an interesting case because of the peculiar ownership structure. However, it is clear that it is insufficient to only study the outstanding stock of public debt that is held and traded in the secondary market. The role of primary dealers in the nexus between the debt state and finance should also be investigated more thoroughly from a political economy perspective.

The results of this study should not be interpreted as implying that public debt is necessarily a regressive fiscal tool. The overall or net effect of a given government debt ownership structure depends, arguably much more, on aspects such as how the borrowed money is spent, how the debt is repaid, and what the current cost of borrowing is in relation to growth (see, e.g., Blanchard 2019). As such, while changing the holdings structure to include wider strata of society would seem to require first ameliorating wealth inequality, undesirable distributional effects can also be countered by a highly progressive tax (e.g., a capital levy) to repay the debt (Kalecki 1943). Furthermore, self-indebtedness via public developmental banks has long been a feature of sovereign debt and might continue to open fiscal space without increasing the real interest burden. However, this raises the issue of how to consolidate government debt in national accounts statistics, which cannot be addressed here. Indeed, several areas of research

could not be tackled in this study, such as the role of the identified ownership structure in power constellations between finance and the state, or how various ownership structures can be interpreted in terms of monetary financing regimes whereby central banks and other public institutions buy their own sovereign's debt. What is more, with a dramatically changed role of government bonds in wider macroeconomic and financial considerations, not only the very idea of ownership must be re-conceptualized but also the hierarchy of functions that government bonds play in modern economies. At the very least, this study hopefully provided – as much as empirically possible – a better data foundation on which to grapple with these questions.

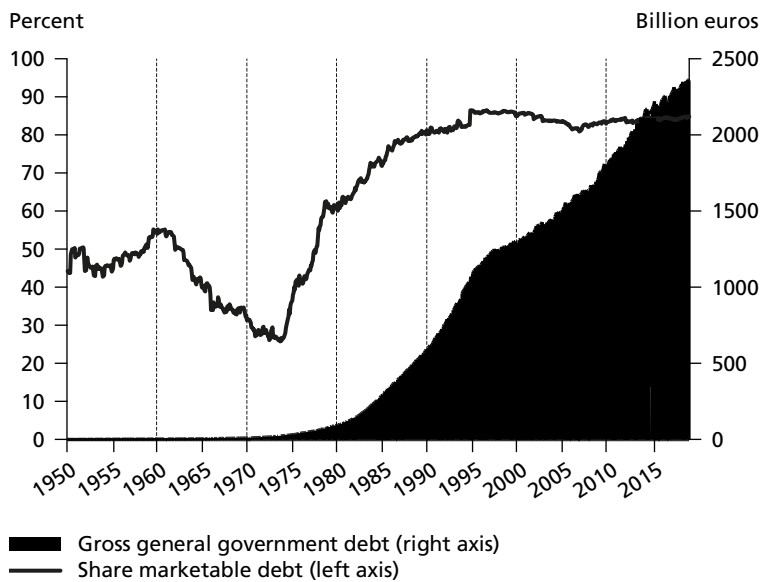
Appendix

Figure 16 US household ownership share by wealth percentile



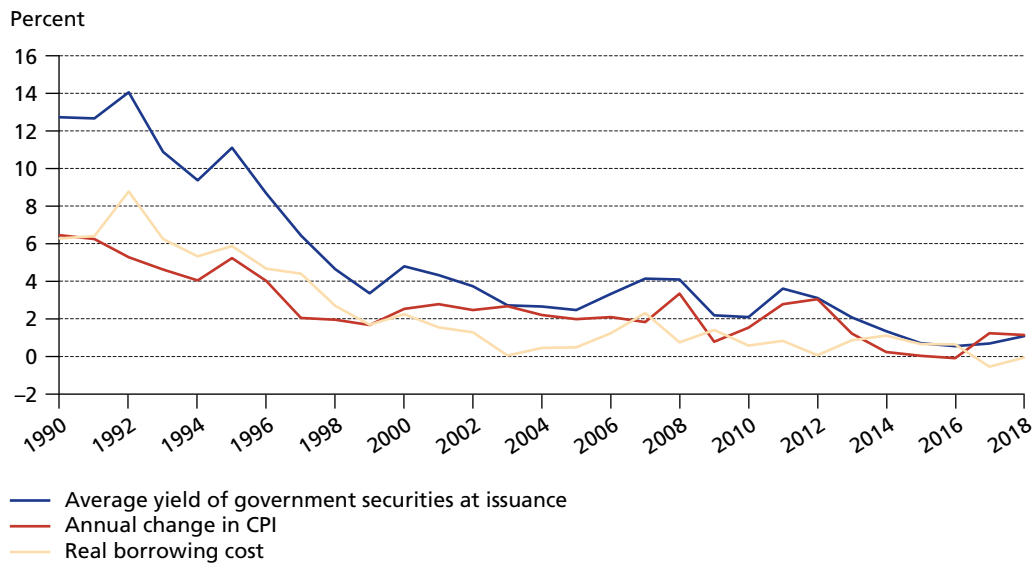
Source: Federal Reserve Distributional Financial Accounts (2019).

Figure 17 Italian public debt: share of debt securities (i.e. marketization)



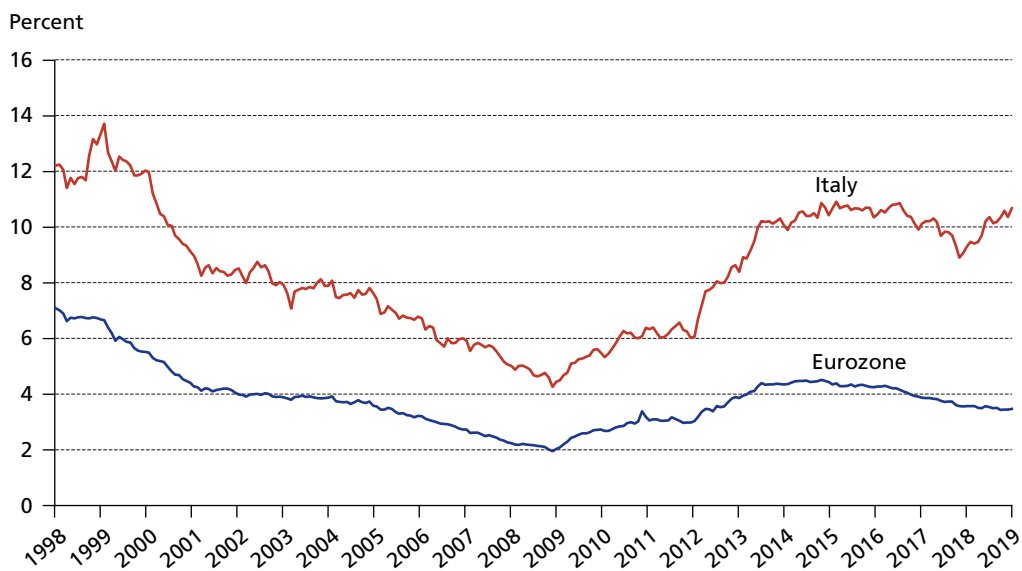
Source: Banca d'Italia's *The Public Finances* (author's calculation).

Figure 18 Italy's public debt yield, inflation and (real) public borrowing cost



Note: Real borrowing cost is calculated as average yield less CPI.
 Source: Ministry of Economy and Finance, Italy; OECD (author's calculation).

Figure 19 Domestic government debt securities as share of total assets of banks (average in percent)



Source: ECB Statistical Data Warehouse (author's calculation).

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