Of Banks and Budgets

How Financial Crises Shaped the Modern Tax State

Julian Limberg

Thesis submitted for assessment with a view to
obtaining the degree of Doctor of Political and Social Sciences
of the European University Institute

Florence, 17 May 2019

European University Institute
Department of Political and Social Sciences

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Examining Board

Prof. Philipp Genschel, European University Institute (Supervisor)
Prof. Anton Hemerijck, European University Institute
Prof. Kenneth F. Scheve, Stanford University
Prof. Laura Seelkopf, Ludwig-Maximilians-Universität München

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Department of Political and Social Sciences - Doctoral Programme

I Julian Limberg certify that I am the author of the work "Of Banks and Budgets: How Financial Crises Shaped the Modern Tax State" I have presented for examination for the Ph.D. at the European University Institute. I also certify that this is solely my own original work, other than where I have clearly indicated, in this declaration and in the thesis, that it is the work of others.

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Acknowledgements

I wish to make use of this space to thank a few friends and colleagues. First, I am grateful for the superb supervision that Philipp Genschel has offered throughout the last four years. Philipp helped me get my project on track, granted me the freedom to develop my own ideas, provided sharp comments on various drafts of the thesis, and gave me guidance when I needed it. I could not have wished for a better *Doktorvater*.

Furthermore, I have profited tremendously from the expertise and guidance of Laura Seelkopf. Laura has accompanied my dissertation from the beginning onwards and helped me understand how political science works. Working as a research assistant in Laura's and Philipp's project on the Tax Introduction Database has improved my understanding of modern taxation worldwide and has enabled me to explore the historical dimension of the crisis-tax nexus.

The main idea for this thesis emerged from working on a term paper for a workshop on "The Political Economy of Taxation" organised by Philipp and Laura at the EUI. I was glad to meet Ken Scheve at that workshop, who provided excellent comments on said paper. Now, I am even more delighted that he joined my PhD committee as an external reviewer. Furthermore, I thank Anton Hemerijck for agreeing to join my jury as the internal reader.

Several other brilliant social scientists have helped me improve my work considerably by commenting on parts of it: Christian Adam, Björn Bremer, Reto Bürgisser, Richard Eccleston, Julia Gray, Aline Grünewald, Lukas Hakelberg, Martin Höpner, Christoph Knill, Thomas Rixen, and Yves Steinebach. The EUI provided excellent conditions for pursuing a PhD. In particular, I want to thank the EUI Library for support-

ing me by getting hold of plenty of old sources on historical taxation. Furthermore, I profited from research stays at the MPIfG in Cologne and at the BIGSSS in Bremen. I thank both institutions for hosting me.

It is not primarily the magic of Tuscany that makes the EUI such a special place, but first and foremost the friends you make there: the British group (Katy, Becca, Joe, Olli, Luigi, and Nick), the EUI tax cluster (Paula, Per, Youssef, Jakob), the Germans (Julia, Wiebke, Jonas, Louisa, Sophia, Theresa, Martin, Matthias, Leo), all the wonderful 2015 SPSers, and many more. In addition, I thank Malick Meyer for almost 30 years of friendship.

I would not have finished this thesis without Ellen Halliday. Thank you for all the support and for also being there. Finally, I am grateful to my family, Moni, Uwe, Jannes, and Malte Limberg, who have helped me get throughout all the minor and major personal crises that life has to offer. I dedicate this thesis to them.

1. Introduction

1.1 Taxing Income

Taxing income has been the gold standard for redistributive taxation in the last 200 years. No other tax has managed to combine extractive capacities and progressivity as successfully as the income tax. Due to its importance as a sophisticated fiscal instrument, Johannes Popitz even labelled the income tax as the "queen of taxation" (Popitz, 1926, p. 402) – a widely shared view amongst other (political) economists in the first half of the 20th century (R. G. Blakey & Blakey, 1940; Kaldor, 1963; Seligman, 1914a). But what are the driving forces behind progressive income taxation? Most attempts to answer this question stress the role of slowly changing, structural factors. The literature especially emphasises the impact of three broad phenomena: democratic institutions, modernisation, and globalisation. On the one hand, the three theories offer convincing explanations for slow and incremental change in tax policy-making. For instance, we would expect tax policies to look similar across rich, open democracies over the long run of history. On the other hand, these approaches have explanatory limitations. In particular, they have troubles explaining sweeping tax policy reforms. Yet, the most significant – and arguably most interesting – changes to progressive taxation have been legislated in the form of sudden, stark reforms.

One of the biggest changes in tax policy-making was the introduction of the income tax. The first encompassing tax on income was a fundamental transformation of tax policy-making and helped to crucially expand extractive capacities in many countries (Aidt & Jensen, 2009; Mares & Queralt, 2015). If we solely look at a country's

structural factors, a lot of variance in income tax adoption remains unexplained. Why did the UK introduce the income tax 70 years earlier than France? Why did Brazil adopt a tax on income as early as 1924 whilst Spain only introduced it in 1932? After all, both countries were equally integrated into world markets, yet Spain was richer and more democratic. We can find similar explanatory gaps when we look at the development of top marginal income tax rates, a widely used indicator to measure income tax progressivity (Ganghof, 2006b; Scheve & Stasavage, 2010; Swank, 2016b). Increases in top income tax rates have often been sharp and sizeable. In the United States the top rate increased from 7% in 1915 to 77% in 1918. After falling in the beginning of the 1920s, rates were raised again from 24% in 1929 to 63% in 1932. A similar development happened in the United Kingdom. Here, after decades of stagnation, the top income tax rate rose from 8.3% in 1914 to 42.5% in 1917 and again from 50% in 1928 to 66.3% in 1931. Neither one of the three structural theories can explain such encompassing changes. In sum, solely looking at the impact of democratic institutions, modernisation, and globalisation misses large parts of the story.

To overcome the limitations of these approaches, scholars have identified another important explanatory factor: war (Tilly, 1990). In contrast to structural theories, bellicist theory looks at the impact of sudden shocks on tax policy-making. Thomas Paine, a political activist and one of the Founding Fathers of the US, remarked in 1788 that "[w]ar involves in its progress such a train of unforeseen circumstances that no human wisdom can calculate the end; it has but one thing certain, and that is to increase taxes" (Paine, 1908). Indeed, mass interstate warfare is a powerful explanatory approach in addition to structural theories. War can not only lead to rapid boosts in extractive capacities (Besley & Persson, 2008), but it can also increase tax progressivity substantially (Scheve & Stasavage, 2016). However, bellicist theory has limitations as well. For example, many countries have introduced an income tax in the absence of war (Seelkopf et al., 2019). Moreover, the era of mass warfare is over; interstate wars carried out by large armies have mostly vanished (Onorato, Scheve, & Stasavage, 2014; Sarkees & Wayman, 2010). In other words, traditional bellicist theory which deals with the

impact of interstate war on state-making (Tilly, 1990) has lost its main independent variable. Therefore, it cannot explain differences in tax policy-making nowadays.

If both structural approaches as well as bellicist theory leave explanatory gaps, what other factors can help us to understand the evolution of progressive income taxation? This dissertation investigates the effect of stark, asymmetric financial shocks on the development of modern tax states. In particular, I argue that financial crises have shaped progressive income taxation fundamentally via three mechanisms: *revenue needs*, *fiscal fairness* demands, and *ratchet effects*. Looking at the impact of asymmetric shocks other than warfare can offer an explanatory toolkit to analyse sudden changes in the absence of mass wars. Financial crises are especially suited for such analyses: they are relatively old phenomena (>200 years), they happen in regular intervals, and they have affected most countries in the world at least once (Reinhart & Rogoff, 2009b). Thus, looking at financial crises improves our understanding of historical, recent and (possible) future changes in progressive taxation worldwide.

This cumulative thesis consists of three articles. Each article looks at the impact of financial crises on progressive income taxation, albeit from different perspectives. Whilst the first article analyses the effect of financial crises on the modern tax state over the long run of history (Chapter 2), the latter two articles examine the contemporary link between crises and progressive taxation both on the micro (Chapter 3) and on the macro level (Chapter 4). In the remainder of this introductory chapter, I sketch the three theories that deal with the effect structural, slowly changing phenomena on income taxation (democratic institutions, modernisation, globalisation). Furthermore, I outline the explanatory limits of these theories. Afterwards, I turn to approaches that look at the impact of sudden shocks on progressive taxation: first, I give a quick overview of bellicist theory and address its shortcomings. Subsequently, I develop my argument about the impact of financial crises on the modern tax state. Finally, I stress the relevance of my dissertation and give a short overview of the overall structure of the thesis.

1.2 Structural Explanations

Taxation lies at the heart of the nation state (Schumpeter, 1917). Hence, it is unsurprising that I am not the first one to analyse the development of modern taxes. In particular, income taxation has received growing scholarly attention in recent years. Democratic institutions, modernisation, and globalisation are the usual suspects when explaining income taxation across time and space.

All three are structural factors: they describe slowly changing levels of a specific phenomenon. Countries can go through different stages of democratisation, from autocracies to anocracies and to democracies; they can develop into more advanced economies; and they can vary in the degree to which they open up to international markets. Furthermore, these levels are sticky and changes in all three variables are slow. Political systems are fairly stable and processes of radical transition are rare; economic modernisation can take up to several decades; and opening up to global markets mostly happens stepwise.

All three structural approaches have their strengths in explaining long-term developments of tax policies. For instance, rich democracies have managed to generate more revenue from income taxation over the long run of history (Genschel & Seelkopf, 2016). Also, they levy higher top marginal income tax rates than poor autocracies nowadays (Peter, Buttrick, & Duncan, 2010; Prichard, 2016). Furthermore, globalisation has strengthened tax competition between countries, leading to a slow, yet steady decline of tax rates on capital and top incomes (Franzese & Hays, 2008; Genschel & Schwarz, 2011). However, structural approaches do not offer convincing explanations for swift, major tax policy changes. I shortly summarise each of the three structural theories in the following. Moreover, I descriptively show their explanatory potential as well as their limitations.

Democratic Institutions

Since 'no taxation without representation' claims have been at the heart of democratic movements, questions about the link between the expansion of democratic principles and tax policies have evolved inevitably. Yet, the impact of democratic institutions on redistributive income taxation is highly disputed.

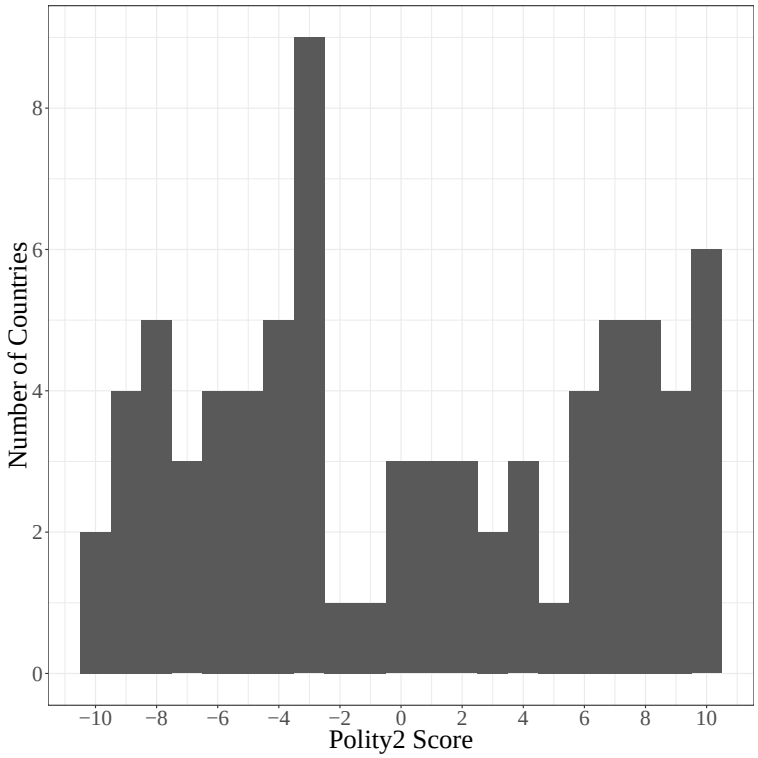
On the one hand, scholars expect democratic institutions to lead to more redistributive taxation. The median voter theory (MVT) models this straightforwardly (Meltzer & Richard, 1981). MVT's starting point is that income distributions are right-skewed, hence, the median income lies below the mean income. All else equal, democratic institutions would enable the person with the median income (the median voter) to vote for redistributive taxation until the median income equals the mean income. Consequently, the expansion of voting rights would lead to a more progressive tax and transfer system (Acemoglu & Robinson, 2006; Boix, 2003). Furthermore, democratic institutions can influence tax policy-making by increasing 'quasi-voluntary compliance' (Levi, 1988). According to Levi, introducing a new tax "is usually a quite public event, accompanied by a high degree of negotiation from a wide range of potential taxpayers" (Levi, 1988, p. 49). From this perspective, introducing taxes means setting up new fiscal contracts, which is easier when tax compliance is high and enforcement costs low. Quasi-voluntary compliance will be high if levying new taxes is perceived as legitimate. Following Scharpf (1970), we can differentiate between input and output legitimacy: input legitimacy refers to the procedure that has led to the decision of levying a new tax, whereas output legitimacy is based on popular support for public policies. Democratic institutions can lead to higher input legitimacy because they give people political power over the decision-making process. Hence, quasi-voluntary compliance (Levi, 1988, chapter 6) is higher in democracies. This reduces extraction costs of especially those taxes which are harder to collect – like the income tax.

On the other hand, autocracies have incentives to introduce an income tax as well. First, income taxes can serve as a tool to restrict the franchise. In Europe, many countries linked voting rights to direct tax payments ('no representation without taxation').

Hence, the definition of who had to pay an income tax was equivalent to the definition of the electorate (Mares & Queralt, 2015). Second, authoritarian rulers might introduce progressive income taxes to prevent processes of democratisation (Acemoglu & Robinson, 2001). In other words, monarchs and dictators can strategically use the tax and transfer system to supply redistributive demands in order to ensure regime survival (Knutsen & Rasmussen, 2018).

The empirical findings on the impact of democratic institutions on progressive taxation are mixed. Aidt and Jensen (2009) as well as Mares and Queralt (2015) look at the introduction of the Personal Income Tax (PIT) in Western economies and find that democracies are less likely to introduce an income tax whilst Scheve and Stasavage (2016) find a small positive impact of franchise expansion on top personal income tax rates.

Figure 1.1: Histogram of Democracy Level in the Year of PIT Introduction



Note: Sovereign PIT introductions. Data come from Marshall, Jaggers, and Gurr (2011) and Seelkopf and Genschel (2018).

To sum up, democratic institutions have been important for the development of the modern tax state (Levi, 1988). However, empirical evidence on the effect of regime

type on progressive taxation is mixed. In particular, theories about the impact of democratic institutions have problems to explain swift changes in tax policy-making. Figure 1.1 illustrates this by plotting levels of democracy at the time of sovereign PIT introduction.[1] The democracy level is measured by the Polity2 score (Marshall, Jaggers, & Gurr, 2011) which has a scale from -10 to 10 (higher values indicate a more democratic system). We can see that income taxes have been introduced at all stages of democratic development. For example, the Ottoman Empire introduced a PIT in 1886 with a policy score of -10 (full autocracy) whereas permanent PIT introduction in the United States of America took place in 1913 when the US had a policy score of 10 (full democracy).

Modernisation

Modernisation theory offers a further explanation for the rise of progressive income taxation. The general argument states that economically more advanced countries put a higher tax burden on income. We can differentiate between three different mechanisms: changes in the economic structure, a growing tax base, and higher administrative capacity.

First, economic development in the last 200 years has been accompanied by a change in economic structures. Industrialisation created a new economic elite whose wealth mainly stemmed from the manufacturing sector. Consequently, the old landowning elites supported income taxation to shift the tax burden away from land and immovable property onto these new industrial elites (Mares & Queralt, 2015).

Second, as countries have become richer, new macroeconomic tax bases have expanded (Seelkopf et al., 2019). This is especially pronounced for income: with growing industrial and manufacturing sectors, the number of people who have generated their wealth from income has increased (Webber & Wildavsky, 1986). As previously existing taxes failed to tap into this new tax base, states may have expanded the use of income taxation.

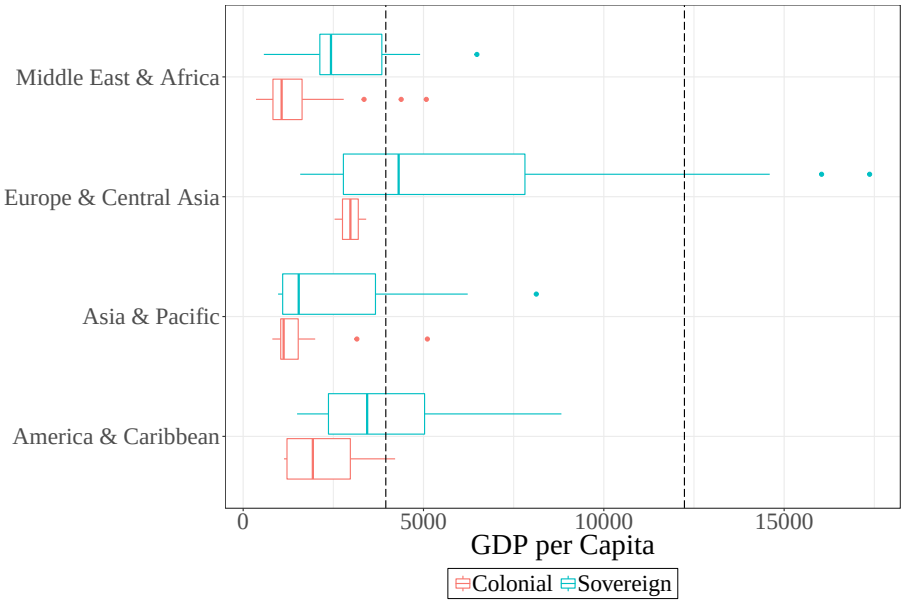
[1] The Tax Introduction Database (Seelkopf & Genschel, 2018) codes a tax introduction as sovereign if it has been levied whilst a country was fiscally autonomous. Thus, this graph excludes countries that took over a previous PIT when becoming sovereign after colonial rule or when splitting from a larger country.

Third, as countries become wealthier, they tend to increase their administrative capacity (Kurtz & Schrank, 2007). Technological advances improve administrative procedures, richer states can hire more public servants, and increasing levels of education lead to more competent staff. As a result, a state's capability to collect new taxes expands with growing wealth (Seelkopf et al., 2019). Income taxes are especially complex to administer. They require bureaucratic capacity to monitor individual income streams as well as to calculate the tax burden due based on various rates and exemptions. Hence, a higher administrative capacity in wealthy states might facilitate the rise of progressive income taxation.

Controlling for economic development is inevitable when exploring the driving factors of progressive taxation. However, a country's wealth is not a sufficient explanatory factor. First, even among economically fairly homogeneous Western countries, PIT introductions span over 100 years (Aidt & Jensen, 2009). Furthermore, evidence on the impact of a country's wealth on PIT adoption is mixed: Mares and Queralt (2015) find that economic development has had a positive, yet not fully robust influence on PIT introduction, whereas Aidt and Jensen (2009) do not find any effect of GDP per capita on income tax adoption. Finally, economic development does not inevitably lead to more progressive income tax systems. In fact, top marginal tax rates have declined substantially worldwide since the 1970s despite continuous growth of GDP and a massive increase in top incomes (Atkinson & Piketty, 2010; Peter et al., 2010).

Figure 1.2 gives an example of the explanatory limitations of modernisation theory. It shows that the average GDP per capita in the year of PIT introduction varies strongly across and within regions. The majority of countries outside Europe and Central Asia introduced the PIT when their economic development was at the stage of a developing or a lower middle income country. The lower and upper threshold for lower middle income countries are indicated by the vertical dashed lines. The interquartile range for sovereign introductions spans across a few thousand Dollars per capita. Thus, although most countries have introduced the PIT whilst making the transition from a lower to an upper middle income country, a huge variation remains

Figure 1.2: GDP per Capita at Year of PIT Introduction



Note: Sovereign and colonial PIT introductions. Data come from Gapminder (2015) and Seelkopf and Genschel (2018). Vertical dashed lines indicate lower and upper threshold of the World Bank's definition of an upper middle income country as of 2017 ($3,955 to $12,235).

unexplained. Furthermore, income taxes have been introduced at lower levels of economic prosperity in colonial countries. Although the thesis does not deal with colonial introductions, this pattern shows that other factors than economic development have to be taken into consideration to understand modern income taxation.

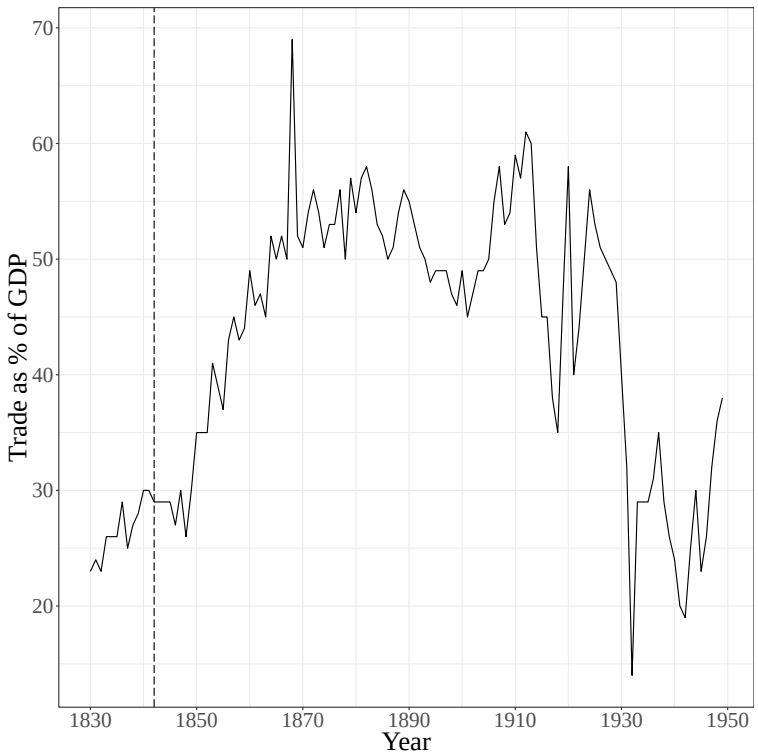
Globalisation

Finally, scholars have identified globalisation as a driver of income taxation. However, the exact mechanisms are contradictory. We can differentiate between the *historical* and the *contemporary* impact of globalisation on income taxation.

Historically, research suggests that globalisation facilitated the rise of income taxation up to the 1950s. As countries opened up to international markets, they reduced tariffs and introduced income taxes to compensate revenue losses (Aizenman & Jinjarak, 2009; Keen & Lockwood, 2010; Seelkopf, Lierse, & Schmitt, 2016). Yet, reducing tariffs and switching to revenues from income taxation can also be regarded as a precondition for economic globalisation instead of its result. Reducing tariffs fosters

integration into international trade flows and opens up markets. We know from both the UK and the US case that discussions to levy an income tax went hand in hand with demands to lower tariffs (and excises) (R. G. Blakey & Blakey, 1940; Mehrota, 2013; Pollack, 2012; Seligman, 1914a). In fact, tariff reforms and income tax legislation happened simultaneously as part of an overall fiscal reform package (Seligman, 1914a). Thus, the introduction of a PIT is a political choice to foster international economic integration instead of a mere reaction to it. Figure 1.3 visualises this by showing the development of trade openness in the UK over time. In the 20 years after the introduction of PIT in 1842 (vertical dashed line), trade volume as a percentage of GDP nearly doubled.

Figure 1.3: PIT Introduction in the UK and Trade Openness, 1830–1950



Note: Vertical dashed lines shows the year of PIT introduction. Data come from Mitchell (2007).

In *contemporary* debates, many authors view globalisation as a drag on progressive income taxation (Ganghof & Genschel, 2008; Kiser & Karceski, 2017; Swank, 2016b). International tax competition (Genschel & Schwarz, 2011) as well as a diffusion of neoliberal ideas (Steinmo, 2003; Swank, 2006) have caused falling top income tax rates and a general decrease in tax progressivity. Correspondingly, top income taxes have

converged on a lower level (Ganghof, 2006b; Holzinger & Knill, 2005; Kemmerling, 2010). This development prevailed from the 1970s onwards up to the year 2008. Since then, however, top marginal income tax rates have increased and diverged again (see Figure 1.5). Globalisation cannot explain this trend reversal.

In sum, globalisation poses fundamental challenges to contemporary nation states. Income tax systems are affected by the transformative power of global markets by no less. Yet, globalisation theory has its limitations. *Historically*, replacing tariffs with revenue from income taxes was not solely a reaction to trade liberalisation. Instead, it was also a precondition for open markets. Thus, the adoption of a PIT was a domestic political choice that fostered globalisation. Furthermore, with regard to *contemporary* changes, globalisation theory cannot explain diverging trends in the taxation of top incomes after the financial crisis of 2008.

To be clear, all three alternative theories – democratisation, modernisation, and globalisation – offer valuable explanatory insights into the development of the modern tax state. The aim of this short literature overview was not to fundamentally challenge these established approaches. Nevertheless, they leave several explanatory gaps. Most importantly, they cannot account for rapid changes of tax policies. Why do countries introduce path-breaking fiscal instruments like the income tax? What are the driving forces behind major tax hikes? And why can we observe swift trend reversals in tax policy-making? Looking at the impact of sudden shocks can help to answer these questions. The utmost shock that a country can experience is arguably a violent threat to its territorial integrity – namely war.

1.3 War and Peace (and Income Taxes)

Wars have been formative events for the modern state (Tilly, 1990). Several studies have found that wars have enhanced revenue extraction and facilitated fiscal capacity building (Besley & Persson, 2008; Thies, 2005, 2007). Furthermore, Scheve and Stasavage (2010, 2012, 2016) have shown that interstate mass warfare has boosted taxation of the rich due to war-induced demands for fiscal fairness. Since Chapter 2 offers an

overview of the different mechanisms of the war-tax nexus, I will not elaborate on them in detail here. The main point is that wars have the potential to explain big, sudden changes in progressive income taxation.

The notion that wars and income taxation are closely connected already existed more than a century ago. During the discussions on the Revenue Act of 1894, which introduced a (temporary) income tax in the USA, Congressman Robert Adams Jr. (Republicans) stated: "An income tax! A tax so odious that no administration ever dared to impose it except in time of war; and you will find that the people will not tolerate it in time of peace" (Cited in Seligman (1914a, p. 498)).

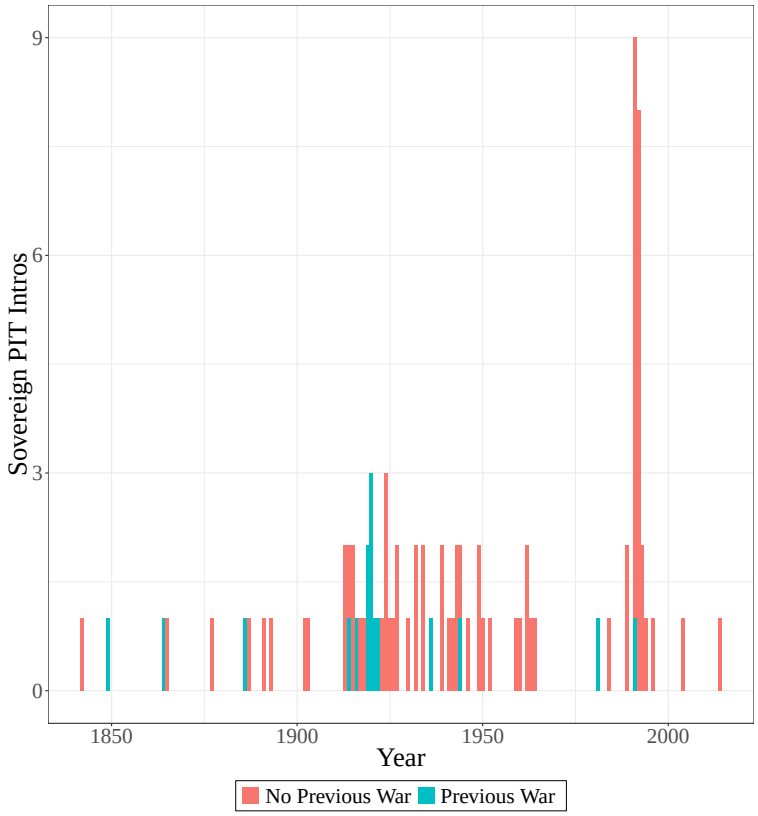
Yet, in contrast to the statement from Congressman Adams, income taxes have proven to be successful in peacetime. Although the phenomenon of interstate wars between mass armies has largely disappeared in the last decades (Onorato et al., 2014), the PIT has continued its global success story. More than 50 PITs have been introduced after the end of World War II (Seelkopf & Genschel, 2018) – thus, at a time when wars had changed fundamentally. Instead of wars fought by mass armies against neighbouring countries, interstate conflicts carried out by smaller, highly specialised forces as well as intra-/extrastate conflicts have prevailed in the last 60 years. Moreover, income taxes are here to stay – even in times of peace. In the 21st century, it is hard to imagine a state that does not tax its citizens' income. Although interstate mass warfare has almost completely vanished since the year 2000 (Sarkees & Wayman, 2010), nearly all countries in the world still levy a PIT today. The exceptions to the rule are mostly countries which are rich in natural resources (for example Brunei, Saudi Arabia, and the United Arab Emirates) or which are under Communist rule (North Korea).[2]

The fact that progressive income taxation has survived the absence of mass warfare does not mean that war has been irrelevant for the modern tax state. However, it shows that there are limits to the explanatory power of bellicist theory. For example, many countries have introduced a permanent PIT in times of peace. Figure 1.4 plots the yearly number of sovereign PIT introductions. Only a few countries have

[2]Bosnia Herzegovina does not levy a PIT on the federal level neither. However, all three subnational entities (Republika Srpska, Federation of Bosnia and Herzegovina, and Brčko District) levy a PIT.

sovereignly introduced a PIT after a previous war. Of these war-induced PIT introductions, most took place until 1950. Nevertheless, an overwhelming majority of countries introduced the income tax without previous war experience. Hence, interstate wars are not a necessary condition for path-breaking fiscal reforms.

Figure 1.4: Sovereign PIT Introductions

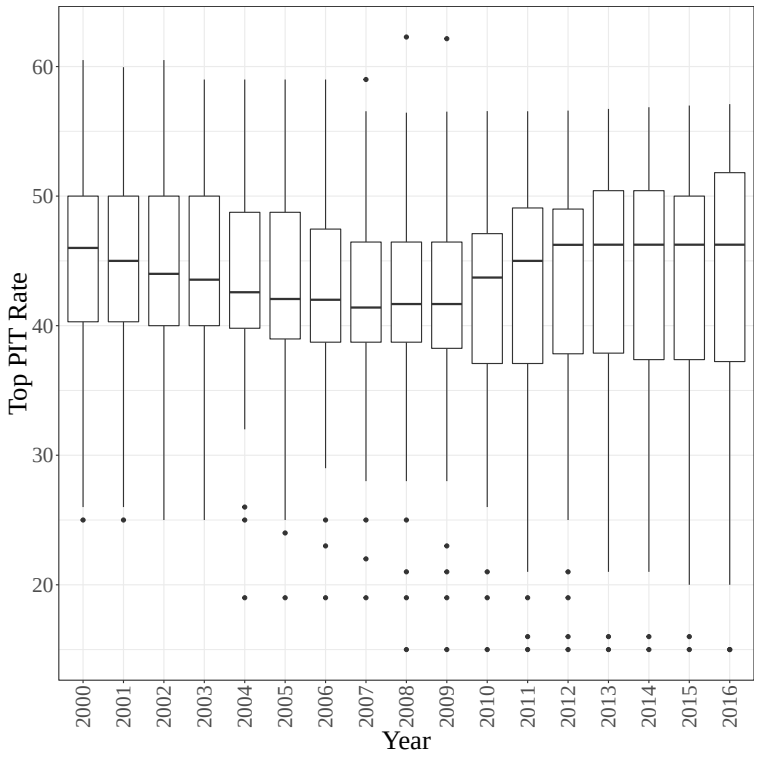


Note: Taxes are coded as being introduced after a previous war if a country participated in an interstate war with at least 1000 battle-related deaths in the previous 10 years. Data come from Seelkopf and Genschel (2018) and Sarkees and Wayman (2010).

In addition to these historical developments, mass warfare – or the lack thereof – cannot explain recent dynamics in income tax policy-making either. From 2000 to 2007, top marginal PIT rates have steadily decreased (Figure 1.5). In 2000, the median top PIT rate for a sample of 35 OECD countries was 46% – by 2007, it had fallen to 41.4%. However, since 2008 top rates have not only increased again (median top PIT of 46.2% in 2016), but rates have also diverged strongly. Whilst the standard deviation was 8.87% in 2007, it had increased to 11.9% in 2016. Again, no country has been exposed to mass warfare during this time period. If both structural approaches as well

as bellicist theory cannot explain these empirical phenomena, what else can?

Figure 1.5: Boxplots For Top PIT Rates 2000–2016



Note: Data cover 35 countries and come from the OECD (2017a).

1.4 Financial Crises and Income Taxation

In this thesis, I argue that financial crises have shaped the development of progressive income taxation. So far, financial crises have received hardly any attention in scholarly work on tax policies. Only in the wake of the crisis of 2008, interest in the relation between ground-breaking economic shocks and the funding side of the public purse has increased (Lierse & Seelkopf, 2016a; Slemrod, 2009). Whilst most studies look at tax policy-making after the Great Recession under the scope condition of global market pressure (Hakelberg & Rixen, 2018; Lierse & Seelkopf, 2016b), domestic dynamics that result out of financial crises have been understudied. Furthermore, the historical dimension of the crises-taxes nexus has largely been neglected. A study by Gillitzer (2017) marks a notable exception. By looking at the impact of the Great Depression on tax policy-making in the US states, Gillitzer shows that economic downturns can lead

to investments in fiscal capacity. However, cross-national historical evidence on the curious link between financial crises and tax policy-making is completely missing.

The lack of studies dealing with the impact of financial crises on tax policies is surprising. As the crises of 2008 has demonstrated, financial meltdowns can shake up societies in their foundations. The last 200 years are full of examples of earth-shattering financial ruptures (Reinhart & Rogoff, 2009b). Previous research has shown that financial crises come with political aftershocks indeed: growth, employment, and housing prices decline (Reinhart & Rogoff, 2009a), political polarisation increases and parties on the extremes become stronger (Mian, Sufi, & Trebbi, 2014), rightist parties gain votes in the short term (Lindvall, 2014), government majorities decrease (Funke, Schularick, & Trebesch, 2016), and cabinet durability shortens (Crespo-Tenorio, Jensen, & Rosas, 2014).

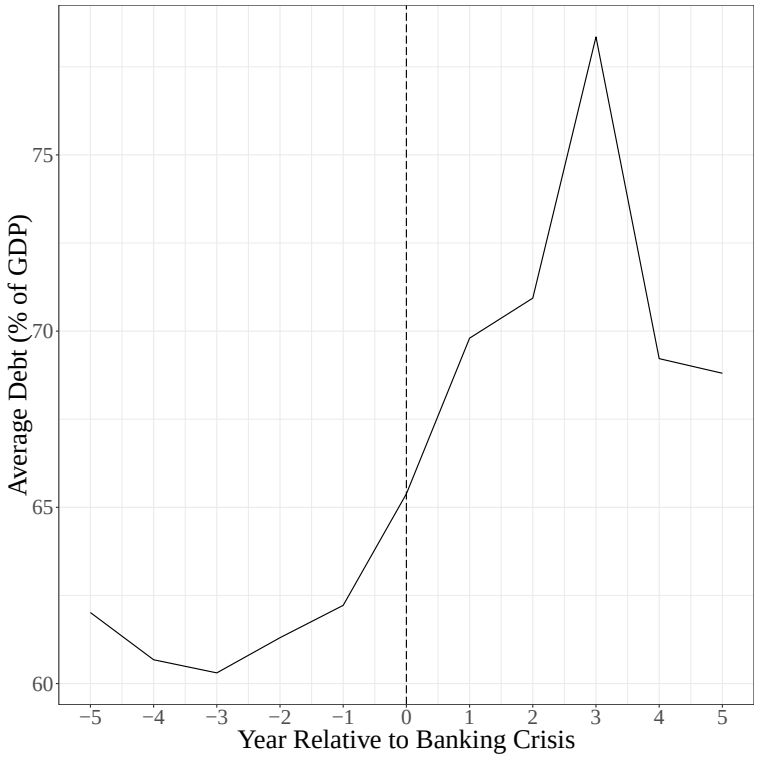
In sum, financial crises have left their imprint on many aspects of contemporary nation states. As revenue extraction marks the core of all state action (Levi, 1988; Schumpeter, 1917), we can expect that financial crises have shaped the modern tax state as well. Based on the rich literature on warfare and fiscal development, I argue that financial crises have influenced modern tax systems via three mechanisms: by causing *revenue needs*, by inducing demands for *fiscal fairness*, and by creating *ratchet effects*.

Revenue Needs

First and foremost, financial crises create *revenue needs*. Crises are expensive. By slowing down economic growth, decreasing employment, reducing company profits as well as real wages, and lowering consumption, financial crises lead to shrinking tax bases. Hence, all else equal, the state extracts less revenue. Furthermore, spending increases via automatic stabilisers such as social policies. Bank bailout packages and economic stimulus programmes can boost public spending in times of crisis even further. The combination of these two dynamics – revenue shortfall and higher spending – puts an enormous fiscal burden onto governments. In fact, financial crises often lead to serious sovereign debt crises (Reinhart & Rogoff, 2013). Figure 1.6 shows the de-

velopment of public debt as a percentage of GDP five years before and after a country has faced the start of a financial crises. In total, the data cover 216 financial crises in 97 countries over the last 200 years. Whilst one year prior to each crisis, average public debt is at approximately 62.5% of GDP, liabilities increase to ca. 66% of GDP in the starting year of a crisis. It is important to mention that financial crises often last longer than one year and that fiscal effects of crises can become even more pronounced over time (Laeven & Valencia, 2013; Reinhart & Rogoff, 2009b). This is reflected in the data: one year after a crisis' starting year, average debt increases even further up to 70% of GDP. In short, financial crises come with a massive fiscal burden indeed.

Figure 1.6: Financial Crises and Public Debt



Note: Years relative to the start of each banking crisis. Data come from Reinhart and Rogoff (2013), Laeven and Valencia (2018), and from the IMF Historical Public Debt Database (Abbas, Belhocine, ElGanairy, & Horton, 2010).

How can governments react to fiscal distress? In principle, states have three main options of how to face fiscal pressure and increases in debt: they can default on public debt, they can cut expenditure, and they can increase revenue. Defaulting on debt can be an attractive short-term solution (Saylor & Wheeler, 2017). Queralt (2018) shows that the (non-)availability of international credits affects the impact of warfare on fiscal

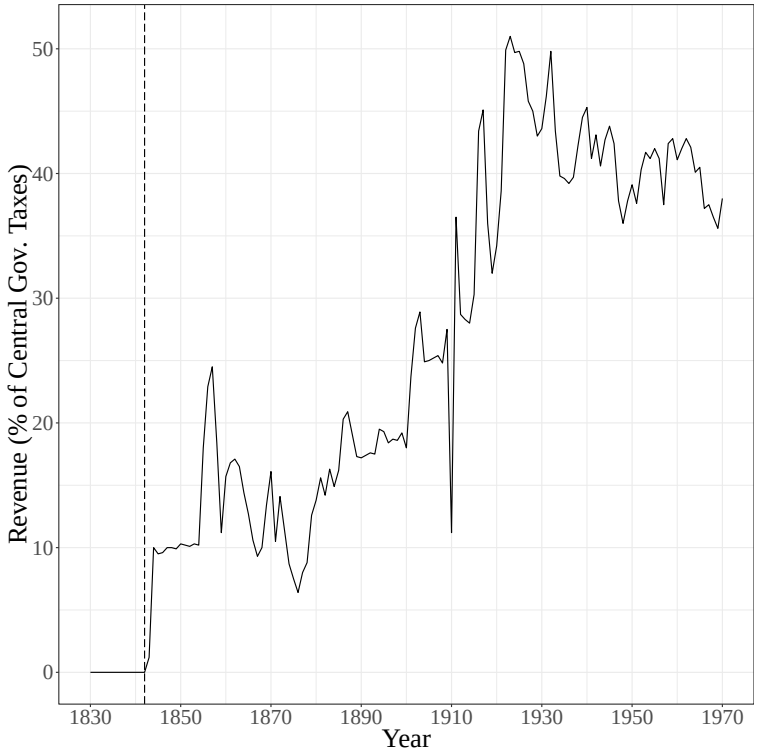
capacity building. When capital is available on international markets, countries can opt for financing wars with loans on which they might default subsequently. In such cases, the effect of war on fiscal capacity is limited. However, defaulting on debt is a risky strategy in the long run. After all, not paying creditors can damage a country's financial credibility and impede future access to loans (English, 1996; Reinhart, 2002).

Cutting expenditure via public policy retrenchment eases fiscal pressure. Whilst this a straightforward fiscal measure, such austerity policies also come at a cost. Retrenchment is unpopular and (electorally) risky (Hacker, 2004; Hübscher & Sattler, 2017; Pierson, 1994). Radical cuts in public expenditure, particularly in social policy programmes, are highly visible and can create public unrest. In democracies, this might cause electoral backlashes (Schwander & Manow, 2017), whilst in autocracies, austerity can endanger regime stability (Knutsen & Rasmussen, 2018).

Finally, revenues can be increased by either reforming taxes which are already in place or by levying completely new ones. Governments can raise revenue extraction via existing taxes by expanding the legal definition of the tax base and/or by increasing tax rates (Genschel, 2002). Take the example of a General Sales Tax (GST): reducing exemptions for goods and services is an expansion of the tax base whereas levying the GST at a higher share of the final price is a tax rate increase. In comparison to reforms of existing taxes, setting up completely new taxes is a bigger institutional transformation. The introduction of such new fiscal instruments allows states to tap into previously untaxed revenue sources (Seelkopf et al., 2019). For example, PIT introduction has boosted revenues in the short run (Mares & Queralt, 2015, p. 1982). Moreover, Aidt and Jensen (2009, p. 162) show that income taxes have already constituted for a remarkable share of total public revenue shortly after introduction. Additionally, new taxes allow governments to expand revenue capacity even further in the future via base exemptions and tax rate hikes. Thus, the introduction of a new tax is also a fiscal investment (Besley & Persson, 2010). The case of the UK is a good example for this. In 1842, the UK introduced a PIT. In contrast to previous income taxes which had been levied temporarily to finance wars, this tax was introduced permanently and in peace-

time. It directly followed a banking crisis which lasted from 1837 to 1839 and forced the British government to take up Dutch and German loans (Reinhart & Rogoff, 2009b, Table A.4.1). Graph 1.7 shows the development of income tax revenue as a percentage of central government revenue over time. Already two years after its introduction, the PIT raised more than 10% of total revenue. The mere policy tool of the income tax was also a fiscal investment since it enabled government to expand revenue extraction over time even further. In the 1940s, income taxes already accounted for 40% of overall revenues in the UK.

Figure 1.7: Income Tax Revenue as a Percentage of Total Revenue in the UK, 1830–1970



Note: Dashed vertical line marks the year of PIT introduction. Data come from Flora (1983).

Increasing revenue via tax policies comes at a cost as well. Like expenditure cuts, paying taxes can be unpopular and may cause political backlashes (Zohlnhöfer, 2007). The (admittedly small) advantage of modern taxes is that they allow legislators to shift the tax burden on specific subgroups of the population. Hence, modern taxes give governments a broader toolkit to react to popular demand so as to minimise political costs.

Fiscal Fairness

In addition to revenue needs, financial crises can influence tax policies by inducing claims for fiscal fairness. If crises are perceived as violations of fairness principles, demand to compensate for these violations may increase (Scheve & Stasavage, 2016). We can differentiate between three aspects of financial crises that can influence fairness perceptions: risk-taking on financial markets, weak financial regulation, and bailouts. Although these three mechanisms will reappear throughout the thesis, I will give an overview of each one of them and explain how they might increase fiscal fairness demand.

First, risk-taking of financial investors is often associated with subsequent crises (Corsetti, Pesenti, & Roubini, 1999; Weller, 2001). Such risk-taking can either be of structural, long-term nature or come in the form of sudden speculative attacks (Eichengreen, Rose, & Wyplosz, 1995). Furthermore, especially wealthy people profit from these financial market dynamics (Volscho & Kelly, 2012). Importantly, speculation might not induce fiscal fairness demands per se. After all, taking risks includes the option of failure as speculation can lead to profits, but also to losses. When loans default and financial investments are unprofitable, speculation is costly and the investor bears the costs of failure by losing money. In such a case, demands to restore fiscal fairness are less likely to emerge because (1) profits from financial risk-taking may be perceived as deserved and (2) speculators are already punished because they have to bear the costs of risk-taking. However, this implies that costs from risk-taking are completely internalised. Yet, speculation on financial markets does not solely cause costs for the individual risk-taker. When speculative bubbles burst, they have a negative effect on all kinds of socio-economic outcomes (Reinhart & Rogoff, 2009a). Looking at lower income groups underlines this point. Lower income groups are less likely to make risky financial investments due to a lack of capital. Yet, they are hit particularly hard by the economic effects of financial crises (Pfeffer, Danziger, & Schoeni, 2013). To sum this point up, financial speculation by richer subgroups entails negative externalities that affect societies as a whole. Thus, financial crises might increase demand

for taxing the wealthy. Not only may their wealth be perceived as less deserved, but higher taxes on the rich can also fulfil the function of internalising the negative externalities of financial risk-taking.

Second, in addition to individual risk-taking, weaknesses in the infrastructure of financial regulations have been blamed for financial crises (Crotty, 2009). In a nutshell, weak financial regulation can set the preconditions for speculation. How might regulatory passivity increase demand for fiscal fairness? Throughout the thesis, I argue that such a lack of regulation can be perceived as an indirect unequal treatment which increases compensatory demands. This concept refers to the work of Scheve and Stasavage (2016). The two authors argue that fiscal fairness claims to tax the rich are strongest when they demand compensation for an unequal treatment of citizens by the state. In times of warfare, the state *directly* treats the rich preferentially; richer people have a lower likelihood of military conscription and they can profit from a higher demand for war-related goods (Scheve & Stasavage, 2010, 2012). A lack of regulatory intervention on financial markets can be perceived as an *indirect* unequal treatment as it allows rich investors to take up systemic risk. In other words, states set the institutional preconditions for speculation and subsequent financial crises. Hence, they enable financial market actors to cause negative externalities. Such an *indirect* beneficial treatment of financial investors vis-à-vis the rest of the population could cause compensatory demands for progressive taxation to restore fiscal fairness.

Third, the financial crisis of 2008 has put a spotlight on financial bailouts. Saving financial institutes with taxpayers' money is not only expensive, but it may also violate personal principles of fiscal fairness. It is a hard political sell to explain citizens why they have to pay for bailing out financial investors who have become rich on financial markets (Volscho & Kelly, 2012). Hence, these bailouts could be perceived as a *direct* unequal treatment (Scheve & Stasavage, 2016). As a result, demands for taxing richer members of society who might profit from bailouts can increase. It is important to mention that financial bailouts are directly connected to a crisis' external effects; the decision to bail out or not to bail out entails a political trade-off. Bailing

out financial institutions can create notions of unfairness due to beneficial treatment. In contrast, the decision not to bail out struggling banks risks even more disastrous economic effects. Nevertheless, this trade-off does not challenge the idea that financial crises induce fairness demands. Both ways, demand for fiscal fairness would increase: either by creating compensatory claims to correct direct unequal treatment (in the case of bailouts) or by causing stronger negative externalities that induce demand for an internalisation of costs (in the case of no bailouts).

In sum, financial crises may increase demand for fiscal fairness and push for higher taxes on the rich. The main idea is straightforward: those people who are perceived as responsible for the crisis and/or as profiteers from state action should pay for the crisis' costs. Income taxation can help to satisfy such demands because of its versatility. For example, levying an income tax for the first time means taxing the wealth of a new financial and industrial elite (Ansell & Samuels, 2014; Mares & Queralt, 2015). Furthermore, with a versatile policy tool like the income tax, governments can react to fairness demands in a flexible way. For instance, policy-makers can increase the top tax rate, close tax loopholes for high income earners, or levy specific surcharges. The additional income tax of 10% which was levied on employees working in the financial sector in Italy after the financial crisis of 2008 is an example of such a targeted tax increase.

Ratchet Effects

Finally, financial crises can lead to long term transformations of the tax system. As reforms of the tax system are sticky, financial crises can create ratchet effects (Widmaier, Blyth, & Seabrooke, 2007). The introduction of a PIT is a straightforward example of such a ratchet effect: most PITs, once introduced, become a permanent feature of the tax system (Seelkopf et al., 2019). There are very few exceptions to this rule. For example, Saudi Arabia introduced an income tax in 1950 but abolished it again in the 1970s (Chaudhry, 1997, p. 76). In the 19th century, countries such as the US and the UK introduced temporary income taxes for a few years to meet war-related expenses

(Aidt & Jensen, 2009). However, most income taxes are here to stay. This reflects the high degree of path dependence in tax policy-making. Two factors account for this: increased public spending and debt dynamics.

First, tax policy-reforms that increase revenue also lead to higher expenditure. For example, more revenue allows governments to expand social protection, raise military spending, and invest in public infrastructure. Once expenses are increased, governments find it extremely hard to scale them back again permanently (Pierson, 1996). Social policies are popular (Pierson, 1994), military spending can create arms races with rival nations (Wallace, 1979), and public investment in infrastructure needs maintenance (Rioja, 2003). Public sector wages are another example. Revenue development has an impact on public sector wages because unions push for higher wages at the negotiation table when states face revenue increases (Di Carlo & Limberg, 2018). Hence, a one time growth in revenue can lead to higher wage costs for the state in the long run.

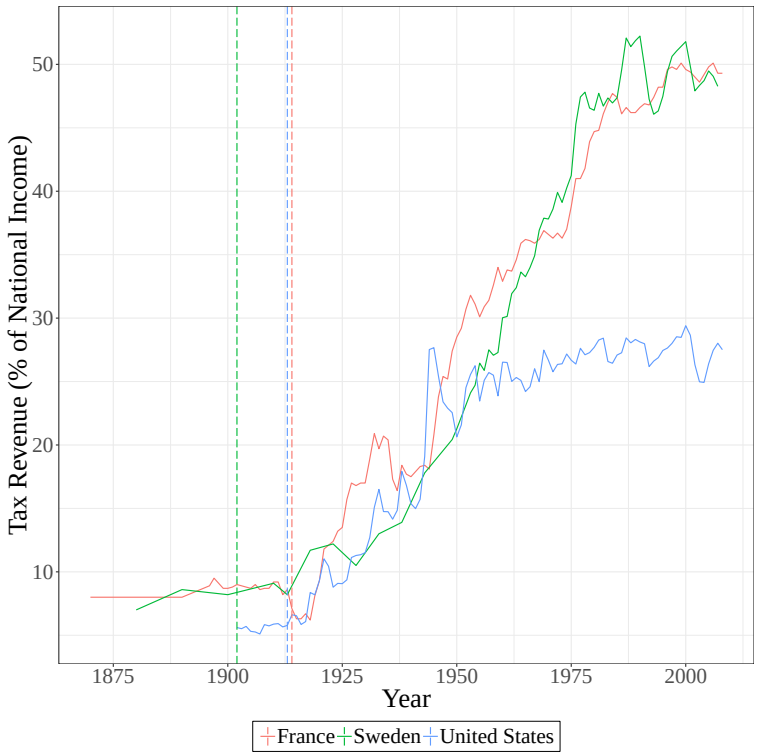
Second, the dynamic of public debt changes with higher fiscal capacity, too. Borrowing money is expensive — and sometimes impossible — without providing financial security. A state's extractive capacities fulfil exactly this security function. Once a country increases its revenue-raising capacity, it expands its capability to borrow money on private markets as well (Dincecco, 2009). Thus, repealing or reducing taxes becomes unlikely because it makes credits more expensive and hampers access to credit markets.

In sum, all three mechanisms – *revenue needs*, demands for *fiscal fairness*, and *ratchet effects* – suggest that financial crises have shaped the modern tax state. In particular, I expect that crises in the financial sector have influenced income taxation. Income taxes are not only an important source of revenue, but they are also a versatile policy tool to shift the tax burden onto richer subgroups of the population.

1.5 Why Bother?

Why is it important to study the driving forces behind progressive income taxation? First, understanding modern tax systems means understanding state capacity. The rise of modern taxation has caused a fundamental transformation of the nation state. By the means of modern taxes, states have managed to increase their revenue-raising capacity to unprecedented levels. The introduction of comprehensive taxes on income stood at the very start of this development. Figure 1.8 shows government revenue as a percentage of national income for France, Sweden, and the US. The vertical dashed lines indicate the respective introduction year of PIT. In each country, tax revenues rocketed after the introduction of the income tax. On average, total tax revenue stood at well below 10% of national income in 1900. Up to 1950, the tax revenue share had already risen to 20-25%. The income tax has been one of the preconditions for this massive increase in extractive capacity.

Figure 1.8: PIT Introduction and Revenue Development



Note: Data come from Piketty (2014). Vertical dashed lines show the year of PIT introduction. Tax revenue includes social security contributions.

Second, understanding the driving factors behind income taxation enhances our knowledge about the development of tax progressivity. The PIT has been the blueprint for redistributive taxation in the last 100 years (Kaldor, 1963). In times of massively increasing top income and wealth shares (Atkinson & Piketty, 2010; Piketty, 2014; Piketty & Zucman, 2014a), tax progressivity is one of the few policy tools that can effectively tackle inequality. Finding out why countries expand progressive taxation can therefore help to identify future windows of opportunity to levy policies that reduce inequality.

1.6 Structure of the Thesis

This thesis consists of three articles which all examine the effect of financial crises on income taxation. However, each of the three articles has a different focus. In the first article named "Financial Crises and the Modern Tax State", I examine whether financial crises have facilitated the introduction of income taxation. Setting a broad historical and geographical scope, the article looks at new, worldwide data on the origins of the modern tax state (Seelkopf & Genschel, 2018). It finds that financial crises are indeed an important, yet largely overlooked explanatory factor for the rise of progressive income taxation. Crisis-induced revenue needs, fiscal fairness demands, and ratchet effects help to understand how financial crises have contributed to the foundations of today's tax systems.

In the second article called "What's Fair? Preferences for Tax Progressivity in the Wake of the Financial Crisis", I take a closer look at the micro level of the crises-taxes nexus. By investigating preferences for progressive taxation in the wake of the financial crisis of 2008, I find that countries which were hit harder by the crisis also have a higher political appetite for progressive income taxation. Fiscal fairness demands help to explain this effect. Furthermore, the article systematically differentiates between distinct fairness dimensions and shows how the impact of some dimensions on tax policy preferences has intensified in crisis-countries whilst other dimensions have remained unaffected. Thus, the article unleashes the underpinning micro mechanisms of the impact of crises on progressive tax policies.

The third article is called "'Tax the Rich'? The Financial Crisis, Fiscal Fairness, and Progressive Income Taxation Worldwide". It takes up the findings of the first two articles and asks whether the financial crisis of 2008 has had a causal effect on progressive income taxation. The article analyses new, worldwide data on top PIT rates and finds that the financial crisis has raised top income tax rates indeed. In line with the overall theoretical argument of the thesis, it provides evidence that both revenue needs and fiscal fairness arguments can explain this finding. Therefore, the article adds a contemporary macro dimension to the historical scope of the first article. Not only have financial crises shaped progressive tax policies in the last 200 years, but they continue to do so.

Finally, the conclusion summarises the findings of the three articles. Putting the effect of the 2008 financial crisis in a historical perspective, I argue that the income tax is not the gold standard for progressive taxation anymore. International economic integration, dynamics of wealth inequality, and the expansion of the income tax to a mass tax have fundamentally transformed the scope conditions for income tax policy-making. I map other progressive taxes that might be more effective policy instruments to tackle inequality in the 21st century. Interestingly, all of these instruments are relatively old taxes on wealth. Yet, whether wealth taxes will face a renaissance depends on popular demand and political supply. As this dissertation shows, financial crises have influenced both the demand and the supply side of progressive tax policy-making. Therefore, the last part of this thesis reflects upon whether financial crises have the capability to revive wealth taxes in the future.

2. Financial Crises and the Modern Tax State

Abstract

Have financial crises boosted path-breaking fiscal innovations? Drawing on the literature that deals with the impact of warfare on fiscal capacity, I argue that financial crises have facilitated the rise of progressive tax instruments by causing revenue needs and demands for fiscal fairness. I test this argument by the means of event history analyses and new, worldwide data on the introduction of the two main pillars of the modern tax state: the Personal Income Tax (PIT) and the General Sales Tax (GST). Furthermore, I examine the (non-)adoption of PIT and GST in the United States. The findings stress the importance of financial and economic crises for fiscal institutions and call for a closer investigation of how non-bellicist shocks have shaped the modern state.

2.1 Introduction

The rise of the modern nation state is inconceivable without the rise of the tax state. Still today, fiscal capacity lies at the heart of state capacity. In fact, "revenue generation is not simply correlated with state capacity, it is its *sine qua non*: that which the state must be able to do if any other goals are to be pursued" (Hendrix, 2010, p. 283).

Due to the crucial role of fiscal capacity for contemporary states, a growing body of literature tries to trace back the historical origins of the tax state (Aidt & Jensen, 2009; Helgason, 2017; Mares & Queralt, 2015). Many studies have identified mass warfare as a major driver of fiscal development (Dincecco & Prado, 2012; Queralt, 2018; Thies, 2005; Tilly, 1990). War has facilitated fiscal innovations such as the introduction of new taxes (Brewer, 1990; Levi, 1988), it has improved administrative capacities (Besley & Persson, 2008), fostered fiscal centralisation (Dincecco, 2009), and increased tax progressivity (Scheve & Stasavage, 2016). However, given the importance of warfare for fiscal capacity, it is surprising that studies so far have largely overlooked the impact of other major asymmetric shocks on fiscal development. Like wars, financial and economic crises have marked historical "'turning points' when old orders ended and new ones began to emerge" (Widmaier et al., 2007, p. 747). Thus, financial crises are 'critical junctures' (Collier & Collier, 1991) that offer room for fundamental institutional transformation.

Based on these considerations, I examine the question whether financial crises have facilitated fiscal innovations. I look at two ground-breaking events for a country's fiscal capacity: the introduction of the personal income tax (PIT) and the introduction of the general sales tax (GST). Both taxes together constitute the financial backbone of modern states and were essential for the unprecedented expansion of government size in the last century (Flora, 1983). Figure 2.1 shows the rapid diffusion of these two taxes. By the beginning of the 2000s, both taxes were a global phenomenon and most countries in the world levied a PIT and a GST – the latter mainly in the form of a value-

added tax (VAT).[1]

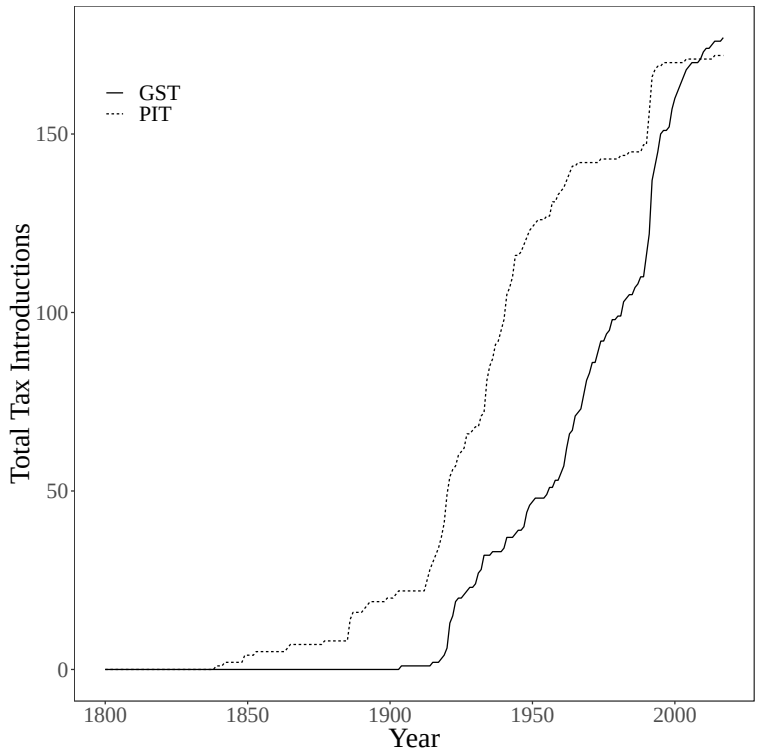
Financial crises can help us to understand why some countries have adopted these fiscal innovations much earlier than others. In this article, I argue that financial crises have boosted fiscal innovations and led to a modernisation of the tax system. However, it is important to differentiate between types of taxes. New progressive taxes like the PIT are more likely to emerge in the wake of financial crises mainly for two reasons. First, financial crises are expensive and create a need for additional revenue (Reinhart & Rogoff, 2009b). Second, the PIT supplies demand for fiscal fairness (Scheve & Stasavage, 2016) as it consolidates public finances by taxing richer segments of society which are perceived to be closely associated with the emergence of financial crises. To the contrary, financial crises are unlikely to increase the likelihood of introducing regressive taxes like the GST because these taxes shift a crisis' costs predominantly onto poorer citizens.

To test the impact of financial crises on fiscal innovations empirically, I use data on sovereign PIT and GST introductions worldwide from the new Tax Introduction Database (TID) which is the most comprehensive source of information for historical tax legislation (Seelkopf & Genschel, 2018). Event history analysis reveals that financial crises have indeed increased the likelihood of PIT introduction. In contrast, countries are not more likely to introduce a regressive GST in the wake of a financial crisis. These findings are in line with my theoretical expectations and hold for a variety of robustness checks. Furthermore, I find additional support for my mechanisms from looking at the (non-)introduction of PIT and GST in the USA.

By looking at the historical roots of the tax state, this study contributes to the growing body of literature that investigates the origins and driving factors of fiscal capacity (Aidt & Jensen, 2009; Mares & Queralt, 2015). First, it expands these studies in geographical and historical scope by looking at a global country sample for the time from 1815-2015. Second, it presents the first empirical test about the impact of asym-

[1] In the following, I use the abbreviation GST to refer to classical general sales taxes (single-staged sales taxes or multi-staged turnover taxes) as well as to modern value-added taxes that allow business to claim a deduction for previously paid sales taxes on inputs. For an overview of different kinds of consumption taxes, see Ebrill, Keen, Bodin, and Summers (2001).

Figure 2.1: Global Development of GST and PIT



Note: The graph shows the cumulative amount of tax introductions for 196 states that still exist as of 2017. Data come from the Tax Introduction Database (Seelkopf & Genschel, 2018).

metric financial shocks on fiscal innovations. The article shows that the mechanisms which hold in the context of mass warfare can also help to explain the fiscal impact of dramatic economic events. Third, the article contributes to studies that stress the importance of fiscal fairness perceptions for tax policy-making (Scheve & Stasavage, 2010, 2012). Instead of simply regarding taxes as revenue-raising instruments *en bloc*, it calls for a closer differentiation between tax types based on their redistributional impact.

I develop my argument as follows. First, I review the literature on the link between warfare and fiscal capacity. Afterwards, I address how financial crises might influence fiscal innovations via very similar mechanisms. Subsequently, I sketch the importance of PIT and GST for fiscal development and discuss how financial crises may have different effects on these taxes. Then, I explain my empirical strategy and present the results. The quantitative analyses is followed by a case study that traces the origins of the US tax system. The final section concludes.

2.2 The Origins of Fiscal Capacity

2.2.1 Fiscal Innovations and Fiscal Capacity

Taxation is central to the modern nation state. As a government's fiscal means are decisive for fulfilling its manifold tasks, taxation marks the core of state capacity. Indeed, fiscal capacity and general state capacity are so closely connected that the former often serves as a proxy for the latter (Hendrix, 2010; Thies, 2007). Furthermore, strong fiscal institutions with an efficient tax bureaucracy and non-arbitrary, credible rules of revenue extraction can enhance economic development and prosperity (Dincecco, 2017; North & Weingast, 1989). In short, high fiscal capacity makes a country richer and stronger. Fiscal innovations, i.e. the introduction of modern taxes, are a central part of fiscal capacity building. Modern taxes help governments to tap into new tax bases, broaden the tax base and increase tax efficiency (Seelkopf et al., 2019). For example, the introduction of the PIT allowed governments to encompassingly tax income streams. In many countries, income has either not been subject to taxation beforehand or it has been taxed very selectively and inefficiently. In Sweden, for instance, income was taxed purely on the basis of appropriation. Or, take the introduction of the first GST.[2] Whilst previous excises only allowed governments to selectively tax consumption, GST inverts excises by taxing consumption of goods and services by default. Consequently, the introduction of GST leads to remarkable increases in central government revenue (Flora, 1983).

In sum, fiscal capacity lies at the heart of general state capacity (Hendrix, 2010). Furthermore, the introduction of modern taxes marks a crucial step in the development of fiscal capacity. Not only do these new taxes boost revenue-raising capacities, but they also enhance the professionalisation of tax administration and minimise economic disturbances. Thus, modern taxes are significant fiscal innovations which have the potential to transform the capacity of the state fundamentally.

[2]Here, I refer to the first general tax on consumption – irrespective of whether this first tax was a classical GST or a VAT.

2.2.2 Wars

But which factors boost fiscal innovations and fiscal capacity? The one major explanatory variable the literature has to offer is warfare. It is almost a truism in political science, economic history, and fiscal sociology that inter-state war leads to increasing fiscal capacity (Besley & Persson, 2008; Dincecco & Prado, 2012). In fact, the effect of war on fiscal capacity is closely interwoven with general processes of state building. Hence, wars do not only boost fiscal capacity, but also contribute to the formation of the modern nation state (Tilly, 1990). This finding is pointedly summarised by Charles Tilly's famous *bon mot*: "War made the state, and the state made war" (Tilly, 1975, p. 42). We can distinguish at least three ways through which warfare enhances fiscal capacity.

First, wars are expensive. States need to pay for soldiers, equipment, and new war technologies to minimise the risk of losing. To finance wars, governments have a variety of long- and short-term options (Zielinski, 2016). The two most dominant ones are increasing revenue as well as borrowing money. States mainly increase revenue via taxation. Governments can either increase tax rates and expand the bases of existing taxes or introduce completely new ones (Brewer, 1990; Dincecco & Prado, 2012; Levi, 1988). As tax rates only change slowly during normal times (Scheve & Stasavage, 2010, 2016) and modern fiscal innovations are hardly ever repealed (Seelkopf et al., 2019), wars increase fiscal capacities in the long run. In principle, states must ultimately pay back loans. Therefore, we would expect war-financing via loans to increase fiscal capacity as well. However, Queralt (2018) shows that this only holds true for domestic borrowing. Contrarily, borrowing money from abroad does not inevitably increase fiscal capacity since countries have the possibility to default on international loans.

Second, inter-state wars boost the administrative capacity of states. Due to the organisational demands of warfare, countries are often in need to professionalise and modernise their public administration (Besley & Persson, 2008; Dincecco & Prado, 2012; Thies, 2005). A higher administrative capacity does not only allow a better collection of existing taxes, but also enables states to introduce new tax innovations that

are administratively more complex (Seelkopf et al., 2019). Furthermore, warfare often leads to fiscal decentralisation, which in turn enhances the administrative capacity to levy new national taxes (Dincecco, 2009).

Third, wars can lead to higher tax progressivity. Since the burden of war falls mainly on people who are economically worse off and rich capital owners profit from a higher demand for war-related goods, claims to compensate for this unequal treatment gain power (Scheve & Stasavage, 2016). Therefore, tax progressivity increases to satisfy demands for a 'conscription of wealth' (Scheve & Stasavage, 2010, 2012).

Taken together, the literature on war and fiscal capacity has identified several mechanisms through which warfare might lead to fiscal innovations. Whereas the first two factors can lead to the introduction and expansion of all sorts of taxes, the compensatory argument exclusively deals with progressive taxation. Surprisingly, however, the existing literature on fiscal capacity building lacks studies that look at the impact of shocks other than warfare on fiscal innovations. Financial crises are a particularly prominent example of such asymmetric shocks. As I will argue in the next section, some of the mechanisms that describe the nexus between warfare and fiscal innovations might also apply for crises in the financial sector.

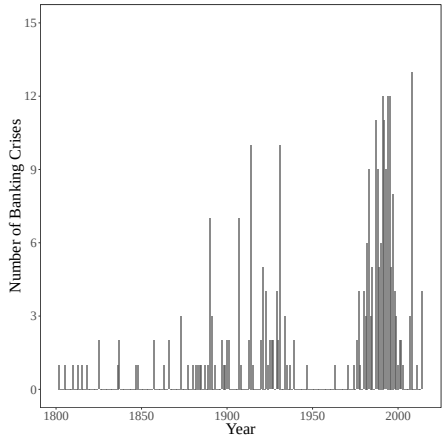
2.2.3 Financial Crises

Financial crises are far from a new a new phenomenon (Kindleberger, 1989). Since the beginning of the 19th century, hundreds of financial crises have taken place all around the globe (Reinhart & Rogoff, 2013). Although the 2008 crisis was exceptionally severe (Claessens, Klose, Laeven, & Valencia, 2013), most of its characteristics were remarkably similar to previous crises (Reinhart & Rogoff, 2009b). Economists differentiate between three major forms of financial crises: banking crises, currency crises, and debt crises (Cassis, 2011; Reinhart & Rogoff, 2009b). However, it is often hard to disentangle these different types of crises. For instance, the financial crisis of 2008 started as a banking crisis and quickly transformed into a sovereign debt crisis. Empirically, banking crises are the type of financial crisis which is easiest to identify comparatively

(Laeven & Valencia, 2013). Furthermore, whilst countries can actively influence the emergence of currency and debt crises via monetary or fiscal policies, banking crises are more exogenous to a country's policies. Therefore, in this study I focus on financial crises which come in the form of banking crises. Figure 2.2a shows the yearly amount of countries experiencing a banking crises since 1800. Although there have been crises since the early 18th century, their absolute number increased heavily during the time from 1880 to 1940. Whilst the post-World War II era was characterised by remarkably stable financial institutions and nearly no major financial crises, the number of crises has rocketed again after the collapse of the Bretton Woods system. Furthermore, Figure 2.2b shows that banking crises are not a phenomenon limited to rich democracies. Instead, countries on every continent have experienced a banking crisis in the last 200 years. Although there is variation and some countries in the Middle East have not been hit by a banking crisis so far, most countries in the world have faced at least one crisis.

Figure 2.2: Banking Crises Worldwide, 1800–2015

(a) Number of Banking Crises



(b) Countries with Banking Crises

Note: Data come from Reinhart and Rogoff (2013) and has been updated using Reinhart and Rogoff (2014) as well as Laeven and Valencia (2018).

How can financial crises lead to fiscal innovations and a higher fiscal capacity? I argue that two possible mechanisms play a role: revenue needs and fiscal fairness arguments. These mechanisms mirror two out of the three above-mentioned warfare mechanisms.

First, just like wars, financial crises are extremely expensive. The most straightfor-

ward costs result from the bailout of financially struggling banking institutes. Laeven and Valencia (2013) identify 124 banking crises from 1970 onwards and find that direct net fiscal costs of systematic banking crises were on average 13.3 percent of GDP. However, these direct costs only cover fiscal outlays to the financial sector. Reinhart and Rogoff (2009b) show that the sole focus on direct bailout costs can be misleading. First, estimates of bailout costs vary greatly across studies as definitions of direct bailout costs are manifold. Second, only looking at direct bailout costs underestimates the overall mid and long-term impact of financial crises. In particular, bank bailout costs do not capture revenue losses that result out of economic downturns in the aftermath of financial crises. Furthermore, bank bailout costs do not account for growing debt due to fiscal stimulus packages (Reinhart & Rogoff, 2009b, p. 164). When these factors are considered, public debt increases by 86 percent on average in the first three years after a financial crisis (Reinhart & Rogoff, 2009b, p. 170). The main finding of all studies about the fiscal impact of financial crises is the same, though: financial crises place a huge burden on government finances. High revenue needs in the aftermath of financial crises might therefore lead to the expansion of fiscal capacity. As mentioned earlier, tax policies tend to be sticky. Hence, introducing new taxes to deal with crisis-induced fiscal problem pressure increases fiscal capacity in the long run.

Second, notions of fiscal fairness in the wake of financial crises can cause an overall increase in tax progressivity. Just like during wartime, this is the case when financial crises and states' reactions to it are perceived as unfair (Scheve & Stasavage, 2016). Three possible factors can spark perceptions of unfairness. First, financial crises are mostly preceded by speculative bubbles (Claessens et al., 2013). Limited regulation of financial markets increases the frequency and severity of crises even more. Since richer people have more capital at hand, they are also more likely to engage in financial risk-taking. Therefore, unregulated financial markets enable them to make profits from pre-crisis risk-taking. Second, this risk-taking can be perceived as unfair because it entails negative externalities for society. In other words, rich investors (and often bankers) might be held responsible for financial crises (Bartels & Bermeo, 2014). If

this is the case, notions of unfairness will increase. Third, citizens might perceive rich people as the profiteers of crisis policies. Bank bailouts are the most straightforward example for this: costs created by the financial risk-taking a relatively small group of richer individuals are pooled amongst all members of society. Especially after the financial crisis of 2008, critiques of these bailout programmes have been articulated prominently. For instance, crisis measures have been characterised as 'lemon capitalism' and 'socialism for the rich' which privatise profits and socialise losses (Stiglitz, 2015). To compensate for perceived unfairness, demands for a higher tax burden on the rich will rise. Governments can increase tax progressivity in two ways: either by raising the progressivity of already existing taxes or by introducing completely new, progressive taxes.

2.3 Cornerstones of the Fiscal State: PIT and GST

To find out whether financial crises have led to fiscal innovations, I will look at two path-breaking events for the evolution of fiscal capacity: the introduction of PIT and GST. Together, the two taxes form the backbone of the modern tax state. Studying the introduction of these taxes is especially suitable for analysing the fiscal imprints of financial crises because of several reasons. First and foremost, both taxes are of central fiscal importance. Nowadays, an overwhelming majority of states worldwide levy a PIT as well as a GST (Seelkopf et al., 2019). Only a handful of states do not collect either of them. Mainly, these are countries like Kuwait, Qatar, or Oman, which rely on revenue from natural resources, primarily gas and oil. For the years 2005-2015, both taxes together generated on average more than 47 percent of all government revenue worldwide (Prichard, 2016). The global mean for PIT revenues as a share of total revenues was roughly 14.6 percent, whilst the global average of GST revenues was 32.9 percent of total revenues.

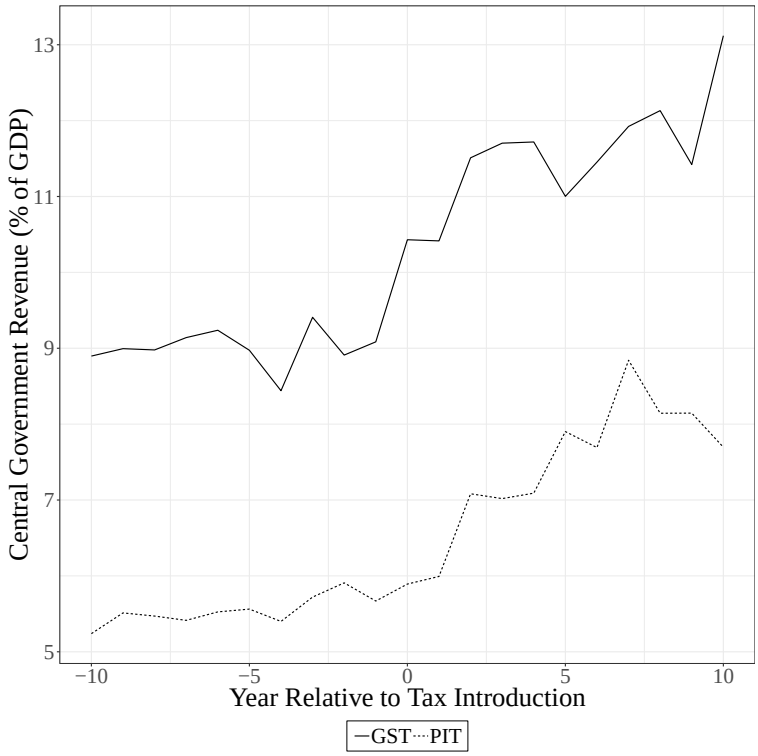
Moreover, both taxes are administratively sophisticated fiscal instruments. Levying a PIT and a GST not only requires a professional bureaucratic apparatus, but it also enhances a country's ability to monitor and regulate economic activity (Daunton,

2001; Mares & Queralt, 2015). Together, the two taxes oversee and regulate the most important streams of economic activity: income (PIT) and consumption (GST). Therefore, both account for the lion's share of a country's tax related administrative capacity and economic oversight.

Finally, the two taxes cover two diametrically opposing tax types: a progressive tax and a regressive tax. The PIT is the textbook example of a progressive tax (Kiser & Karceski, 2017; Seligman, 1914a; Webber & Wildavsky, 1986). The taxable person is directly assessed and pays the PIT duty to the public authorities. This direct assessment allows the tax burden to be modified according to the individual 'ability to pay'. Typically, the absolute and relative tax burden increases with growing income. The progressive scope of the PIT becomes even more striking when we look at it from a historical perspective. During times of industrialisation, introducing a PIT allowed governments for the first time to comprehensively tax economic activity of the new, upcoming industrial elite (Ansell & Samuels, 2014). Typically, these new elites stemmed their wealth from previously untaxed incomes such as profits and trade (Mares & Queralt, 2015). Contrary to the PIT, the GST is considered as a classical example of a regressive tax. The GST is paid to public authorities indirectly via intermediates who are predominantly the retailers. The financial situation of an individual cannot be directly addressed and, therefore, it is difficult to adjust the tax burden accordingly. Furthermore, poorer citizens use a higher share of their disposable income for consumption. Hence, the GST is commonly regarded as a regressive tax since it puts a higher tax burden on lower income groups.

Regarding the two mechanisms of how financial crises can lead to fiscal innovations, we must closely differentiate between PIT and GST uptake. For PIT, both mechanisms suggest that financial crises boost the introduction of PIT. Introducing a PIT can ease crisis-induced needs for revenue. Indeed, previous studies have found out that introducing an income tax is an effective way of raising revenues immediately (Aidt & Jensen, 2009; Mares & Queralt, 2015). Figure 2.3 supports these findings. The graph shows the development of central government revenue before and after the in-

Figure 2.3: Central Government Revenue Development Before and After Tax Introduction



Note: The graph shows the median of central government revenue as a percentage of GDP for 31 countries. Data come from Andersson and Brambor (2018).

troduction of the PIT (dotted line). Data come from Andersson and Brambor (2018). Up to the introduction of the PIT, revenue collection remained stable at just below 6% of GDP in the median of the country sample.[3] However, after the introduction of the PIT, revenue collection increased strongly. Five years after PIT introduction, median central government revenue already made up 8% of GDP. Thus, in relative terms, countries had increased their fiscal capacity by more than 30%. Furthermore, imposing a higher tax burden on the rich by introducing a PIT supplies compensatory demands to make the rich pay for 'their' crisis. Historically, the tax base of the PIT was even more narrowly focused on the rich because of two reasons. First, a high share of people did not receive a formal income from employment or capital investment. Therefore, they were not affected by the income tax. Second, even for those receiving income from employment, PIT exemptions were originally so high that they did not have to pay any

[3]I take the median to ensure that the results are robust to outliers. However, the findings remain similar when the arithmetic mean is used instead of the median.

income taxes at all (Seligman, 1914a). In sum, most income taxes were originally levied on the richest members of society alone and were therefore well-suited to satisfy fiscal fairness claims.

For GST, the mechanisms make less unanimous predictions. On the one hand, crisis-induced revenue needs increase the likelihood of GST uptake. The introduction of a consumption tax is an effective way of raising revenues as well (Keen & Lockwood, 2006). Again, Figure 2.3 shows strong support for these findings (solid line). Thus, GST introduction might be more likely in the wake of a crisis due to fiscal pressure. On the other hand, introducing a GST makes poorer segments of the population pay for the costs of the crisis. This would run against possible demands for fiscal fairness. Thus, we could even expect that the likelihood of GST introduction is lower after a financial crisis. In sum, I expect that the two mechanisms will neutralise each other. Therefore, financial crises are unlikely to facilitate GST uptake.

2.4 Data and Methods

To test my argument empirically, I analyse new data on the introduction of PIT and GST around the globe with event history models. Data on tax introductions come from the new Tax Introduction Database (TID) (Seelkopf & Genschel, 2018). TID is the most comprehensive database on tax legislation with regards to its country coverage and historical scope. It entails information on tax introduction for 220 historical and recent countries for the period 1750 to 2017. I focus my analysis on countries that are still existing nowadays. Furthermore, I am only interested in how financial crises influence *sovereign* tax introductions. Thus, I exclude cases where a tax has been introduced before a country was fiscally independent, i.e. when a tax has been imposed by colonial rulers or when a country has split from a larger legal entity and taken over the tax system.

For PIT, TID entails information on the year of the first permanent introduction of personal income taxation. Importantly, a tax qualifies as a PIT if it is based on the direct assessment of a taxpayer's income (Seelkopf & Genschel, 2018). The taxpayer is

a natural person, although in certain cases legal entities like corporations might also be taxed under the PIT. Note that corporate income taxes are exclusively levied on the income of corporations as legal persons. Hence, they are not considered as PIT and are therefore not covered by my analysis.

GST introduction is coded as the year the first general tax on consumption was introduced. This can either be a classical GST or a VAT. Whilst a classical GST is levied either at the retail stage or at multiple stages (as in the turnover tax), a VAT is always levied at multiple stages of the production chain, with business able to claim a deduction for taxes paid on inputs against the total tax due at outputs to customers (James, 2015). While the two taxes are understood to be economically equivalent as they both are a general tax on consumption, the VAT is widely considered to be technically and administratively superior to the classical GST (James, 2015). Most countries have introduced a classical GST first and then later replaced it with a more efficient VAT. In these cases, I take the introduction year of the classical GST. 28 countries did not levy a classical GST before they introduced a VAT. Here, the introduction year of the VAT is taken.

In total, the sample consists of 80 countries for the analysis of PIT introduction and 134 countries for the introduction of GST. I transform the data into an event history dataset with yearly varying covariates. In line with Aidt and Jensen (2009), I set the start year for PIT at 1815 after the end of the Napoleonic Wars. Hence, countries were at risk of introducing the PIT from then onwards. The first country in my sample to permanently introduce the PIT is the UK in 1842. Since the GST was invented later, its start year is set at 1900. Here, El Salvador was the first country to introduce the GST in 1915. If a country gained independence after 1815/1900, it enters the risk set at the year of (fiscal) independence (CoW, 2017; Seelkopf & Genschel, 2018). I restrict the period of analysis by setting 2015 as the end year. The countries which have not had a PIT or, respectively, a GST by 2015 are right censored. In total, 75 out of 80 countries had introduced a PIT by 2015 and 123 out of 134 had a GST by then. As soon as a country introduces the respective tax, it drops out of the risk set.

I apply event history analysis to estimate the effect of several covariates on the likelihood of introducing a PIT or, respectively, a GST. More specifically, I use Cox proportional hazard (PH) models (Cox, 1975). The likelihood of tax introduction marks a country's hazard rate. As Cox models are semi-parametric, they do not assume a specific shape of the baseline hazard. Thus, I do not define the form of a baseline hazard before running my analysis. However, Cox PH models assume proportional hazards. Hence, they are based on the assumption that the effects of the covariates on the hazard rate remain stable over time (Box-Steffensmeier & Jones, 2004). If the PH assumption is violated, Cox PH models are biased. Therefore, explicitly testing for PH is essential when using Cox PH models (Box-Steffensmeier & Zorn, 2001). I do this by using Grambsch and Therneau's global PH test (Grambsch & Therneau, 1994). Additionally, I check my results for robustness by running generalised linear models that control for time dependence via a cubic polynomial approximation (Carter & Signorino, 2010).

My main independent variable is a dummy that measures whether a country has faced a financial crisis in the form of a banking crisis. Data come from Reinhart and Rogoff (2013, 2014) who have collected information on the starting year of banking crises worldwide since 1800.[4] The variable takes the value '1' if a country has faced the start of a banking crisis in the previous ten years. I choose the time interval of ten years for two reasons. First, banking crises last several years on average (Laeven & Valencia, 2013; Reinhart & Rogoff, 2009b). Yet, especially in the 19th century, the exact termination of a crisis is hard to determine. Furthermore, the effects of a crisis often span over a longer time. For example, Reinhart and Rogoff (2014) show that it takes eight years on average to return to pre-crisis GDP per capita levels. Thus, looking at a longer time period after the initial start of the crisis accounts for the longevity of financial crises. Second, policy reactions after financial crisis come with a time lag. Introducing a major financial innovation like a PIT or GST is an immense legislative endeavour. Law-making processes, parliamentary or non-parliamentary, therefore last longer and tax introductions immediately after the start of a crisis are unlikely. How-

[4]Furthermore, I have expanded their updated dataset by using information from Laeven and Valencia (2018) for recent banking crises in non-OECD countries.

ever, since the choice of the exact length of the time interval can be contested, I check my results by using varying time intervals in the robustness section.

I start by running models that solely include the banking crisis dummy. As this is my main variable of interest, running minimal specifications ensures that my findings are not driven by the choice of my covariates (Lenz & Sahn, 2017). Afterwards, I run models that include several control variables to account for other possible factors that might influence tax introductions. Since the literature stresses the impact of inter-state warfare on fiscal institutions, I include a dummy that turns '1' when a country has faced a major inter-state war in the last ten years.[5] As democracies might be more likely to introduce modern taxes (Levi, 1988), I control for the level of democracy by including the Polity2 index as a covariate (Marshall et al., 2011). This index measures democratic levels on a scale that ranges from -10 (total autocracy) to 10 (total democracy).[6] Another factor that might facilitate fiscal innovations is economic development (Hinrichs, 1966; Kiser & Karceski, 2017). To control for the effect of economic modernisation, I include for a country's GDP per capita (ln level) (Gapminder Foundation, 2015). Also, when many regional peers have already adopted a tax, introduction may be more likely. This can have two reasons. First, countries that became independent at a later point in time when a tax had already spread widely have a higher likelihood to introduce it. Second, countries might learn from regional peers' legislation or simply emulate their policies (Dobbin, Simmons, & Garrett, 2007). To account for these interdependencies, I include a spatial lag that measures the absolute number of countries in a respective region that have already introduced a PIT/GST (Seelkopf et al., 2016). To avoid simultaneity bias, I lag the number of regional introductions by one year (Beck, Gleditsch, & Beardsley, 2006). Furthermore, I include region fixed effects to control for unobserved regional heterogeneity. Finally, I check the results by subsequently including a dummy for communist successor states. I expect these states to be quicker at introducing a PIT/GST after the dissolution of the communist Bloc (Appel, 2011;

[5]Major wars are defined as inter-state wars with more than 1000 battle-related deaths. Data come from Sarkees and Wayman (2010).

[6]Polity2 value is missing for Greece for the time of PIT introduction in 1918. I interpolate the Greek data for this year to keep the Greek case in the sample.

Baturo & Gray, 2009).

2.5 Results

2.5.1 Main Results

Table 2.1 presents the results of the Cox PH models. Except for the minimal specification for PIT (Model 1), the Grambsch–Thernbeau PH test fails to reject the null hypothesis of PH. Model 5 has a global test result of 0.06, which is close to the conventional threshold of 0.05 but still acceptable. Let us first look at PIT introduction. Having experienced a financial crisis in the previous ten years has a positive and highly significant influence on PIT introduction. Hence, countries are more likely to introduce a PIT in the wake of a financial crisis. This finding is robust to adding more covariates.

Table 2.1: Results From Cox PH Models for PIT and GST Introduction

	PIT Introduction			GST Introduction		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Financial Crisis in the Previous 10 Years	0.7713**	1.0776***	0.9632***	0.1125	0.0328	0.0941
	(0.3374)	(0.3463)	(0.3509)	(0.2891)	(0.2963)	(0.2943)
Democracy Level		0.0179	0.0200		−0.0249	−0.0218
		(0.0245)	(0.0247)		(0.0159)	(0.0164)
War in the Previous 10 Years		0.2869	0.3092		0.4921	0.4979
		(0.3669)	(0.3663)		(0.3135)	(0.3174)
GDP per Capita (ln)		0.0219	0.0297		0.0062	0.0119
		(0.1779)	(0.1752)		(0.1331)	(0.1346)
Spatial Lag (t-1)		0.1505***	0.1108***		0.0922***	0.0626***
		(0.0185)	(0.0325)		(0.0121)	(0.0142)
Communist Successor State			1.5974			2.1457***
			(1.0559)			(0.5543)
AIC	506.4178	432.9345	432.5714	963.4125	889.6944	875.5245
Region FE	✓	✓	✓	✓	✓	✓
Num. countries	80	80	80	134	134	134
Num. events	75	75	75	124	123	123
Num. obs.	3685	3585	3585	4074	3918	3918
PH test	0.0048	0.2286	0.2328	0.2506	0.0640	0.5370

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Regarding the control variables, only the coefficients for the spatial lags are positive and statistically significant. Thus, countries follow their regional peers in intro-

ducing PIT. The coefficients for democracy, previous war participation, and for the communist successor state dummy are positive, but fail to reach conventional levels of statistical significance. Economic prosperity does not have a significant impact on PIT introduction either. These results call for a closer investigation of long-standing theories about fiscal capacity building (Prichard, 2016; Seelkopf et al., 2019). For example, the non-significant impact of warfare on PIT introduction is a puzzling finding and could be examined in future work.

For GST, the findings look different. Having experienced a financial crisis in the previous decade does not increase the likelihood of GST uptake. This finding holds for all model specifications (Models 4-6). Thus, the results strongly support my argument that financial crises are unlikely to facilitate the introduction of regressive general consumption taxation. Figure 2.4 visualises these findings. It shows adjusted survival curves based on the estimated Cox PH models 2 and 5.[7] Whereas a previous financial crisis increases the likelihood of PIT introduction markedly, the adjusted survival curves for GST introduction with and without a previous financial crisis are nearly identical.

Like PIT, neither higher levels of democracy nor previous war experience do facilitate GST introduction. A higher level of GDP per capita does not influence tax introduction either, whilst regional interdependencies as well as being a communist successor state increase the likelihood of introducing a GST.

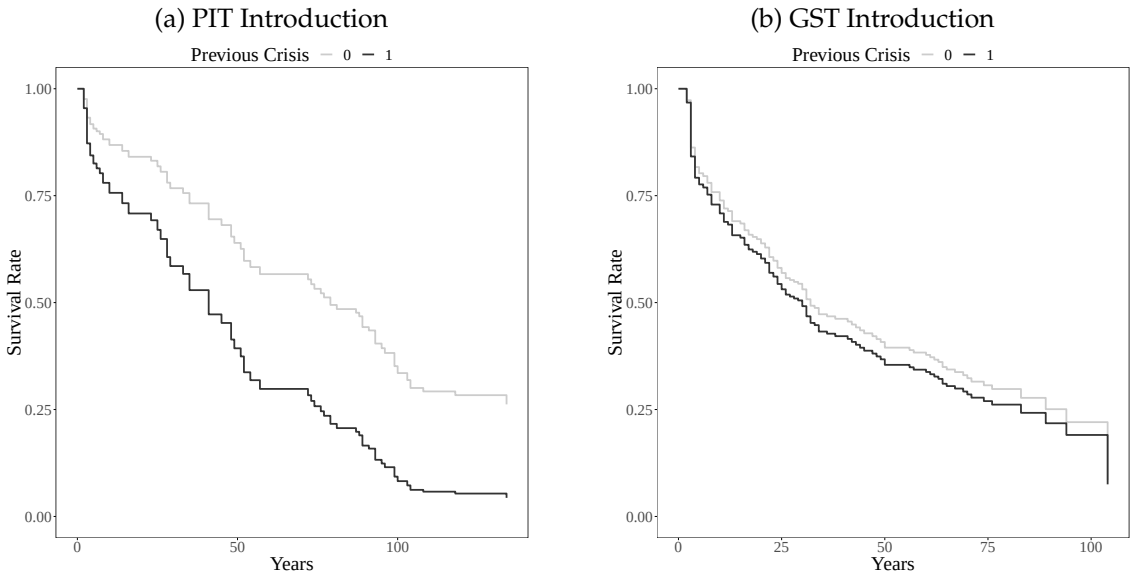
2.5.2 Robustness Checks

To check my results, I run a series of robustness tests. First, I recalculate my models without region fixed effects (Table A1). All coefficients and confidence levels stay similar. Hence, the results remain robust to this alternative specification.

Second, I rerun all models by adding the year in which a country enters the risk set as a covariate. Table A2 in the appendix shows the results. The main findings hold:

[7] Note that the curves are different from Kaplan Meier estimates as they show survival expectations based on the specified Cox PH models. Expected survival curves are calculated for averages of subpopulations.

Figure 2.4: Effect of Financial Crises on PIT/GST Introduction, Adjusted Survival Curves for Cox PH Models



whilst financial crises do increase the likelihood of PIT introduction, they have no effect on GST introduction. The coefficients for the entry variable are positive and highly significant for all models. Thus, the later a country becomes independent, the quicker it introduces a PIT and a GST. Most remarkably, the regional diffusion effect disappears when we control for the year a country enters the risk set. This finding indicates that the diffusion effect mainly stems from countries that become independent at a later point in time and henceforth follow the fiscal path of their peers.

Third, I use logit models instead of Cox PH Models. I follow Carter and Signorino (2010) by using a cubic polynomial approximation (t, t^2, and t^3) to model the time dependence of the data. Table A3 presents the results. Again, financial crises have a positive and highly significant impact on PIT uptake why their effect on GST introduction is indistinguishable from zero. Importantly, the positive coefficients for war become statistically significant on the 10% level when this specification is used.

Fourth, instead of using the absolute number of countries that have previously introduced a PIT/GST, I use the regional share of adopters. Effectively, this is a row standardisation of the temporarily lagged spatial lag (Neumayer & Plümper, 2016). Results are present in Table A4 and support my main findings. Furthermore, the positive

and significant effect of the spatial lag is robust to this row standardisation.

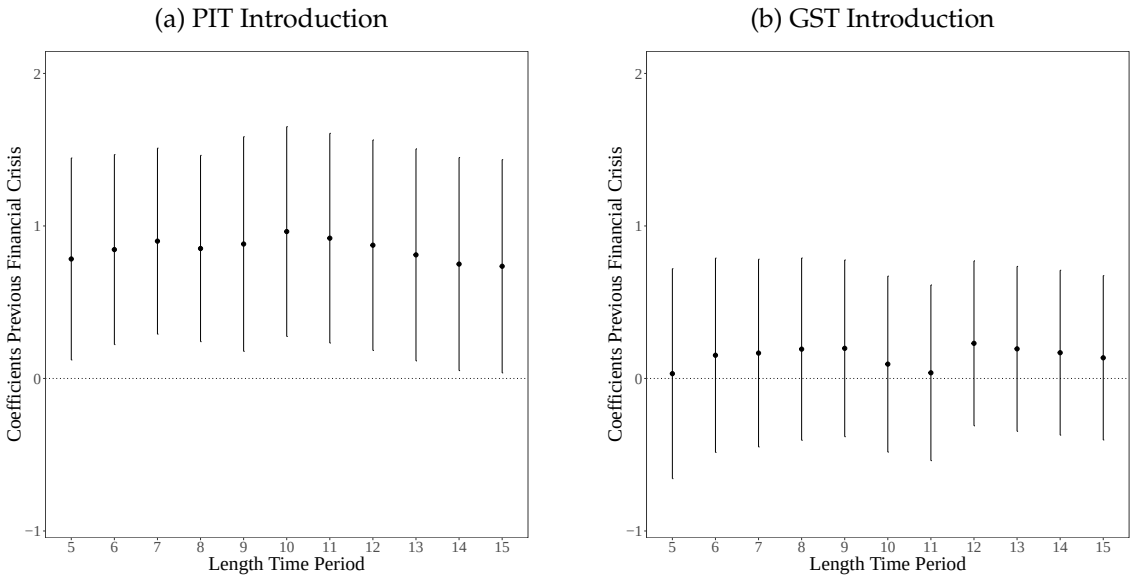
Fifth, some countries could be more likely to experience financial crises than others. Although many banking crises have happened in countries of the global south (Reinhart & Rogoff, 2013), one might argue that OECD countries, with their more sizeable and complex financial systems, had a higher risk of experiencing a crisis (Kindleberger, 1989). To deal with this issue, I perform a subset analysis of 22 core OECD countries.[8] Using this reduced country sample also allows me to look at the impact of political institutions and party politics on fiscal innovations. First, electoral systems might influence tax policies (Hays, 2003; Iversen & Soskice, 2006). Therefore, I include a binary variable which equals '1' when a country has a majoritarian electoral system on the national level. Second, power resource theory stresses the importance of partisan politics for redistributive policies (Korpi, 1983). I use a dummy that takes the value '1' when a country has a left head of government in a respective year. Data for both variables come from Scheve and Stasavage (2016).[9] Table A5 presents the results. The findings for this reduced sample are in line with the previous ones for the global sample: whereas countries are more likely to introduce a PIT after banking crises, the likelihood of introducing a GST remains unaffected. Furthermore, countries are more likely to introduce a PIT under a leftist head of government. This finding is in line with partisanship theories that expect leftist governments to levy more redistributive policies. In contrast, the type of electoral system neither facilitates PIT nor GST introduction.

Finally, I check whether the length of the time interval which is chosen for the financial crisis dummy influences the results. I do this by rerunning the original Cox PH models (Table 2.1, Models 3 & 6) and using varying time intervals, ranging from five to fifteen years. For the case of the five year interval, this means that the variable is coded as '1' if a financial crisis has started in the previous five years (as opposed to ten

[8]These countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States of America. Finland, Ireland, and Norway are excluded in the PIT models because these countries were under Russian/British/Danish rule at time of introduction.

[9]Data is missing for Greece, Luxembourg and Portugal.

Figure 2.5: Effect of Financial Crises on PIT/GST Introduction for Varying Time Intervals



Note: Graphs show point estimates and 95% confidence intervals. Model specification based on Table 2.1, Models 2 & 5.

years in the original model). Figure 2.5 shows the estimated coefficients for the different time intervals. The results are very robust. For PIT, the financial crisis dummy has a positive, statistically significant coefficient for all time intervals. As we would expect, the distribution of the coefficients has a slightly concave shape. This indicates that the effect of the variable is smaller when much shorter/longer time intervals are chosen. To the contrary, the variable for a previous financial crisis has no significant effect on GST introduction. The coefficients are close to zero for all time intervals and show slight random variation. Therefore, these results also strongly support my theoretical argument.

2.6 The (Non-)Introduction of PIT and GST in the United States

The previous analysis has shown that financial crises have facilitated the uptake of progressive income taxation whilst they have had no effect on regressive general consumption taxation. In this section, I look at the case of the US and show how banking

crises paved the way for the permanent introduction of the PIT in 1913 which marked "a new stage in the history of finance" (Seligman, 1914b, p. 57). Whilst the PIT became an indispensable revenue source, the US are still today one of the few countries in the world that does not levy a federal GST/VAT. The fact that PIT was introduced during a time of peace and after a long period of democratic stability makes the USA a good case to investigate the underlying mechanisms of the nexus between financial crises and tax innovations more closely. Furthermore, the USA marks a hard case for my theory as PIT could only be introduced via an amendment of the constitution. Such a constitutional change is a high threshold for the introduction of a tax. According to R. G. Blakey (1914), the introduction of a PIT at the turn of the 19th century was even regarded as "hopeless because people had almost come to the believe that formal changes in the Constitution were practically impossible short of civil war" (R. G. Blakey, 1914, p. 25).

Local income taxes in the US have a long history; the first tax was levied in 1706 in the state of Massachusetts (Aidt & Jensen, 2009, p. 174). However, it was the American Civil War which led to the legislation of the first federal income tax in 1862. The tax which was introduced with statutory top rates of initially 5% was only a temporary war finance measure (Scheve & Stasavage, 2016, p. 151). The US federal government repealed the tax again in 1872 a few years after the American Civil War. In the years that followed, the US finances mostly relied on tariffs and excises (Taussig, 1894). Thus, the revenue system was built on regressive taxes which put a higher burden on lower income groups whereas the idea of levying progressive taxes on income was largely absent in the public discussion (Seligman, 1914a, p. 493).

In the 1890s, demand for reforming public finances became stronger. In particular, the idea of a progressive federal tax on income re-entered the public debate at the end of the 19th century (Seligman, 1914a, p. 495). One of the crucial events for this development was the Panic of 1893 (Scheve & Stasavage, 2016; Steeples & Whitten, 1998). The 1893 financial crisis resulted in a deep recession with disastrous consequences for millions of workers. From 1892 to 1893, public receipts dropped by 8% and expen-

ditures increased by 4%, leading to a massive rise in public deficits (Hoffmann, 1956; Joseph, 2004). Furthermore, long-run economic growth slowed down considerably (Ramírez, 2009), and unemployment rates tripled from 3.7% in 1892 to 12.3% in 1894 (Romer, 1986). In other words, "[t]he panic of 1893 left a trail of closed factories, defunct banks, lost fortunes, labor wars, and hungry people" (R. G. Blakey & Blakey, 1940, p. 13). As a result, the Panic of 1893 increased public inequity aversion and strengthened claims for a PIT (R. G. Blakey and Blakey, 1940, p. 559, Lepore, 2018, p. 347, Mehrota, 2013).

Soon after, the crisis-induced demand for an income tax found its way into the political process as "the issue of tax reform moved from the panic-stricken streets of the nation to the lofty chambers of Congress" (Joseph, 2004, p. 51). In the debate about the 1893 income tax proposal, Congressman Benton McMillin (Democrats) drew a direct connection between the Panic of 1893 and demand for a more progressive tax system. The income tax was intended to shift the fiscal burden from regressive tariffs, which mainly fall on consumption, towards taxes on the rich: "My friends, are we going to put all of this burden on the things men eat and wear and leave out those vast accumulations of wealth?" (cited in Seligman (1914a, p. 498)). According to Mehrota (2013), "[t]he Panic of 1893 precipitated a deep and unprecedented economic depression – arguably the nineteenth century's worst economic downturn – that, in turn, unleashed a torrent of social and political pressure for reform" (Mehrota, 2013, p. 87). The populist movement of the 1890s with its critical stance towards banks and big businesses strongly supported the idea of income taxation as well. In turn, Democrats spoke out in favour of the income tax in order to react to populist political pressure (R. G. Blakey & Blakey, 1940, p. 15).

Finally, the 1894 Revenue Act introduced an income tax with a top rate of 2% on income over $4000. The legislation was passed by a Democratic majority but was supported by a few senators from the Populist Party (Taussig, 1894). The main idea behind PIT adoption was to increase the progressivity of the tax system by replacing regressive tariffs with "a tax on the well-to-do alone [...] to moderate the unequal dis-

tribution of wealth" (Taussig, 1894, p. 599). However, the tax was only short lived as the Supreme Court of the United States ruled the PIT as unconstitutional in the *Pollock v. Farmers' Loan & Trust Company* case.

Nevertheless, the idea of taxing incomes did not vanish with the Supreme Court ruling. Critics stressed the fiscal consequences of the Court decision and argued that it further strengthened what was perceived as an unfair tax system: "No decision during the present generation has so shaken the confidence of the masses in the fairness of this high tribunal nor has any brought forth so many assaults upon its integrity" (R. G. Blakey, 1914, p. 25). Although political demand for the income tax persisted, the following years' economic recovery and stability reduced the political pressure for PIT introduction (R. G. Blakey, 1914). It was only in 1909, shortly after the Panic of 1907, that legislative procedures to rule over the *Pollock v. Farmers' Loan & Trust Company* case via a constitutional amendment started. This timing was indeed not accidental (Lepore, 2018). First and foremost, the Panic of 1907 caused a fiscal crisis. In 1909, the treasury reported reductions in revenues from customs and internal revenues of more than $64,000,000 and expenditures that had increased by $100,000,000 (R. G. Blakey & Blakey, 1940, p. 24). Furthermore, it projected an estimated budget deficit of $100,000,000 for the next fiscal year (Buenker, 1985). Second, demands which called for shifting the tax burden away from consumption regained strength. Just like after the 1893 crisis, it was argued that the income tax would be a fair correction to a tax system that overwhelmingly relied on regressive tariffs and excises (Pollack, 2012). The PIT was expected to create most bountiful revenue in the rich financial centres on the east coast (R. G. Blakey, 1914, p. 36). Thus, the PIT was also seen as a fair correction to the previous revenue system by shifting parts of the tax burden onto the rich (Seligman, 1914b, p. 57). For example, Congressman William H. Murray (Democrats) argued that "[t]he purpose of this tax is nothing more than to levy a tribute upon that surplus wealth which requires extra expense, and in doing so, it is nothing more than meting out even-handed justice" (cited in Pollack (2012, p. 325)).

In his address to Congress, President William Howard Taft proposed both the

adoption of corporate income tax (CIT) as well as a constitutional amendment to enable PIT legislation and argued that the PIT "might be indispensable to the nation's life in great crises" (Taft, 1909). Congress passed the proposal for the Sixteenth Amendment in July 1909. Yet, it took another four years until 1913 when the required 75% of the states ratified the amendment and enabled the legislation of the Revenue Act of 1913 which introduced a PIT. During the legislative process, the original bill was modified largely to make it more progressive than originally planned.[10] In the end, a progressive tax scale ranging from 1% for income above the allowance of $3,000 annually to a marginal top tax rate of 7% for annual income exceeding $500,000 was agreed upon (Seligman, 1914b). The high exemptions meant that only 2-3% of households had to pay income tax at all in 1913 (Pollack, 2012, p. 328, Buenker, 1985, p. 338). Therefore, the PIT was almost exclusively levied on the rich (R. G. Blakey, 1914). According to (Buenker, 1985, p.14), nearly 80 % of those who had to pay PIT consisted of "bankers, brokers, capitalists, manufacturers, merchants, and corporate officials." The tax was also an effective revenue raiser: three years after legislation, the PIT already generated more than 5% of total revenue in the USA (Aidt & Jensen, 2009, p. 162).

The case of the USA illustrates the importance of financial crises for PIT introductions. Fiscal needs called for new revenue instruments whilst fairness demands for tax progressivity pushed the idea of replacing regressive tariffs and excises with progressive taxes on income (Buenker, 1985, p. 396). The 1894 as well as the 1913 income tax were preceded by a financial crisis and a deep recession. Both times, this resulted in eroded trust in financial institutions and an increased demand for progressive income taxation (Mehrota, 2013, p. 247 ff.). In line with the shift towards progressive taxation, demands for expanding taxes on consumption via a GST were largely absent from public debates (Williamson, 1921). One could argue that this is because the GST is a younger policy instrument than the PIT. However, the idea of a general tax on consumption already existed at the beginning of the 20th century. Even the idea of the VAT as the technically most sophisticated way of taxing consumption emerged

[10]Yet, a steeply progressive suggestion with a marginal top rate of 68% was voted down (Seligman, 1914b, p. 68).

before the 1920s (Lindholm, 1984, p. 121). By 1925, 20 countries had already levied a GST (Seelkopf & Genschel, 2018). Most of these countries introduced the GST because of fiscal difficulties after World War I (Wells & Flesher, 1999, p. 110). This was also the time when calls to introduce a GST in the USA became louder. However, several post-war attempts to introduce a GST failed because of its regressive characteristics (James, 2015, p. 341). The financial crisis of 1929 and the following Great Depression created fiscal pressure to introduce a federal GST again. Economic hardship and decreasing revenues from property taxation led to the subnational introduction of GST in some US states (Gillitzer, 2017; Lindholm, 1984) Yet, the central government did not introduce a general tax on consumption. A proposal to introduce a nationwide GST in 1932 ('manufacturers' excise tax') was voted down in Congress (Wells & Flesher, 1999, p. 112). Subsequent attempts to introduce the GST nationally were manifold, yet peripheral and unsuccessful (Morgan & Prasad, 2009). Instead, fiscal difficulties due to the financial crisis were met by expanding the extractive capacity of the PIT whilst simultaneously raising its progressivity. Top PIT rates were raised substantially: the top marginal income tax rate steeply increased from 25% in 1928 to 63% in 1932 (Scheve & Stasavage, 2010). Despite massive public deficits, later financial crises did not result in the adoption of a general tax on consumption either. Most recently, the financial crisis of 2007/2008 led to an expansion of the income tax – thus, of a tax instrument already in place. In contrast, a fundamental reform the US tax system via the introduction of a federal consumption tax did not become a credible policy alternative during the Great Recession (Slemrod, 2009).

2.7 Conclusion

Have financial crises boosted fiscal innovations? Drawing on the large body of literature that looks at warfare and state capacity, I have argued that financial crises can facilitate fiscal innovations because of revenue needs and demands for fiscal fairness. However, it is important to closely differentiate between tax types. Whilst revenue needs may lead to the introduction of all kinds of new taxes, fiscal fairness claims in

the wake of financial crises only push for taxes on the rich. Fairness arguments can expand progressive taxation and decrease the likelihood of introducing new regressive tax instruments. Event history analyses of new data on tax legislation worldwide support my argument. Whilst countries are more likely to introduce a progressive PIT in the wake of a financial crisis, I do not find any effect of crises on GST introduction. An examination of tax legislation in the US has provided further support for these findings. Revenue needs and fiscal fairness claims led to the introduction of progressive income taxation whilst attempts to introduce a GST in the US failed. Hence, after financial crises, an expansion of regressive taxation has been a hard political sell – despite dire fiscal situations.

In sum, this article has shown that shocks other than mass warfare can lead to an expansion of fiscal capacity. Over the long run of history, financial crises have facilitated the rise of progressive taxation. These findings generate two broad follow-up questions that could be addressed in future work. The first question asks about the potential of financial crises to revive progressive taxation nowadays. Whilst tax progressivity has declined massively in the last decades (Kiser & Karceski, 2017; Scheve & Stasavage, 2017), inequality has become one of the major challenges for the 21st century (Atkinson, 2015). Progressive taxation is the most effective policy tool at hand to tackle inequality. As I have shown in this article, financial crises have paved the way for progressive taxation over the long run of history. Analysing whether such crises have a similar potential today is therefore a promising approach for further research.

Second, future work could examine how circumstances and timing of fiscal innovations impact the development of fiscal capacity. As I have shown, taking financial crises into account can help us to understand differences in fiscal capacity around the world. Looking at the first major step in the evolution of fiscal systems – the introduction of bath-breaking fiscal innovations – is therefore only the start. Finding out whether the mode and the circumstances of introduction still matter for outcomes nowadays is an important task for future research. Moreover, an early introduction of the PIT might cause legacy effects. For instance, the possibility to expand state capac-

ity quicker than other states could be a competitive advantage and may increase fiscal capacity even further in the long run. Whilst these questions are beyond the scope of this article, they stress the importance of analysing the historical roots of fiscal systems even further. As this article has shown, financial crises are of central importance for our understanding of the fiscal origins of the modern nation state.

3. What's Fair? Preferences for Tax Progressivity in the Wake of the Financial Crisis

Abstract

Progressive taxation is an effective redistributive tool in times of growing inequality. However, like all public policies, an increase in tax progressivity is unlikely if it lacks popular demand. Has the financial crisis affected the demand for progressive taxation? Building on research that has identified fairness beliefs as the main factor pushing for taxes on the rich, I argue that the Great Recession and states' reactions to it have caused a general shift in tax policy preferences. As a consequence, demand for tax progressivity is higher in crisis countries. Multilevel analyses using survey data for 32 countries show support for my argument. These findings have important implications for our understanding of the politics of redistribution in the 21st century.

3.1 Introduction

In recent decades, inequality has increased massively in most countries around the world (Atkinson & Piketty, 2010). Some authors even consider growing inequality as a fundamental threat to democracy (Piketty, 2014). Progressive taxation is a highly effective tool to reduce inequality. Yet, popular demand is an essential prerequisite for an increase in tax progressivity. But when do people demand tax progressivity? Several scholars have argued that fairness arguments have a strong impact on people's political appetite for progressive taxation (Alesina & Angeletos, 2005; Ballard-Rosa, Martin, & Scheve, 2017; Durante, Putterman, & van der Weele, 2014; Tyran & Sausgruber, 2006). If the economic success of rich people is perceived as 'undeserved', demand for tax progressivity increases. Mass mobilization for war has historically been the main cause of fairness-based preference shifts in favour of progressive taxation (Scheve & Stasavage, 2016). However, after an initial period of very high tax rates on the rich in the post-war era, tax progressivity has decreased remarkably in the last forty years (Kiser & Karceski, 2017). There are multiple explanations for this, covering tax competition (Ganghof, 2006b; Genschel, Kemmerling, & Seils, 2011; Genschel & Schwarz, 2011; Swank, 2006) and the disappearance of mass warfare (Obinger, 2012; Scheve & Stasavage, 2012). So, can fairness arguments still play a role for taxing the rich in the 21st century?

This article looks at tax policy preferences in the wake of the financial crisis of 2008 in order to answer this question. I argue that fairness arguments have increased demand for progressive taxation in countries that faced a deep recession. Two factors account for this. First, the crisis has put a spotlight on risky investment behaviour on financial markets. Thus, perceptions of rich people's wealth as individually deserved – hence, as based on their hard work and merit – have suffered. Second, the role of the state before and during the crisis has raised concerns about institutional deservingness. Crucially, the crisis has increased the salience of regulatory failure and led to discussions about large scale bailout packages. As a consequence, the perception of rich

people's economic success as institutionally deserved has suffered as well. Multilevel models combining micro data from the 2009 round of the International Social Survey Programme (ISSP) with several macro indicators support these claims. The analysis shows that demand for tax progressivity is higher in countries that have experienced a more severe asymmetric shock. Importantly, this effect stems from a strengthened impact of fairness considerations on tax policy preferences. Moreover, I use data from the 1999 ISSP round to check my model's exogeneity assumptions. Additional robustness checks as well as placebo tests and an analysis of over time variation in tax policy preferences provide further support for my argument.

The contribution of this article to the literature is threefold. First, the article shows that fairness arguments are still important for progressive taxation. Due to the crisis, perceptions of economic success as 'deserved' have suffered and the impact of fairness beliefs on tax policy preferences has intensified. As a consequence, demand for tax progressivity is higher in crisis countries. Although mass warfare has – fortunately – disappeared in the last decades (Onorato et al., 2014), fairness-induced appetite for progressive taxation is not dead. Other macro level shocks can strengthen demand for tax progressivity as well. Second, the article systematically differentiates between distinct fairness dimensions and their impact on tax policy preferences. It demonstrates how the Great Recession as a macro-phenomenon triggered specific fairness dimensions whilst others remained unaffected. Thus, instead of regarding fairness dimensions *en bloc*, using a more fine-grained typology can help disentangle the connection between fairness perceptions and demands for public policy. Finally, the article also contributes to a growing body of literature that deals with the impact of financial and economic crises on national tax policies (Hakelberg, 2016; Lierse & Seelkopf, 2016a; Swank, 2016a). Whilst these studies have focussed on tax policy changes on the macro level, this article adds the micro level to the discussion. By investigating how and why tax policy preferences differ between countries, it marks a first step towards better integration of the demand and supply side of tax policies in times of crisis.

The article is structured as follows. It starts by offering a short overview of the

role of economic self-interest and fairness perceptions for redistributive policies. Then, it develops the theoretical argument about the impact of fairness arguments on tax policy preferences during the Great Recession. After describing the data sources and the different model specifications of the analysis, the results are presented. The final section concludes by discussing the effects of crisis-induced demand for progressive taxation on the political supply side.

3.2 Theory

3.2.1 Economic Self-Interest and Fairness Perceptions

The micro foundations of redistribution have been gaining increasing attention in recent years. Most studies dealing with personal attitudes towards redistributive policies look at the determinants of preferences for general redistribution and for social policy programmes. In comparison, attempts to explain preferences for tax policies have been rare. We can differentiate between two major explanatory factors for tax policy preferences: economic self-interest and fairness perceptions.

Traditionally, analyses of the impact of economic-self-interest on redistributive preferences have dominated the literature. Much work has focused on the impact of income status and socio-economic risk exposure on preferences for redistribution (Meltzer & Richard, 1981; Moene & Wallerstein, 2001; Rehm, 2009). Studies looking at the impact of income on tax policy preferences are based on the premise that people want to maximise their individual net income. Whilst findings clearly show that higher income leads to a lower demand for tax progressivity (Ballard-Rosa et al., 2017; Barnes, 2015), the predictive power of income for redistributive preferences varies remarkably between countries (Beramendi & Rehm, 2016; Berens & Gelepithis, 2018; Dion & Birchfield, 2010). Authors looking at the influence of (social) risks on individual preferences argue that higher risk exposure increases demand for social insurance (Moene & Wallerstein, 2001; Rehm, 2009). For example, Rehm (2011) claims that support for social policy programmes is particularly high if the common risk pool is ho-

mogeneous.[1] Progressive taxation can serve the same function of social insurance, as it mitigates the negative effect of social risks on real income by reducing income differences (Varian, 1980). Barnes (2015) differentiates between preferences for the size of taxation (tax level) and the structure of taxation (tax progressivity). She finds that risk exposure leads to higher demand for tax progressivity, whilst it does not have an effect on preferences for tax levels. Although they are quite distinctive in their theoretical expectations, both income- and risk-based explanations share the same baseline assumption; individuals want to optimise their economic outcome. They do so by either maximising their current economic situation (income-based explanations) or by finding an optimal insurance coverage (risk-based explanations).[2]

The general argument of studies that look at the role of fairness perceptions for redistributive preferences is straightforward: if economic outcomes are perceived as unfair, demand for a correction of these outcomes will increase (Alesina & Angeletos, 2005). Hence, even the richest members of society might demand more tax progressivity if they perceive the tax system as unfair. Several studies have found strong correlations between individuals' preferences for fairness and tax progressivity (Ackert, Martinez-Vazquez, & Rider, 2007; Ballard-Rosa et al., 2017; Lü & Scheve, 2016). Importantly, fairness beliefs are closely linked to the process that has led to the status quo (Hennighausen & Heinemann, 2015): if the previous allocation process is perceived as fair, the socio-economic outcome will be perceived as fair, too. Thus, demand for redistributive taxation will be low (Fong, 2001; Rowlingson & Connor, 2011). We can differentiate between three dimensions of fairness perceptions.

First, people are more likely to regard economic success as deserved (and fair) if they perceive success as independent from socio-economic family background. Hence, if intergenerational mobility is high, demand for market corrective, redistributive measures will be lower (Alesina, Stantcheva, & Teso, 2018; Fong, 2001). However, if people believe that wealth and income levels are predetermined by socio-economic origins,

[1] For an extension of this model covering labour market segmentation, see Alt and Iversen (2017).

[2] Also, some studies combine income-based with risk-based explanations and demonstrate that both approaches are not mutually exclusive (Carnes & Mares, 2015; Moene & Wallerstein, 2003; Rehm, Hacker, & Schlesinger, 2012).

the perception of deservingness will suffer. In this case, the procedural dimension – the lottery of birth – is completely based on luck. Therefore, its outcome is perceived as unfair. Unsurprisingly, fairness issues related to family background are highly salient in discourses over the inheritance tax (Beckert, 2008).

Second, the role of individual effort and merit are important for fairness perceptions. If people attribute economic success to effort and work performance, they will perceive income differences as deserved (Durante et al., 2014; Rowlingson & Connor, 2011). Contrary to the family background, the individual has an active position in the procedural dimension. Whilst family background is exogenous to an individual's decision, work effort and performance are not. Therefore, this deservingness dimension focuses on behavioural aspects. By strategic risk-taking, an individual can even incorporate luck into the work process. If economic success is the result of risk-taking, people could still view inequality as deserved. However, this will only be the case if the risks that have been taken can actually materialise. If there is no chance of risk-materialisation, as in the case of moral hazard, the perception of success as a reward for bold risk-taking suffers.

Third, institutional circumstances matter for the perception of deservingness. If the political and economic system of a country is perceived as structurally unfair, inequality will also be regarded as unfair (Hennighausen & Heinemann, 2015). In particular, the role of the state is of central importance. When a subgroup of the population is treated beneficially by public authorities, fairness principles are violated. In order to restore the 'principle of equal treatment', demands for policies which compensate for previously granted beneficial advantages become stronger (Scheve & Stasavage, 2010, 2012, 2016).

One shortcoming of most studies on fairness perceptions is that they do not offer an explanation for why tax policy preferences vary cross-nationally and over time. If fairness perceptions matter for tax policy preferences, why is their impact stronger in some countries than in others? And why do preferences change? The contribution by Scheve and Stasavage (2016) is an important exception. The two authors show that

mass warfare intensifies the impact of the institutional deservingness dimension. They argue that when a country faces mass warfare, richer people are treated beneficially by the state: they are less likely to face conscription and might profit economically from a higher demand for war-related goods. As a consequence, fairness-based demand for tax progressivity increases. Thus, in short, mass mobilisation for warfare causes 'compensatory arguments' to tax the rich (Scheve & Stasavage, 2010, 2012).

Although the work by Scheve and Stasavage helps fill a major gap in the literature on fairness beliefs, two important questions remain unanswered. First, their main independent variable – mass warfare – has disappeared. Modern wars are different to traditional wars: they are mainly extra-state or intrastate wars which are fought by smaller armies because of modern war technology (Onorato et al., 2014; Sarkees & Wayman, 2010). According to Scheve and Stasavage (2016), the absence of mass warfare in the last decades can explain the demise of progressive taxation. However, we do not know whether this means that fairness arguments have become irrelevant for tax progressivity. The financial crisis of 2008 is a prime example of a massive asymmetric shock other than warfare which might have triggered fairness-based demands for progressive taxation. After all, both warfare and economic crises can cause fundamental structural and political changes (Widmaier et al., 2007). Second, the perception of institutional deservingness might not be the only fairness dimension that is affected by asymmetric shocks. Yet, a systematic analysis that differentiates between fairness dimensions after such shocks is missing. The financial crisis provides the opportunity to look at the interplay between shocks on the macro level and different fairness dimensions.

To sum up, the literature that deals with preferences for redistribution has faced a recent 'fairness turn'. For times of mass warfare, our understanding of why the power of fairness perceptions for tax policy preferences varies between countries has improved greatly. However, we still know little about the role of fairness arguments in the absence of mass warfare. In particular, the impact of asymmetric economic shocks might lead to an intensified impact of some fairness dimensions on tax policy prefer-

ences whilst other dimensions remain unaffected. As I argue in the next section, two characteristics of the financial crisis have increased the impact of fairness beliefs on preferences for tax progressivity: the role of financial and economic elites in the run up to the financial crisis and the role of the state before and during the crisis. In countries that were hit harder by the crisis, these two factors gained particular public attention.

3.2.2 Fairness Arguments and the Great Recession

The Crisis, the Rich, and the State

My main argument is that the Great Recession has increased demand for tax progressivity. In other words, the Great Recession as a cross-nationally varying factor on the macro level has increased micro level preferences for tax progressivity. Furthermore, I claim that this effect originated in an intensified impact of fairness considerations on tax policy preferences. Fairness arguments have prominently re-entered public discussions following the economic downturn in the wake of the financial crisis. The prime example of this is the Occupy Wall Street (OWS) protest movement, which has mainly targeted socio-economic inequality and particularly the role of the richest members of US society. Even the main slogan of the OWS movement, "We are the 99%", straightforwardly refers to growing inequality induced by the wealth and income development". According to Bartels (2013), repealing the 2001/2003 Bush tax cuts was "the most concrete policy issue addressed (insofar as any concrete policy issue was addressed) by the Occupy Wall Street movement" (Bartels, 2013, p. 63).[3] Directly referring to the OWS slogan, Paul Krugman in his New York Times column went even further and focused on the richest 0.1% of society: "So should the 99.9 percent hate the 0.1 percent? No, not at all. But they should ignore all the propaganda about “job creators” and demand that the super-elite pay substantially more in taxes" (Krugman, 2011).

But how might the financial crisis have sparked demands for fiscal fairness? The crisis has led to an increased public salience of two factors. First, the financial crisis

[3]For an overview of the discussion about the Bush tax cuts, see Bartels (2005), Hacker and Pierson (2005), Lupia, Levine, Menning, and Sin (2007), and Bartels (2007).

has sparked a public debate about its causes – prominently blaming risky financial investments. The majority of opinions in the public debate has blamed the financial and economic elites, particularly bankers, for the emergence of the Great Recession (Bartels & Bermeo, 2014; Hellwig & Coffey, 2011). The image of 'greedy' bankers shamelessly pursuing risky financial activities to maximise personal wealth has dominated public perception. Financial market activities have been characterised as "a gambling casino" (Sinn, 2010, p. 70) allowing for "skyrocketing financial speculation" (Foster & Magdoff, 2009, p. 80). This criticism has cut across political affiliations (Münnich, 2016). Although financial speculation contributed to growing inequality prior to the Great Recession (Volscho & Kelly, 2012), it was only in the wake of the crisis that financial risk-taking gained public salience (Fourcade, Steiner, Streeck, & Woll, 2013). Thus, the discussion about the causes of the crisis has put a spotlight on practices of financial investment and the role of economic elites.

Second, the financial crisis has increased attention on the role of the state *before* and *during* the crisis (Comiskey & Madhogarhia, 2009; Hellwig & Coffey, 2011). Discussions about the role of the state *before* the crisis focus on regulatory failure. The general argument is that ineffective financial regulation enabled financial market actors to take up systemic risk. The huge economic downturn in 2009 (Figure 3.1) revealed the negative externalities that came along with risky financial business models. These economic effects did not solely hit those who previously benefited from financial markets practices, but hurt society as a whole. In particular, lower income groups that did not participate in risky financial investments beforehand – simply because they lacked the capital to do so – have suffered from the crisis economically. In the U.S., relative losses in wealth "were disproportionally concentrated among lower-income, less educated, and minority households" (Pfeffer et al., 2013, p. 98). To sum this point up, the crisis has put a spotlight on pre-crisis regulatory failure which enabled financial actors to take up huge external risks.[4] Furthermore, public attention on the role of the state

[4]Authors like Morgenson and Rosner (2011) have claimed that "the mortage binge enriched a few and imperiled many" and call it "a reckless endangerment of the entire [U.S.] nation by people at the highest levels of Washington and corporate America" (Morgenson & Rosner, 2011, p. 7).

during the crisis has concentrated on bank bailout packages. These packages were not only expensive (Reinhart & Rogoff, 2013), but they have also been perceived by many as measures to bail out a richer subgroup of the population (Hacker & Pierson, 2010). Thus, rescuing struggling financial institutions with public money has become a publicly salient and highly criticised topic (Hellwig & Coffey, 2011). I argue that both factors – the role of economic elites and the role of the state – have affected fairness-based demand for progressive taxation.

Fairness Dimensions and the Financial Crisis

To disentangle how the crisis-induced perception of economic elites and the state might have influenced attitudes towards taxation, let us refer back to the three different fairness dimensions. The impact of the lottery of birth on later economic success is a rather stable factor, independent of economic downturns. Neither the role of the rich in the run up to the crisis nor the role of the state stands in a direct connection to the perception of advantages based on family background. Therefore, we have little reason to assume that the crisis has had an impact on this fairness dimension.

Perceptions of economic success as a reward for hard work and merit were affected both by the perception of economic elites and of the state's activities. First, discussions about the crisis' causes put a focus on risk-taking on financial markets. When financial risk-taking becomes an important public issue, doubts that inequality simply results from economic elites' higher work effort will increase. As a consequence, the perception of economic success as a "fruit of one's labour" suffers and people view inequality as more unfair (Alesina & Angeletos, 2005). In other words, wealth is increasingly perceived as exogenously rather than endogenously determined (Fong, 2001). Second, in principle, wealth that emerges from financial risk-taking might also be perceived as deserved. This would be the case if people view the courage to take high personal risks as an effort – and therefore as endogenously determined. If risks are entirely internalised, there would be no need for compensation. However, the crisis has shown that these risks were not completely internalised. Instead, many high risk-

takers were bailed out with public money. If risks cannot materialise, risk-taking becomes a less bold endeavour. Hence, rewards resulting from moral hazard are seen as undeserved. In sum, there is good reason to assume that the impact of this behavioural fairness dimension on tax policy preferences has intensified in crisis countries.

Second, states' policies before the crisis and states' reactions to the financial crisis are related to aspects of institutional fairness. Regulatory failure in the run up to the crisis enabled financial market actors to take up risks at the expense of society as a whole. Thus, a lack of financial market regulation by the state indirectly favoured rich financial investors. Furthermore, bank bailouts also affected the institutional fairness dimension. When struggling financial institutions were rescued with public money, people may have perceived these bailouts as a beneficial treatment of a specific subgroup of the population. Bailing out risk-takers might therefore create compensatory demands (Scheve & Stasavage, 2016). Hence, the role of the state before and during the crisis directly touches upon the institutional fairness dimension. The more severe the economic crisis, the more salient are discussions about the crisis' causes and states' reactions to it. As a consequence, the impact of the institutional fairness dimension on tax policy preferences will increase in crisis countries.

Based on these considerations, I expect that the financial crisis has caused a general shift in tax policy preferences. Issues of financial risk-taking by economic elites and the role of the state before and during the crisis have affected perceptions of behavioural and institutional fairness. Therefore, I expect that preferences for tax progressivity are stronger in countries that were hit harder by the crisis. Especially in those countries that faced the biggest asymmetric economic shocks, demand for taxing the rich should be higher. Thus, my first working hypothesis is as follows.

H1: People have a higher demand for progressive taxation in countries that have faced a more severe economic downturn after the financial crisis of 2008.

Yet, *H1* could also follow out of pure economic self-interest in times of crisis. Most notably, a stronger economic downturn might just raise demand for insurance via taxation as it increases the risk of becoming unemployed. In addition, experienc-

ing crisis-induced personal economic shocks might influence preferences for redistribution (Margalit, 2013). I do not rule out that economic development has an influence on preferences for tax progressivity by changing individual socio-economic circumstances. However, my argument builds upon the influence of fairness considerations on tax policy preferences in the wake of the crisis. Therefore, we would expect that *H1* stems from an intensified impact of behavioural and institutional fairness perceptions on tax policy preferences in crisis countries.

H2: The influence of behavioural and institutional fairness perceptions on tax policy preferences is stronger in countries that have faced a more severe economic downturn after the financial crisis of 2008.

3.3 Data and Models

To test my hypotheses about the impact of the Great Recession on tax policy preferences empirically, I combine micro data from the 2009 ISSP Social Inequality IV round with several macro level indicators and analyse it by using multilevel modelling. In total, my sample consists of 32 countries on the macro level and 31,331 respondents on the micro level.[5] My main dependent variable is the question: "Do you think people with high incomes should pay a larger share of their income in taxes than those with low incomes, the same share, or a smaller share?" Respondents could answer on a five point scale covering "much smaller share", "smaller", "the same share", "larger" and "much larger share". I recode the variable so that it ranges from 1="much smaller share" to 5="much larger share". In comparison to other studies on preferences for tax progressivity, this measurement has the advantage that it does not ask people for their opinion in relation to the current tax system (thus, whether they think taxes on the rich are too high/low). Instead, it directly asks for general attitudes towards progressive taxation. I treat the values of the variable as metric.[6]

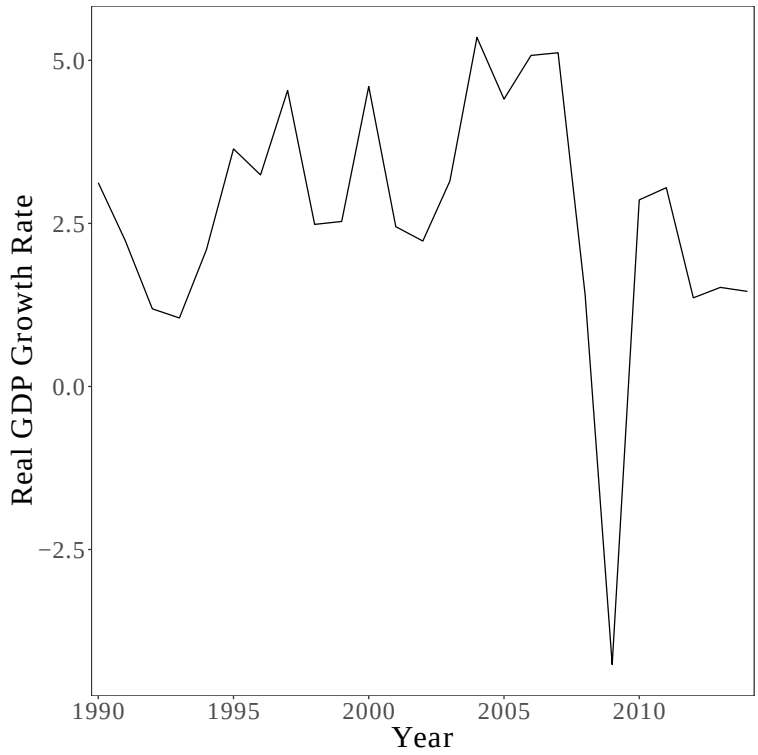
[5]Table C1 in the Appendix lists the countries and the fieldwork period of the ISSP. Taiwan is excluded from the analysis as it lacks data for most macro level indicators. Portugal is excluded because it lacks the question on the behavioural fairness dimension.

[6]See also Beramendi and Rehm (2016) as well as Gingrich and Ansell (2012). However, I additionally check my results by running multilevel generalised linear models for an ordinal dependent variable.

To capture the different dimensions of deservingness, I include three items from the ISSP as independent variables. To cover the impact of deservingness based on family background, I use the question: "Getting ahead: How important is coming from a wealthy family?" Answers can range from 1="Not important at all" to 5="Essential". Thus, the higher the variable's values, the stronger is the perception that family background determines socio-economic success. I expect preferences for tax progressivity to be higher when the status quo is perceived as more unfair. Behavioural deservingness is measured by the question: "How well he or she does the job - how important should that be in deciding pay?", where answers can again range from 1="Not important at all" to 5="Essential". Here, higher values indicate stronger preferences for a congruence between performance and payment. I therefore expect demand for tax progressivity to be stronger as well. Finally, to measure the impact of the institutional deservingness dimension on tax policy preferences, I include the statement: "To get all the way to the top in <Respondent's country> today, you have to be corrupt.", to which people could agree from 1="Strongly disagree" to 5="Strongly agree". Admittedly, this operationalisation is far from perfect as it focuses on corruption. However, since it directly captures the perception of an important part of structural (un)deservingness in the economic and political system, it still constitutes a valid indicator for the institutional dimension. Higher values mean that the institutional set-up is perceived as more unfair. Consequently, I expect preferences for tax progressivity to increase with higher values. In sum, all three dimensions are measured on a scale from '1' to '5' and I expect all coefficients to be positive.

My main economic variable on the macro level, the degree to which a country has been hit by a crisis economically, is measured by real GDP growth rates in the year 2009. Data come from the World Bank's National Account Database (2017). GDP growth in the year 2009 is particularly suited to measuring the extent to which the economic crisis hit a country because the economic effects of the Great Recession were the most pronounced in this year. Therefore, the differences between those countries which were hit by the crisis vis-à-vis those which were relatively unaffected by it be-

Figure 3.1: Average GDP Growth Rates of Countries in the Sample, 1990-2014



Note: Data come from the World Bank (2017). Unweighted mean of the 32 countries in the sample.

came clearest. Furthermore, economic growth rates on the country level are a very visible indicator for a general nationwide economic downturn. Figure 3.1 shows the average real GDP growth rate for the 32 countries in my sample. Although GDP growth already dropped from 5.1% in 2007 to 1.4% in 2008, the year 2009 marks the low point as GDP shrunk by 4.3% on average. In line with *H1*, I expect people to have higher preferences for tax progressivity in countries with a lower GDP growth in 2009. I only include those countries in the analysis in which the fieldwork exclusively took place in 2009/2010.[7]

Additional to these main variables of interest, I include a battery of covariates into my models. On the micro level, I control for several variables that are likely to influence individual attitudes towards tax progressivity. Since people with a higher income might demand less tax progressivity simply because they want to pay less taxes, I include a measurement of household income into my analysis (Kenworthy & Pontusson,

[7]Additionally, I rerun my analysis by using the average year-to-year GDP growth of the first two quarters of 2009 for those countries in which the fieldwork started before 07/2009.

2005). As income is not directly comparable in the ISSP, I follow common practice by looking at the relative position of income earners in a country (Alt & Iversen, 2017; Barnes, 2015). This is done by assigning observations to the country-specific income deciles. I expect people with higher income to be less supportive of progressive taxation.

Rehm (2009, 2011) has made use of occupation-specific unemployment rates as a measure of economic risk. Unfortunately, occupation-specific unemployment rates are only available for a limited number of countries (~20). This is unproblematic for Rehm's studies as he mainly focuses on micro variables whilst controlling for multilevel structures via fixed effects. Yet, I cannot apply fixed effects models since I am primarily interested in the influence of macro variables on attitudes towards progressive taxation (Allison, 2009; Möhring, 2012). Thus, I use multilevel models with random effects. In these models, such a relatively low number of countries becomes problematic because type I errors are more likely (Stegmueller, 2013). Therefore, occupational unemployment rates are less suitable for my analysis. In order to still control for individual risk, I use a dummy that takes the value '1' if a person is in part-time or even less than part-time employment (Rueda, 2005; Stegmueller, Scheepers, Roßteutscher, & de Jong, 2012). Additionally, I include dummies that control for unemployment, being in education (student/school/vocational training), and retirement. Finally, a dummy for people who are not in the labour force equals '1' for those who help family members, housemen/housewives, permanently disabled, and for those who are not available on the labour market because of other reasons. For all of these dummies, the reference category is full-time employment.

To control for the effect of education on preferences towards redistribution, I include a variable that measures the highest educational degree ranging from 0="no formal education" to 5="university degree completed" and treat it as continuous (Barnes, 2015; Beramendi & Rehm, 2016; Häusermann, Kurer, & Schwander, 2016). Furthermore, I add a control variable for religiosity that measures the attendance of religious services, ranging from 1="never" to 8="several times a week". Following studies that

stress the importance of religiosity on redistributive preference (Scheve & Stasavage, 2006; Stegmueller et al., 2012), I expect more religious people to have a lower demand for tax progressivity. Finally, I control for age and gender (0=female; 1=male). In line with previous research on redistributive preferences (Gingrich & Ansell, 2012; Schmidt-Catran, 2016), I expect older people to be more supportive of progressive taxation, whereas I expect men to be less in favour of tax progressivity.

On the macro level, I include several covariates. Since countries might already differ in economic growth prior to the crisis, I control for economic growth in 2007. To account for different levels of risks that have been taken by financial institutions in the run up to the crisis, I include a country's average z-score from the years 2003–2008 in my analysis (Cihak, Demirguc-Kunt, Feyen, & Levine, 2012). The firm-level z-score measures the financial stability of each institution. Higher values indicate a more stable financial system. It is calculated by dividing the sum of equity capital return as a percentage of assets by the standard deviation of returns. Then, the country-level averages of the firm-level z-scores are taken.[8] To take the influence of different levels of economic development into account, I control for the overall level of real GDP per capita (*ln* value) for the year 2009. Data come from the World Bank (2017). In addition, I check my results for robustness by including several other macro variables (see Table B4 in the Appendix). First, different levels of inequality might influence tax policy preferences. Including inequality becomes particularly important because my income variable does not capture absolute differences in household income. Thus, I control for the market Gini coefficient (pre-tax and pre-transfer) and the net Gini coefficient (post-tax and post-transfer) as measurements of inequality (Solt, 2016). Second, tax progressivity might be more popular in countries that have a longer history of redistributive taxation. Therefore I include the introduction year of the personal income tax (PIT) from the Tax Introduction Database (Seelkopf & Genschel, 2018). Third, since a more regressive tax system might have boosted compensatory arguments as well (Scheve & Stasavage, 2016), I control for the share of total consumption tax revenues

[8]For a more detailed discussion about measuring financial risks and the advantages/disadvantages of the z-score, see Laeven and Valencia (2012).

(% of GDP, year 2009) as a proxy for overall regressivity (Prasad & Deng, 2009). Data come from Prichard (2016). Finally, I control for welfare state effort by including social benefit expenditure as % of GDP for the year 2009 (IMF, 2017).[9]

I run several multilevel specifications with random intercepts to identify the determinants of preferences for tax progressivity. Since income as a predictor of preferences for redistribution may vary strongly between countries (Beramendi & Rehm, 2016), all models include random slopes for household income. First, I calculate a minimum example that only includes real GDP growth rates. By doing so, I ensure that the effects of my main independent variable are not driven by my choice of covariates (Lenz & Sahn, 2017). Subsequently, I add the micro and macro variables.[10] All individual level variables are unstandardised and unweighted.[11]

3.4 Results

3.4.1 Main Results

Table 3.1 presents the results of the multilevel analyses. In the minimum example (Model 1), GDP growth in 2009 has a negative and statistically significant impact on preferences for tax progressivity. Thus, respondents in countries with a lower GDP growth in 2009 have a higher demand for tax progressivity.[12] This finding is in line with *H1* and holds when adding control variables on the micro level (Model 2), taking average GDP growth in the first half of 2009 for those countries where the fieldwork took place earlier (Model 3), and adding further controls on the macro level (Model 4). A change in growth by two standard deviation leads to a change in tax progressivity by 1/4 of its standard deviation. As a comparison, this effect is nearly the same size as the effect of a change from the lowest to the highest household income group. This

[9] Tables B2 and B3 provide an overview and summary statistics of the variables used in the analysis.
[10] All models are estimated with a maximum likelihood estimation. Regression tables are produced with the texreg package (Leifield, 2013).
[11] For a discussion of standardisation via mean centring, see Hox (2010).
[12] Figure B1 visualises this result by plotting average preferences for tax progressivity (weighted) against GDP growth in 2009.

result is highly significant and robust to adding further control variables (Table B4) and using multilevel generalized linear models (Table B6).

Regarding the other control variables on the macro level, neither the coefficients of previous GDP growth in 2007, nor the ones of ln GDP per capita 2009 nor the z-score are statistically significant.

Let us now look at the micro variables.[13] All three dimensions of deservingness have positive and highly significant coefficients. Thus, demand for tax progressivity is higher if socio-economic outcomes are perceived as unfair. Since all three variables are scaled identically, we can compare their coefficients directly. The coefficients differ remarkably. The institutional dimension of deservingness has the largest effect of the three dimensions, followed by the behavioural and the family background dimension. The coefficient of the institutional dimension is nearly twice as large as that of the family background dimension. This finding indicates that the strength of different fairness dimensions varies substantially. In particular, if the political and economic system of a country is perceived as unfair, demand for correcting the economic outcomes via progressive taxation increases.

In line with other empirical studies, my results show that people with a higher income are less supportive of tax progressivity (Barnes, 2015; Hennighausen & Heinemann, 2015). The coefficient for economic risk – measured via part-time employment – is not statistically significant. This is in contrast to studies which look at the impact of risk on preferences for social policy. Although this might result from the operationalisation of economic risk (Rehm, 2011), it hints at differences between social policy and taxation; in contrast to social policy, progressive taxation does not *directly* insure people against social risks. Therefore, the demand for social insurance via redistributive taxation (Varian, 1980) might be weaker than the demand for insurance via welfare state programmes. As expected, more religious people have a lower demand for tax progressivity (Scheve & Stasavage, 2006). The same applies to people with a higher

[13]The effect sizes and significance levels of the micro variables stay similar when all country-level clustering is controlled for via a fixed effects model (B7, Model 1) and when using country-specific clustered standard errors (B7, Model 2). Furthermore, I checked the models for multicollinearity.

Table 3.1: Results Multilevel Models for Tax Progressivity

	DV: Preferences for Tax Progressivity			
	Model 1	Model 2	Model 3	Model 4
Micro Variables				
Part-Time Employed		−0.0102	−0.0102	−0.0102
		(0.0152)	(0.0152)	(0.0152)
Unemployed		−0.0149	−0.0149	−0.0151
		(0.0179)	(0.0179)	(0.0179)
In Education		−0.0771***	−0.0771***	−0.0769***
		(0.0216)	(0.0216)	(0.0216)
Retired		−0.0285*	−0.0285*	−0.0286*
		(0.0151)	(0.0151)	(0.0151)
Not in Labour Force		−0.0392***	−0.0391***	−0.0393***
		(0.0149)	(0.0149)	(0.0149)
Educational Level		−0.0060*	−0.0060*	−0.0059*
		(0.0035)	(0.0034)	(0.0035)
Age		0.0043***	0.0043***	0.0043***
		(0.0004)	(0.0004)	(0.0004)
Male		−0.0110	−0.0110	−0.0110
		(0.0089)	(0.0089)	(0.0089)
Religiosity		−0.0101***	−0.0101***	−0.0102***
		(0.0022)	(0.0022)	(0.0022)
Income		−0.0225***	−0.0225***	−0.0225***
		(0.0034)	(0.0034)	(0.0034)
Des. Backgr.		0.0216***	0.0216***	0.0216***
		(0.0040)	(0.0040)	(0.0040)
Des. Behav.		0.0270***	0.0270***	0.0271***
		(0.0058)	(0.0058)	(0.0058)
Des. Inst.		0.0368***	0.0368***	0.0368***
		(0.0036)	(0.0036)	(0.0036)
Macro Variables				
Growth 2009	−0.0205***	−0.0193***		−0.0168**
	(0.0073)	(0.0064)		(0.0065)
Growth First Half 2009			−0.0220***	
			(0.0064)	
Growth 2007				−0.0053
				(0.0123)
Z-Score				−0.0065
				(0.0046)
GDP 2009 (ln)				−0.0251
				(0.0354)
(Intercept)	3.9068***	3.7009***	3.6830***	4.0544***
	(0.0450)	(0.0524)	(0.0529)	(0.3951)
AIC	71407.5999	70540.4758	70538.5077	70543.9832
Log Likelihood	−35699.7999	−35251.2379	−35250.2538	−35249.9916
Num. obs.	31331	31331	31331	31331
Num. groups: country	32	32	32	32

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

level of education. Interestingly, whereas older people have a higher demand for progressive taxation, retired persons actually want less tax progressivity. Cohort effects regarding experiences of mass warfare might be one factor that could explain why older people tend to be more supportive of tax progressivity (Obinger, 2012; Scheve & Stasavage, 2012), whereas the negative effect of retirement remains puzzling. Apart from the umbrella category of not being in the labour force, all other micro variables (unemployment and gender) are not statistically significant. Moreover, I have added dummies which measure political affiliation to the models (Table B7).[14] People with affiliations to leftist or centrist parties demand more tax progressivity than rightist voters. All other coefficients stay similar. As a comparison, a change in growth by one standard deviation has the same effect on preferences for tax progressivity than being a centrist instead of a rightist voter.

3.4.2 Exogeneity of the Crisis

The depth of the 2009 recession may not be entirely exogenous. In the following, I describe the factors that challenge the exogeneity assumption. Furthermore, I provide evidence that the effect of the financial crisis on tax policy preferences remains stable across model specifications which take exogeneity concerns into account.

First, domestic institutions and policies might mitigate the economic shock. In particular, automatic stabilisers such as social security programmes can lead to less severe economic downturns. In other words, economic shocks might be weaker in countries with bigger governments and more generous social policy programmes. To control for possible stabilisation effects, I include total government expenditure as a percentage of GDP into my model (Table 3.2, first column). Data come from the IMF (2017). The crisis effect remains robust.

Second, the depth of the recession in 2009 could be influenced by previous economic development. Countries with a strong growth trajectory might have experienced a weaker downturn than countries that already had poor economic prospects

[14]The number of countries decreases to 29 as information on political affiliation is missing for three countries (Chile, Hungary, Israel).

prior to the crisis. To rule out that the crisis measure is determined by previous economic trajectories, I rerun my models by using the cumulative output gap instead of real GDP growth rates. To calculate the output gap, I estimate GDP per capita (pc) in 2009 with a Kalman smoothing procedure based on GDP pc time series from 2000-2008. The output gap is the difference between real and estimated values of GDP pc in 2009 as a percentage of GDP pc in 2008. Furthermore, I check the results by taking the output gap for 2010 if the ISSP's fieldwork took place later. Columns 2 & 3 in Table 3.2 present the results. The findings are in line with *H1*: countries with a bigger output gap have a higher demand for tax progressivity.

Third, one might argue that countries with generally stronger preferences for progressive taxation have faced a stronger economic downturn. To rule out this possibility, I make use of the 1999 ISSP round and run a placebo test with the 1999 ISSP data and GDP growth rates from 2009 (Table 3.2, column 4). The results reveal that the economic downturn of 2009 was not stronger in countries where people already demanded more progressive taxation prior to the crisis. This finding supports my model's exogeneity assumption. In addition, I compare the impact of GDP growth rates in 1999 on tax policy preferences to the results in 2009 for those countries that were surveyed in both rounds (Table 3.2, columns 5 & 6). In the wake of the crisis, the impact of GDP growth on preferences for tax progressivity is robust to using this reduced sample. In 1999, however, we cannot find an impact of GDP growth. Hence, economic development does not have an impact on tax policy preferences per se. Instead, the procedural dimension that is connected to the economic downturn – the financial crisis – is crucial in order to understand the effect in 2009.

Thus far, I have shown that crisis countries have had a higher demand for tax progressivity. However, I have not looked at changes in tax policy preferences. Due to the lack of yearly data, I focus on long term development of tax policy preferences by looking at the changes from 1999 to 2009. I calculate each country's weighted mean in tax progressivity preferences in both years and take the first difference. In total, this

Table 3.2: Results Multilevel Models for Tax Progressivity in 2009 and 1999

	DV: Preferences for Tax Progressivity					
	Control Exp.	Output Gap I	Output Gap II	Placebo 1999	Reduced 1999	Reduced 2009
Micro Variables						
Part-Time Employed	−0.0090	−0.0101	−0.0101	−0.0049	−0.0052	−0.0013
	(0.0151)	(0.0152)	(0.0152)	(0.0207)	(0.0207)	(0.0195)
Unemployed	−0.0141	−0.0148	−0.0148	0.0033	0.0039	−0.0256
	(0.0178)	(0.0179)	(0.0179)	(0.0270)	(0.0270)	(0.0243)
In Education	−0.0800***	−0.0766***	−0.0766***	−0.0525*	−0.0522*	−0.1137***
	(0.0215)	(0.0216)	(0.0216)	(0.0305)	(0.0305)	(0.0304)
Retired	−0.0261*	−0.0284*	−0.0283*	−0.0080	−0.0073	−0.0394**
	(0.0150)	(0.0151)	(0.0151)	(0.0212)	(0.0212)	(0.0192)
Not in Labour Force	−0.0342**	−0.0392***	−0.0392***	−0.0486**	−0.0491**	−0.0343*
	(0.0149)	(0.0149)	(0.0149)	(0.0205)	(0.0205)	(0.0200)
Educational Level	−0.0098***	−0.0059*	−0.0058*	−0.0209***	−0.0208***	−0.0114**
	(0.0034)	(0.0035)	(0.0035)	(0.0048)	(0.0048)	(0.0044)
Age	0.0042***	0.0043***	0.0043***	0.0025***	0.0025***	0.0044***
	(0.0004)	(0.0004)	(0.0004)	(0.0005)	(0.0005)	(0.0005)
Male	−0.0079	−0.0111	−0.0111	−0.0296**	−0.0300**	−0.0190
	(0.0089)	(0.0089)	(0.0089)	(0.0124)	(0.0124)	(0.0115)
Religiosity	−0.0072***	−0.0102***	−0.0102***	−0.0065	−0.0067	−0.0116***
	(0.0022)	(0.0022)	(0.0022)	(0.0047)	(0.0047)	(0.0029)
Income	−0.0212***	−0.0224***	−0.0224***	−0.0259***	−0.0258***	−0.0258***
	(0.0033)	(0.0034)	(0.0034)	(0.0050)	(0.0050)	(0.0040)
Des. Backgr.	0.0195***	0.0216***	0.0216***	0.0298***	0.0299***	0.0196***
	(0.0040)	(0.0040)	(0.0040)	(0.0055)	(0.0055)	(0.0052)
Des. Behav.	0.0305***	0.0271***	0.0271***	0.0194**	0.0195**	0.0273***
	(0.0057)	(0.0058)	(0.0058)	(0.0080)	(0.0080)	(0.0076)
Des. Inst.	0.0373***	0.0368***	0.0369***	0.0349***	0.0352***	0.0327***
	(0.0036)	(0.0036)	(0.0036)	(0.0051)	(0.0051)	(0.0049)
Macro Variables						
Growth 2009	−0.0183**			−0.0062		−0.0194**
	(0.0079)			(0.0076)		(0.0090)
Growth 1999					−0.0149	
					(0.0124)	
Output Gap 2009		−1.4509**				
		(0.6032)				
Output Gap 2009/2010			−1.1350**			
			(0.5709)			
Growth t-2	−0.0090	−0.0120	−0.0118	−0.0166	−0.0206	−0.0019
	(0.0122)	(0.0131)	(0.0136)	(0.0148)	(0.0147)	(0.0144)
Z-Score	−0.0051	−0.0051	−0.0058	−0.0143**	−0.0165***	−0.0066
	(0.0045)	(0.0047)	(0.0047)	(0.0058)	(0.0054)	(0.0053)
GDP (ln)	−0.0271	−0.0304	−0.0375	−0.0639**	−0.0720***	−0.0165
	(0.0436)	(0.0358)	(0.0367)	(0.0258)	(0.0255)	(0.0444)
Government Exp.	−0.0031					
	(0.0043)					
(Intercept)	4.1169***	4.0715***	4.1749***	4.7743***	4.9531***	3.9291***
	(0.3990)	(0.4010)	(0.4094)	(0.2915)	(0.2937)	(0.4854)
AIC	70158.8442	70544.5801	70546.2602	39720.2755	39719.5869	41219.0290
Log Likelihood	−35053.4221	−35250.2901	−35251.1301	−19838.1377	−19837.7935	−20584.5145
Num. obs.	31331	31331	31331	17363	17363	18374
Num. groups: country	32	32	32	19	19	19

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

leaves me with 19 observations.[15] First, I run bivariate models to see whether the crisis in 2009 can explain differences in changes. Then, I expand this model by adding control variables. I include changes in age as a covariate since ageing societies might demand more tax progressivity. Furthermore, changing patterns of economic risk might have an effect on tax progressivity. Therefore, I include changes in unemployment and part-time work. Finally, I control for changes in religiosity to capture secularisation trends. The regression analyses (Table 3.3, Models 1-5) support my previous findings: Across all models, real GDP growth in 2009 has a negative and statistically significant influence on the change in preferences for tax progressivity. Thus, a strong economic downturn has increased preferences for progressive taxation. Additionally, I rerun the same model but replace GDP growth with a dummy variable that turns '1' when a country faced a strong economic downturn of more than 2% of GDP.[16] The results show that a strong economic downturn in the wake of the crisis has had a positive influence on support for progressive taxation (Table 3.3, Model 6). The effect of a major economic crisis on demand for tax progressivity is 0.2 points – again, as a comparison, this equals the effect of switching from the highest to the lowest income decile.

3.4.3 The Impact of Fairness Perceptions in Times of Crisis

To find out whether the impact of the fairness dimensions on tax policy preferences is stronger in countries that faced a more severe economic downturn (*H2*), I use a cross-level interaction term between the 2009 growth rates and each of the three deservingness dimensions (Table B5). Looking only at the interaction terms, we see that the interactions between growth and the behavioural deservingness dimension as well as between growth and the institutional deservingness dimension are negative and statistically significant. To interpret the cross-level interaction terms substantially, I calculate the marginal effects of each fairness dimension conditional on GDP growth in 2009 (Brambor, Clark, & Golder, 2006). Hainmueller, Mummolo, and Xu (2017) have

[15] The question on attendance of religious service has not been asked in Bulgaria in 1999. Therefore, Bulgaria is excluded from the analysis.

[16] Results are also robust to taking different thresholds (-1 and 0 percent of GDP) for strong economic downturns.

Table 3.3: Determinants of Change in Preferences for Tax Progressivity 1999–2009

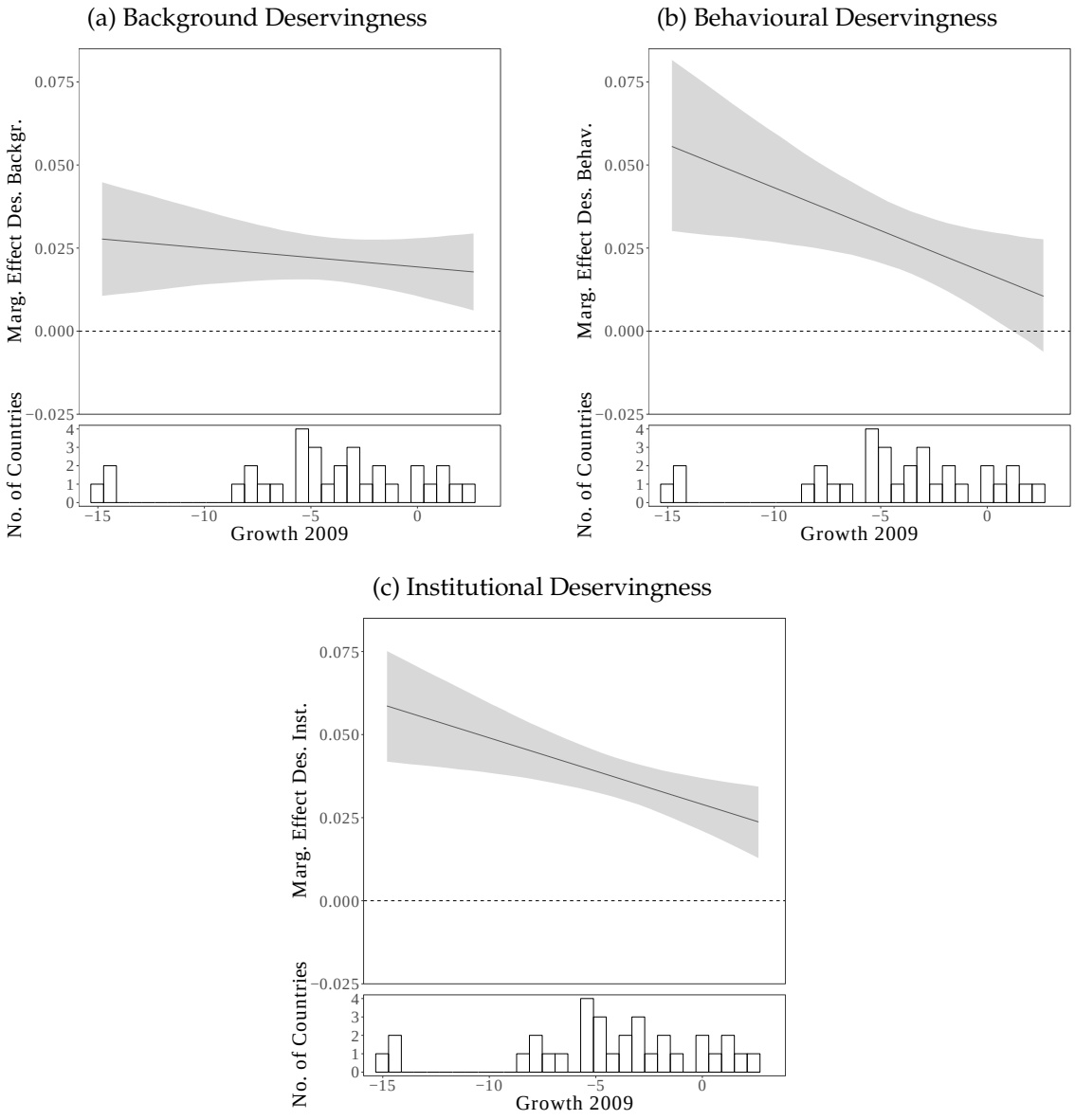
	DV: Δ Preferences for Tax Progressivity					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Growth 2009	−0.0191**	−0.0192**	−0.0195**	−0.0192**	−0.0188**	
	(0.0073)	(0.0074)	(0.0074)	(0.0085)	(0.0082)	
Major Economic Crisis						0.2121***
						(0.0670)
Δ Age		0.0149	0.0080	0.0073	0.0068	0.0038
		(0.0152)	(0.0149)	(0.0189)	(0.0188)	(0.0231)
Δ Part-Time Empl.			−1.6727	−1.6912	−1.7881	−2.7635**
			(1.4980)	(1.6177)	(1.5008)	(1.1062)
Δ Religosity				0.0132	0.0152	0.0963
				(0.1850)	(0.1840)	(0.1558)
Δ Unempl.					−0.1082	−0.3869
					(0.8859)	(0.7139)
(Intercept)	−0.1862***	−0.2095***	−0.2046***	−0.2015***	−0.1978***	−0.2594***
	(0.0530)	(0.0535)	(0.0443)	(0.0578)	(0.0561)	(0.0814)
R^2	0.2173	0.2350	0.2806	0.2808	0.2813	0.4905
Num. obs.	19	19	19	19	19	19

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

shown that interaction effects are often interpreted in areas without common support in the data. I follow their suggestion and add histograms which show the distribution of GDP growth to the marginal effects plots. Figure 3.2 presents the results.[17] As expected, the coefficient for the family background dimension does not vary considerably; the impact is very similar between countries which faced a strong recession in 2009 and those which did not. For the other two dimensions, however, the coefficients differ strongly. The marginal effect for the behavioural deservingness dimension is more than twice as large in countries with a major economic downturn of 5% in 2009 compared to those with a positive growth rate of 1%. For the institutional deservingness dimension, the marginal effect increases slightly less, but still substantially by 50%. Thus, the impact of fairness considerations on tax policy preferences has intensified in countries that were hit harder by the crisis. These results are largely in line with *H2*.

[17] Marginal effects plots have been produced with the interplot package (Solt & Hu, 2015).

Figure 3.2: Marginal Effects of Different Fairness Dimensions



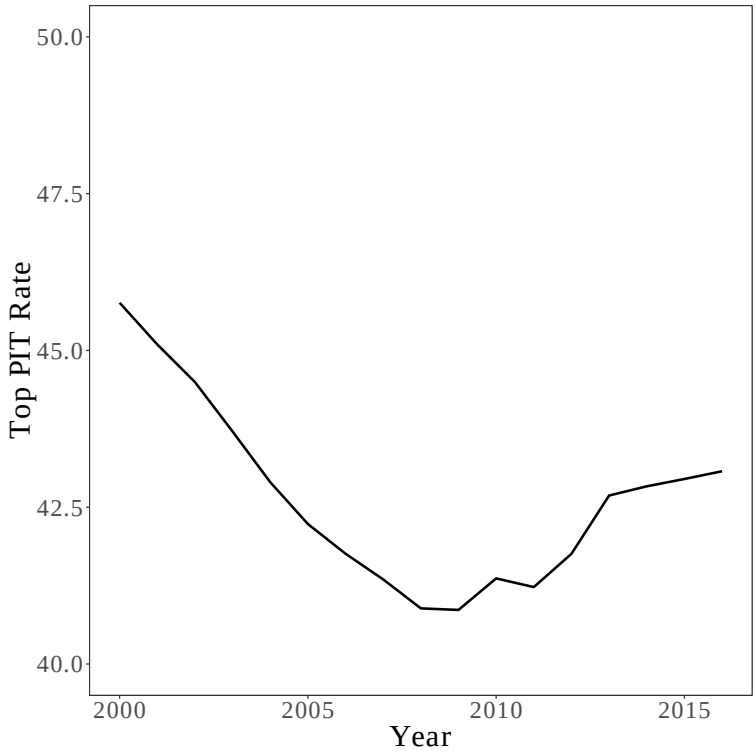
3.5 Conclusion

Can fairness arguments play a role for progressive taxation in the absence of mass warfare? By looking at the impact of the Great Recession on tax policy preferences, I have shown that different fairness dimensions are still important for shaping public preferences towards tax progressivity. The perception of rich people's economic success as individually deserved and institutionally fair suffered as the crisis raised the salience of risky financial investments and fuelled public discussions about regulatory failure and bank bailouts. As a consequence, the impact of the behavioural and institutional fairness dimension on tax policy preferences intensified in countries with a strong economic downturn and demand for progressive taxation increased. The mechanisms during the Great Recession are somewhat similar to those during wartime (Scheve & Stasavage, 2016): when society is doing badly and rich people are perceived as the ones to blame and/or profiteers of state actions, notions of undeservingness are triggered. Hence, people think it is only fair that the rich do worse as well. As a result, aggregate demand for a compression of income and wealth via progressive taxation increases. My analysis also considers that other factors can have an effect on attitudes towards progressive taxation. In fact, dominant theories about the influence of micro level characteristics such as income and religion are supported by my results. Yet, these factors cannot fully explain why attitudes towards progressive taxation vary between countries in the wake of the crisis. Crisis-induced fairness arguments help understand this variation.

Placing my study in the discussion about progressive taxation in the last 30 years, I have shown that public opinion in the wake of the crisis pushes against the general time trend in tax policy-making. Whilst the taxation of top incomes has decreased massively since the late 1970s (Ganghof, 2006b; Kiser & Karceski, 2017; Swank, 2016b), the crisis has raised political demand for progressive taxation again. By analysing preferences for progressive taxation in the wake of the crisis, this study has looked at the demand side – the very first stage of public policy-making. Yet, I have not exam-

ined actual tax policy outputs. Looking at the development of top statutory PIT rates reveals that the crisis was a game-changer indeed (Figure 3.3). Whilst tax rates for top incomes have decreased from 2000 to 2008, this development has reversed since the financial crisis. Thus, the data suggest that demand for progressive taxation was supplied politically. Moreover, the trend of increasing top PIT rates since the crisis has persisted. This indicates that a substantial change in tax policy-making has taken place. However, more work has to be done in order to identify the causal effect of the financial crisis on tax policies. Furthermore, we know relatively little about the responsiveness of governments towards tax policy demands. Finding out when and how politicians react to voters' tax policy preferences is therefore a promising avenue for further research.

Figure 3.3: Top PIT Rate, 2000-2016



Note: Average for 35 OECD Countries. Data come from the OECD (2017a).

Finally, it is noteworthy that the ISSP question about tax progressivity does not exclusively refer to highly progressive tax measures for the richest members of society. Instead, it captures a broader feeling about the idea of redistributive income taxation. While taxing income still marks the focal point of the redistributive tax state,

it would be interesting to investigate whether the crisis has affected attitudes towards other taxes. For example, the idea of redistributing wealth via the taxation of inheritances has recently re-entered the public and scholarly debate (Atkinson, 2015; Piketty, 2014). Other highly progressive taxes such as recurrent taxes on wealth, land taxes, and capital gains taxes have also gained momentum (The Economist 2018). Finding out which role fairness perceptions have played for this development is crucial for our understanding of progressive taxation in the 21st century.

4. 'Tax the Rich'? The Financial Crisis, Fiscal Fairness, and Progressive Income Taxation Worldwide

Abstract

Has the financial crisis influenced taxes on the rich? In this article, I argue that crisis countries have raised income tax progressivity because of fiscal fairness considerations. I test this claim by analysing a new dataset on top marginal personal income tax (PIT) rates for 122 countries from 2006–2014, applying matching methods and a difference-in-differences design. The results show that countries with a financial crisis have increased top PIT rates by 4 percentage points. Furthermore, rising public debt only leads to higher top PIT rates when it is crisis-induced. These findings demonstrate that notions of fiscal fairness can still shape progressive taxation in the 21st century.

4.1 Introduction

Progressive taxation is in vogue again. In the aftermath of the global financial crisis of 2008, claims to 'tax the rich' have gained publicity (Samuelson, 2011). Most prominently, US politicians like Alexandria Ocasio-Cortez, Elizabeth Warren, and Bernie Sanders have recently proposed tax hikes on the wealthiest members of society (Casselman & Tankersley, 2019). In addition, the seminal work of scholars like Piketty (2014) and Atkinson (2015) contributed to the post-crisis debate on income and wealth concentration at the top. But – after three decades of downward trends in top PIT rates (Genschel & Schwarz, 2011; Kemmerling, 2010; Swank, 2016b) – has the crisis really been a game-changer?

In this article, I argue that the financial crisis has indeed caused a turnaround in the politics of progressive taxation. Based on recent work that stresses the role of fairness considerations in tax policy-making (Scheve & Stasavage, 2016), I claim that the crisis and states' reactions to it have violated fiscal fairness principles as financial risk-takers were bailed out with public money. Critics of such state actions have characterised them as 'socialism for the rich' that privatises profits and socialises losses (Stiglitz, 2015). I expect that, as a consequence, governments in crisis countries have increased taxes on top incomes.

I use a novel dataset on top marginal PIT rates for 122 countries from 2006–2014 to test my argument empirically. First, I combine matching methods with a difference-in-differences design to identify the causal impact of the financial crisis on top PIT rates. Afterwards, I analyse panel data to compare the effects of fiscal problem pressure on top PIT rates between crisis and non-crisis countries. My results show that countries which have been hit by the financial crisis have increased their top PIT rates by 4 percentage points on average. Thus, the general downward trend in top income tax rates (Ganghof, 2006b; Kiser & Karceski, 2017) has been reversed in countries with a financial crisis. Importantly, we cannot find these differences between crisis and non-crisis countries for regressive consumption taxes. Furthermore, panel models reveal that ris-

ing public debt does not lead to higher top PIT rates *per se*. Public debt only leads to increasing top PIT rates if is induced by the financial crisis. These results support my argument that rising tax rates on the rich are not solely the result of higher revenue needs in crisis countries. Instead, the procedural dimension matters: if countries face fiscal troubles due to the financial crisis, governments increase taxes on the rich to restore fiscal fairness.

The contribution of my article is twofold. First, the article speaks to a growing body of literature that finds new trends in the politics of taxation since the financial crisis (Emmenegger, 2015; Hakelberg, 2016; Hakelberg & Rixen, 2018). Whilst most of the literature focusses on the causes and consequences of novel forms of international tax regulation (like the Automatic Exchange of Information (AEOI)), my article adds the domestic dimension to these studies. Second, my findings show that the financial crises has had a causal impact on top income tax rates. Financial crises, just like mass wars (Scheve & Stasavage, 2010), can increase taxes on the rich. In the absence of mass warfare, financial crises have the potential to trigger considerations of unequal fiscal treatment. Looking at other shocks and crises therefore helps to understand dynamics of redistributive taxation in the 21st century.

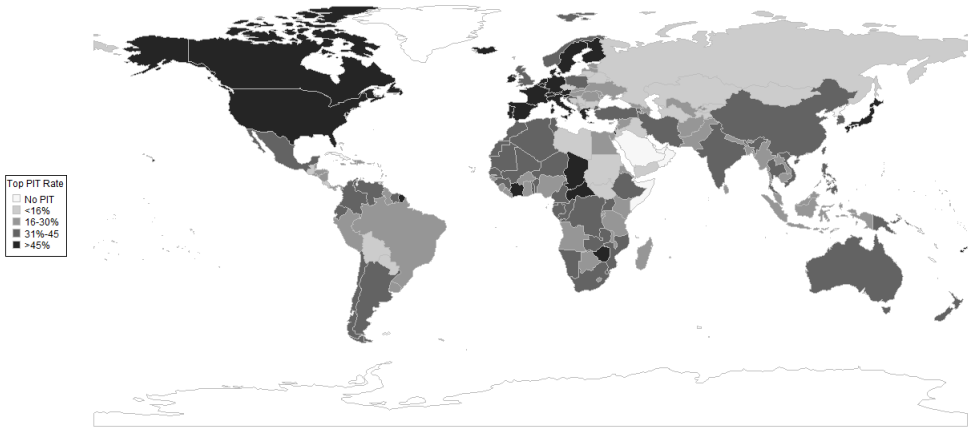
The article is structured as follows. I start by reviewing the literature on taxing the rich with a specific focus on studies that refer to the impact of individual fairness beliefs on tax policies. Afterwards, I develop my argument on fairness claims for progressive taxation in the wake of the financial crisis and present my working hypotheses. In the empirical part, I describe the dataset and explain my identification strategy. After presenting and discussing my results, the final section concludes.

4.2 Taxing the Rich

Taxation of the richest members of society shows a huge variation across the world. Figure 4.1 maps top marginal PIT rates worldwide for the year 2014. Whereas some countries do not tax income at all (e.g., Brunei, Saudi Arabia, and the United Arab Emirates), other countries tax top incomes with marginal rates of more than 45 % (e.g.,

Canada, France, and Japan). In this section, I will give a short overview of the three major literature strands that offer explanations for this variation: theories on globalisation, domestic institutions, and fairness considerations.

Figure 4.1: Top Marginal PIT Rate Worldwide in 2014



Data: Own Coding.

Studies about the impact of globalisation on tax progressivity have been particularly prominent in the political economy literature. The general theoretical expectation is that internationalisation and globalisation cause decreasing tax progressivity (Ganghof, 2006b; Kiser & Karceski, 2017). We can differentiate between two different versions of the globalisation theory. First, globalisation might lead to a spread of neoliberal ideas which evaluate progressive taxation as economically inefficient (Steinmo, 2003; Swank & Steinmo, 2002). In their most simple form, these ideas see highly progressive tax systems as a drag on economic growth. Whereas broad-based, single rate taxes like consumption taxes cause only little deadweight loss, a steeply progressive (income) tax system can lead to changes in market behaviour which might create inefficient economic outcomes (Hall & Jorgenson, 1967). This problem can increase with growing budget size (Lindert, 2004). Second, economic globalisation can lead to competition between nation states over tax efficiency (Genschel & Schwarz, 2011). Especially in the last four decades, increasing capital mobility due to fewer transnational (financial) restrictions, the expansion of double tax avoidance, and technological advance

have led to tax competition between countries. As a consequence, tax rates on capital have been lowered (Franzese & Hays, 2008; Ganghof, 2006b; Rixen, 2011). Small states have particularly strong incentives to decrease top tax rates for capital income since initial revenue losses can be compensated by subsequent tax base expansions (Haufler & Wooton, 1999; Kanbur & Keen, 1993; Wilson, 1991). Because of the so-called 'back-stop function' of the corporate income tax, competition over low corporate income tax rates also affects the progressivity of the PIT (Ganghof & Genschel, 2008).

Whilst globalisation theories look at the impact of worldwide interdependencies, institutional approaches focus on how domestic rules, structures, and norms influence taxation. Domestic institutions can influence tax policy-making in manifold ways (Levi, 1988). Based on the assumption that individuals' tastes for tax policies are solely driven by economic self-interest, the median voter theorem (MVT) expects democratisation to lead to an increase in progressive taxation (Meltzer & Richard, 1981). However, the straightforward MVT expectation that democratic institutions lead to a higher taxation of the rich is subject to academic debate (Scheve & Stasavage, 2012). Aidt and Jensen (2009) find that democracies are laggards when it comes to the introduction of personal income taxes. Mares and Queralt (2015) argue that the role of sectoral elites and the linkage between voting rights and taxation can account for this empirical pattern. In addition, the interplay between landholding inequality, taxation of elites, and democratisation has gained huge scholarly interest recently (Acemoglu & Robinson, 2000; Ansell & Samuels, 2014; Boix, 2003). Work on the resource curse that deals with the negative impact of natural resource wealth on (income) taxation and democratisation is closely related to the taxation and democratisation literature (Ross, 2001). Since countries that are rich in natural resources do not need to tax their citizens, claims of 'no taxation without representation' do not emerge and democratisation is unlikely. Amongst democracies, different institutional settings matter as well. For example, Iversen and Soskice (2006) argue that proportional electoral systems cause more redistributive tax and transfer systems than majoritarian systems. Also, the institutional perspective and theories of globalisation are not mutually exclusive. For

instance, many domestic veto-points dampen the negative impact of globalisation on tax progressivity (Basinger & Hallerberg, 2004; Ganghof, 2006b). Furthermore, autocracies are less participative in tax competition than democracies (Genschel, Lierse, & Seelkopf, 2016).

In contrast to the global and institutional approaches, fairness-based explanations offer a slightly different perspective on the politics of taxing the rich. In this framework, personal perceptions of socio-economic outcomes as *fair* are considered to be important for redistribution (Alesina & Angeletos, 2005; Ballard-Rosa et al., 2017; Fehr & Schmidt, 1999). If inequality is perceived as unfair, demand for correcting these inequalities will be higher (Lü & Scheve, 2016; Tyran & Sausgruber, 2006). This phenomena is called self-centered inequity aversion.[1]

Most studies have analysed the impact of fairness on progressive taxation (and on redistribution in general) either via formal modelling (Fehr & Schmidt, 1999) or by looking at preferences on the micro level (Ackert et al., 2007; Durante et al., 2014; Fong, 2001). The lack of comparative macro-studies comes as no surprise. In particular, disentangling effects of economic self-interest and effects of self-centered inequity aversion on progressive taxation can be tricky. Most importantly, explaining differences in progressive taxation between countries by arguing that they differ in fairness perceptions needs to address *why* countries vary in their perception of fairness in the first place. In their historical study on the impact of mass warfare on progressive taxation, Scheve and Stasavage (2016) try to overcome these problems by taking the procedural dimension into consideration: when procedures are perceived as fair, their outcomes are less likely to be challenged by redistributive taxation. More specifically, the two authors look at whether state's actions violate the principle of treating citizens as equal. If this is the case, compensatory arguments that aim at restoring the principle of equal treatment will gain power. In other words, fairness-based self-centered inequity aver-

[1]The literature differentiates between two types of self-centered inequity aversion: advantageous and disadvantageous inequality aversion. Whereas at the former, individuals are opposed to inequality whilst being in a better financial situation than others, the latter creates support for redistributive taxation out of a situation where an individual is doing economically worse than others (Fehr & Schmidt, 1999).

sion will increase. Regarding taxes on the rich, this has been the case during times of mass warfare. As wealthy citizens have a smaller likelihood of fighting in a war and/or gain higher financial profits from war efforts, they enjoy a preferential treatment by the state. Hence, the highly progressive post-war tax systems in the OECD were shaped by the demand to restore fiscal fairness (Scheve & Stasavage, 2010, 2012). Moreover, fairness arguments to tax the rich have lost power in the last four decades due to the absence of mass warfare. However, macro level studies that look at the impact of fairness arguments in the absence of mass warfare are completely missing. As I argue in the following section, particularly the shock of the 2008 financial crisis and states' reactions to it have led to a revival of fairness considerations to tax the rich.

4.3 Fiscal Fairness and Taxation after the Financial Crisis

From the mid 1970s until the financial crisis, taxation of the rich declined drastically. For instance, top PIT rates in the OECD decreased from 70 % in 1975 to 50 % in 2005 (Ganghof, 2006b, p. 1). It is noteworthy that this decline happened during a time period where OECD countries faced substantially lower growth rates, growing unemployment, and increasing public debt (OECD, 2018b; Pierson, 1998). A similar trend of decreasing tax rates can be observed when the country sample is expanded beyond the OECD (Peter et al., 2010). However, since the financial meltdown of 2008, this trend has come to a standstill. In fact, top PIT rates even increased slightly on average in the OECD from 2008 to 2016 (OECD, 2017a). So, has the financial crisis had a causal effect on top PIT rates? And, if yes, how exactly?

I argue that the sudden halt to the downward movement in taxing top incomes can be explained by notions of fiscal fairness during and after the financial crisis. Fairness considerations for restoring equal fiscal treatment have been articulated prominently during the crisis. Take Ireland, for instance, which was hit extremely hard by the financial crisis of 2008. The budget of 2009 increased the tax progressivity of the income tax system by raising top tax rates via an additional income levy for top incomes while increasing the standard rate tax band. In his speech on the 2009 budget, then

Minister of Finance Brian Lenihan (Fianna Fáil) – declared:

> "The Government is concerned that some of the more expensive tax reliefs, especially for the better off, should be scaled back and the resources used, as appropriate, to protect those taxpayers who are most vulnerable in these times. It is fair and reasonable that those who profited most from the recent good economic times should shoulder a commensurate burden as conditions worsen." (Lenihan, 2008)

A supplementary budget in April 2009 increased the progressivity of the Irish income tax system even further by doubling income levy rates. Lenihan repeatedly referred to the fairness dimension of these tax increases: "The Government has taken care to ensure they are fair, equitable and highly progressive" (Lenihan, 2009). The overall increases in top personal income tax rates during the crisis from 41% to 48%, although implemented by a conservative government, even match the Irish Congress of Trade Unions proposal who demanded for "a fair contribution from the wealthy" (ICTU, 2009).

But how has the financial crises influenced fairness considerations for higher taxes on the rich? Based on the work of Scheve and Stasavage (2016), I argue that compensatory arguments demanding a correction of unequal treatment by the state have pushed for higher taxes on the rich. This perception of unequal treatment came in two forms: first, *indirectly* because of regulatory passivity prior to the crisis and, second, *directly* through state actions during the financial crisis.

Indirect unequal treatment stems from unregulated international financial markets in the run up to the crisis. More specifically, weak regulatory interventions fostered two developments that have affected compensatory claims for tax progressivity. First, richer citizens were the beneficiaries of these unregulated markets prior to the crisis. Increasing tax progressivity therefore aims at making especially those who previously profited the most from deregulated financial systems pay for the crisis. Second, a lack of financial regulation enabled rich investors to take up systemic risks in their financial activities. These risky investments have been perceived as causes of the cri-

sis, which led to blame attribution to rich elites and particularly bankers (Bartels & Bermeo, 2014). Taken together, regulatory passivity of states has caused the perception of an unequal treatment of citizens *indirectly* because it allowed profitable financial risk-taking that facilitated the financial crisis.

Direct unequal treatment during the crisis originates from large scale bailouts of troubled financial enterprises. These public bailout programmes mark an unequal treatment of citizens by the state: a richer subgroup of the population – people involved in or profiting from risky financial activities – benefits from bailouts while costs are externalised by pooling them amongst society as a whole. As described in the previous section, it is the process leading to an outcome that matters for perceptions of fairness, not the final outcome itself. For bank bailouts during the crisis, this means that higher public debt alone is not the main driver leading to a higher tax burden on the rich. What matters is that increases in debt came in the form of external effects induced by state actions. This procedural dimension fosters compensatory demands for tax progressivity (Limberg, 2019). Admittedly, there are more efficient, straightforward ways to compensate for bailouts than raising top PIT rates. For example, in 2010 Italy introduced an additional levy of 10% on variable compensation paid to managers in the financial sector (EY, 2015). Moreover, the G20 at their summit in Pittsburgh from 24-25 September 2009 requested the International Monetary Fond to summarise possible options 'how the financial sector could make a fair and substantial contribution toward paying for any burdens associated with government interventions to repair the banking system.' (IMF, 2010) However, putting a higher tax burden on struggling financial institutions that are kept alive by public money seems counter-intuitive in times of crisis. Excluding those banks which are under immediate financial distress is not an option either, as this would not only fail to fulfil the original purpose of compensation but also punish those banks which have taken less risky activities. Yet, the existence of other, more direct ways of fiscal compensation means that using top PIT rates is a conservative empirical strategy.

It is important to mention that countries with a financial crisis might increase top

PIT increases just to generate desperately needed revenues. Two things have to be considered here. First, if financial crises generally increase tax rates because of revenue needs, the effect would be even stronger for taxes with a broad tax base like consumption taxes (Kenny & Winer, 2006). Second, if top PIT rates are only increased to react to revenue shortfalls, we would expect higher debt to raise rates regardless of the procedural dimension. In other words, increasing levels of public debt would lead to higher tax rates even in the absence of a financial crisis. To the contrary, a fairness-based explanation will only expect more public debt to increase tax progressivity if the procedure that led to rising debt is perceived as unfair. With regard to my study, this means that higher debt will only lead to increasing top PIT rates in countries that have experienced a prior financial crisis. The fact that PIT rates have declined massively since the mid 1970s – thus, after the end of the post-war economic boom and in times of 'permanent austerity' (Pierson, 1998) – supports the view that higher debt does not lead to higher tax progressivity *per se*. I will come back to both points in the empirical analysis.

Based on these theoretical considerations, I formulate my working hypotheses. First, I have argued that fiscal fairness considerations in the wake of the crisis have increased taxes on the rich and particularly top PIT rates.

H1: Countries with a financial crisis have increased top PIT rates to a higher extent than countries without a financial crisis.

Second, if fairness arguments are pushing for increases in top PIT rates, we would not expect to see a similar effects for a regressive tax such as the value-added tax (VAT) or, respectively, the general sales tax (GST). Therefore, my second hypothesis is as follows.

H2: Countries with a financial crisis have not increased standard GST/VAT rates to a higher extent than countries without a financial crisis.

GSTs and even more so VATs are considered to be especially efficient and growth friendly (Kato, 2003; Lindert, 2004; Messere, de Kam, & Heady, 2003; OECD, 2018a; Wilensky, 2002). In particular, they can help to increase the overall tax take whilst

keeping capital taxation at modest levels (Ganghof, 2006a). Thus, increasing GST/VAT rates is a viable policy option for government which worry about economic growth in times of crisis. Hence, one could expect that countries with a financial crisis have increased GST/VAT rates purely out of economic reasons. This makes *H2* a hard test for my argument.

Third, I have argued that fiscal fairness considerations were triggered by (non-)state action before and during the crisis. Crisis-induced increases in public debt are therefore the most visible consequence of this unequal treatment. In the absence of a financial crisis, however, I do not expect higher public debt to have an effect on top PIT rates.

H3: Higher public debt increases top PIT rates if it appears in the wake of the financial crisis.

4.4 Data and Methods

In order to test my hypotheses empirically, I use a new, self-constructed dataset on top marginal PIT rates in 122 countries from 2006–2014. Top PIT rates have been widely used and accepted as a measurement of income tax progressivity (Ganghof, 2006b; Peter et al., 2010; Swank, 2016b; Volscho & Kelly, 2012). Scheve and Stasavage (2016) look at full schedules of income tax rates to compare tax progressivity across countries and time. They find that changes in top PIT rates are a good indicator for overall changes in tax progressivity. Furthermore, higher top marginal income tax rates are an effective policy instrument to lower inequality. Huber, Huo, and Stephens (2017) show that raising top PIT rates reduces extreme income concentration at the top.

I code the top marginal PIT rate for residents excluding social security contributions. If income taxes are levied both on the national and on the local level, rates are combined and the local top rate is taken. In case schedular income taxes are in place, I code the overall top rate. Some countries (e.g. Mauritania) have scheduler income taxes and a general income tax that applies if more than one kind of income is generated. In these cases, the rates for general income tax are taken. Coding is based on

the Ernest & Young Worldwide Personal Tax and Immigration Guides from 2006-2015 (EY, 2015). Additionally, data has been checked and expanded using IMF country reports, several Deloitte reports on 'Key Economies in Africa' (Deloitte, 2015), and the 'Taxing Work' database from the OECD (2017a). Standard GST/VAT rates are taken from KPMG (2017b) and additional information on whether a GST/VAT was in place or not comes from the Tax Introduction Database (Seelkopf & Genschel, 2018).

The empirical analysis is twofold. I start off by testing *H1* and *H2*. To do so, I use a difference-in-differences design to look at the impact of the financial crisis on the change in top PIT and standard VAT rates. The difference in tax rates is calculated from 2007–2010 to capture short-term developments and from 2007–2014 for medium-term change. Data on whether a specific country was hit by a financial crisis in a respective year comes from Laeven and Valencia (2013). The authors measure banking crisis with a dichotomous variable that takes the value one if at least two of the following six criteria are met[2]: deposit freeze and bank holiday, extensive liquidity support, significant guarantees on bank liabilities, significant bank restructuring costs, significant asset purchases, and significant nationalizations. For a detailed description of the exact thresholds for each criterion, see Laeven and Valencia (2013, p.230 f.). In total, 24 countries in my sample have experienced a financial crisis (table C1 in the appendix).[3] Based on the potential outcome approach, I estimate the average treatment effect on the treated (ATT),

$$\tau_{ATT} = E(\tau|D = 1) = E[Y(1)|D = 1] - E[Y(0)|D = 1] \tag{4.1}$$

where τ_{ATT} denotes the treatment effect, D the treatment of facing a financial crisis, $Y(1)$ the mean change in tax rates for treated and $Y(0)$ for untreated countries. Hence, $E[Y(1)|D = 1]$ is the expected mean change in tax rates for treated countries that have received the treatment and $E[Y(0)|D = 1]$ the counterfactual mean. However, the counterfactual mean is not directly observable because we do not know how

[2]Setting two out of six criteria as the threshold includes borderline cases.

[3]Due to missing covariates, Mongolia is the only country with a financial crisis that is not included in my sample.

tax rates in crisis countries would have changed if they had not been hit by a financial crisis. Therefore, I take the mean change in tax rates of untreated countries instead.

$$\tau_{ATT} = E(\tau|D = 1) = E[Y(1)|D = 1] - E[Y(0)|D = 0] \tag{4.2}$$

Yet, experiencing a financial crisis might not be random. If factors that lead to selection into treatment also influence the potential outcome, results may be biased. In order to estimate τ_{ATT}, we therefore have to make two identification assumptions. The selection on observables assumption states that we can observe all variables which might influence both the likelihood of being treated and the outcome of interest. Furthermore, the overlap assumption demands that units – in my case countries – with the same values for a set of covariates X have a positive probability of being either in the control or in the treatment group. Based on these assumptions, I apply a matching approach to deal with the possible selection bias. More specifically, I use genetic matching minimising the mahalanobis distance based on X (Diamond & Sekhon, 2012).

I match upon three covariates which may influence selection into treatment. First, democracies could be more vulnerable to financial crises as they are better integrated into international capital market flows since capital owners need credible commitments that property rights are not arbitrarily violated (North & Weingast, 1989). To measure degrees of democracy, I use a dichotomous democracy measure by Boix, Miller, and Rosato (2013). These scholars take their cue from Dahl (1975), who demands that a democracy ('polyarchy') displays both high levels of participatory access (suffrage), and meaningful electoral contestation. Second, internationalised, open countries might have a higher likelihood of having faced the recent financial crisis as their banks' portfolios are more international. To measure a country's openness, I use the overall KOF Index of Globalization (Dreher, 2006; Dreher, Gaston, & Martens, 2008). Third, richer countries might have a higher risk of facing a financial meltdown as they have bigger financial sectors and a higher degree of monetisation. Therefore, I also include a country's GDP per capita (logged values) (World Bank, 2017). For all three variables, I take the 2007 values to avoid post-treatment bias. Furthermore, I

include the matched-on variables in the regression models after creating the matched dataset (Ho, Imai, King, & Stuart, 2007).

Additionally to the matching approach, I also apply weighting methods (see Table C2 in the Appendix). I calculate propensity scores based on my set of covariates X. These reflect 'the conditional probability of assignment to a particular treatment given a vector of observed covariates' (Rosenbaum & Rubin, 1983, p.41). Thus, the identification assumptions are satisfied if we condition on the propensity scores (Austin, 2011; Hirano, Imbens, & Ridder, 2003). I use entropy balancing to weight observations as it possesses several advantages over using normal predicted propensity scores (Hainmueller, 2012).[4]

In order to test for the impact of changes in public debt on top PIT rates in the wake of a financial crisis (*H3*), I look at yearly data for all 122 countries in my sample from 2006–2014. Since I am mainly interested in tax policy changes, I apply a model that looks at the first difference of the dependent variable. This allows me to rule out unobserved country heterogeneity by looking at changes for my main variables of interest whilst also estimating level effects (e.g., for democracy). Furthermore, I include year fixed effects to control for common trends. The models are calculated with country-cluster robust standard errors. Again, the central dependant variable is the change of a country's top PIT rate in a respective year and data for financial crises is taken from Laeven and Valencia (2013). Fiscal problem pressure is measured by changes in public debt (% of GDP) (World Bank, 2017). To rule out endogeneity, changes in debt are lagged by one year. I let the indicator interact with the crisis dummy (lagged by one year) to compare the impact of changing debt in the wake of the financial crisis to normal times. To account for convergence dynamics in tax policy making, I include the lagged level of the top PIT rate (Plümper & Schneider, 2009). Furthermore, I include a battery of covariates to control for several institutional, economic, and political characteristics of a country. Since the choice of method for estimating time-series cross-sectional models can produce strongly deviating results, I

[4]However, I also check my models for robustness by using predicted propensity scores. Although results stay the same, entropy balancing performs better in balancing the covariates.

also run several other model specifications (see Table C4 in the appendix).

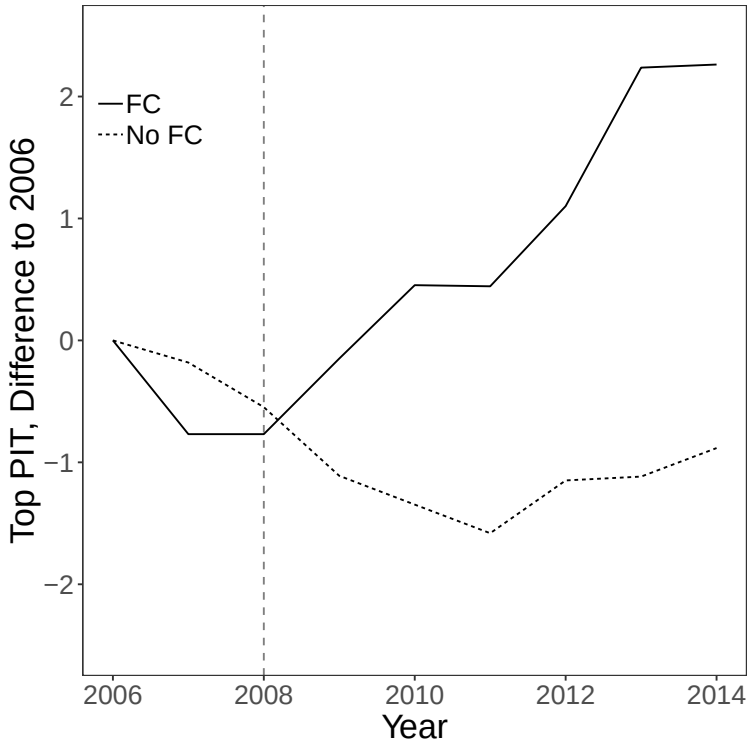
4.5 Results

Before we turn to the matching models, let us first look at the naive difference-in-differences estimator without accounting for a possible selection bias (Equation 4.2). A simple t-test reveals that countries with a financial crisis have increased top PIT rates by 2.4 percentage points in the short (2007–2010) and by 3.7 percentage points in the medium run (2007–2014) compared to non-crisis countries. Both results are statistically highly significant. In contrast, changes in VAT rates do not differ significantly between crisis and non-crisis countries. Importantly, this estimator only looks at difference between countries with and without a financial crisis. Overall, GST/VAT rates have increased by 0.8 percentage points. Thus, consumption tax rates have faced a general upward trend regardless whether a country was hit by a financial crisis or not. This finding is in line with research on overall trends in tax policy making during the last decade (Lierse & Seelkopf, 2016b). Top PIT rates, to the contrary, have been increased in countries with a financial crisis and slightly decreased elsewhere. Figure 4.2 shows mean changes in top PIT rates from 2006 to the respective year. Until 2008, rates in countries with and without a financial crisis show a slight downward trend.[5] Since the crisis, however, rates have diverged.

Looking at the balance statistics reveals that countries that were hit by the crisis were richer, more democratic, and had a higher degree of globalisation (Table C3). As these factors may also influence tax policies, a selection bias might affect the results. When simply controlling for these covariates without matching the data (Table 4.1, Models 1 & 2 as well as Models 5 & 6), the financial crisis still has a positive and statistically significant effect on top PIT rates. The difference-in-differences estimator shows a crisis effect of 2.6 percentage points in the short run and 3.9 percentage points in the medium run. To the contrary, the financial crisis has not had an effect on stan-

[5] Although my data only starts in 2006, looking at data from Peter et al. (2010) supports the assumption of a parallel trend between the treatment and control group (Figure C1).

Figure 4.2: Change in Top PIT Rate From 2006 for Countries With and Without a Financial Crisis



Data: Own Coding.

dard GST/VAT rates. One of the disadvantage of this regression approach is that it does not allow us to asses the balance of our covariates after running the regressions. Therefore, let us turn to the models which use genetic matching (Table 4.1, Models 3 & 4 as well as Models 7 & 8). After using the matching procedure, the standardised mean differences of the three covariates do not show signs of substantial imbalance anymore (Rosenbaum & Rubin, 1985).[6] On average, the financial crisis has increased top PIT rates by 3.1 percentage points in the short run. In the medium run, the effect remains statistically significant and even increases to 4.2 percentage points. In comparison, the financial crisis has not had a statistically significant effect on standard GST/VAT rates.[7] The results are similar when we use a weighting approach instead of matching (Table C2). In total, countries with a crisis have increased progressive top PIT rates whereas GST/VAT rates have not diverged between crisis and non-crisis countries. These find-

[6]Due to the matching process, the number of observations decreases from 122 to 47.

[7]The overall number of observation decreases as the KPMG (2017b) data has a smaller country range. However, data is only missing for countries in the control group.

Table 4.1: The Impact of the Financial Crisis on Change in Top PIT Rates and GST/VAT Rates, 2007–2014

	Δ Top PIT				Δ GST/VAT			
	All Observations		Genetic Matching		All Observations		Genetic Matching	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	2007–2010	2007–2014	2007–2010	2007–2014	2007–2010	2007–2014	2007–2010	2007–2014
Financial Crisis	2.6231*	3.9485*	3.1124**	4.2027*	0.0058	0.0637	0.2055	0.1531
	(1.1192)	(1.6983)	(1.1521)	(1.9128)	(0.3040)	(0.4178)	(0.3857)	(0.5474)
GDP 2007 (log)	1.0175*	1.0470	2.8417**	3.1356*	−0.1327	−0.1787	−0.2494	−0.6330
	(0.4816)	(0.7308)	(0.8735)	(1.4503)	(0.1491)	(0.2050)	(0.3056)	(0.4337)
Globalisation 2007	−0.1127*	−0.0896	−0.3042**	−0.3034	0.0299	0.0410	0.0335	0.0700
	(0.0525)	(0.0796)	(0.0916)	(0.1520)	(0.0158)	(0.0217)	(0.0323)	(0.0458)
Democracy 2007	1.1202	−0.8102	1.8281	2.8566	0.2279	0.7206*	0.5397	1.3353
	(0.8848)	(1.3426)	(1.7192)	(2.8542)	(0.2598)	(0.3571)	(0.6073)	(0.8619)
(Intercept)	−3.5981	−3.6054	−7.7397	−10.9908	−0.7437	−0.9059	−0.3181	0.7506
	(2.3660)	(3.5901)	(4.8163)	(7.9962)	(0.7762)	(1.0668)	(1.6123)	(2.2884)
R^2	0.0943	0.0758	0.3294	0.2202	0.0893	0.1451	0.0780	0.1463
Observations	122	122	47	47	103	103	47	47

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

ings strongly support *H1* and *H2*.

Although the matching approach controls for biases in treatment assignment, it is based on the selection on observables assumption. In other words, matching is not a silver bullet. There might still be unobserved country characteristics that can affect whether a country has faced a financial crisis or not. However, unobserved selection bias may even reduce the observed crisis effect. Think, for instance, of countries with a generally more liberal approach to policy-making (Castles, 1993). Such countries could not only be more likely to experience crises due to loose financial regulations, but they might also be more reluctant to expand redistribution via progressive taxation. Hence, the estimated crisis effect may even be biased downwards due to selection on unobservables.

To get a closer look on the actual mechanisms of this crisis effect, let us now turn to the panel models. The results are presented in Table 4.2. Model 1 shows the results without differentiating whether changes in debt have happened in the wake of the financial crisis or not. Model 2 adds the financial crisis dummy. Finally, Model 3 includes an interaction effect between changes in public debt and the financial crisis. In line with the previous difference-in-differences models, financial crises have a positive impact on top PIT rates (Table 4.2, Model 2). Furthermore, the influence of higher public debt clearly differs depending on whether debt increases in a post-crisis year or not. In 'normal' times, the effect of higher debt is indistinguishable from zero (Model 3). Increasing public debt only leads to higher top PIT rates in the wake of the financial crisis. This finding is also robust to excluding the year fixed effects in order to ensure that the findings are not driven by collinearity of the crises with temporal dynamics (Model 4). Figure 4.3 illustrates this interaction effect by showing the conditional effect of changes in public debt on changes in top PIT rates. In countries without a prior crisis, increasing public debt does not increase the predicted change of top PIT rates. If increases in debt happen in the wake of the financial crisis, however, predicted tax rate changes are positive and statistically significant. The assumption of common support holds: for example, there are 172 country-year observations in which increases in debt

were higher than 5% of GDP. On average, a crisis-induced increase in debt by 5% of GDP leads to a predicted rise in top PIT rates by 0.7 percentage points. Since there are more non-crisis years (855) than crisis-years (121), confidence intervals are larger for the effect of Δ Debt with a previous financial crisis.

Table 4.2: Panel Models, 2006–2014

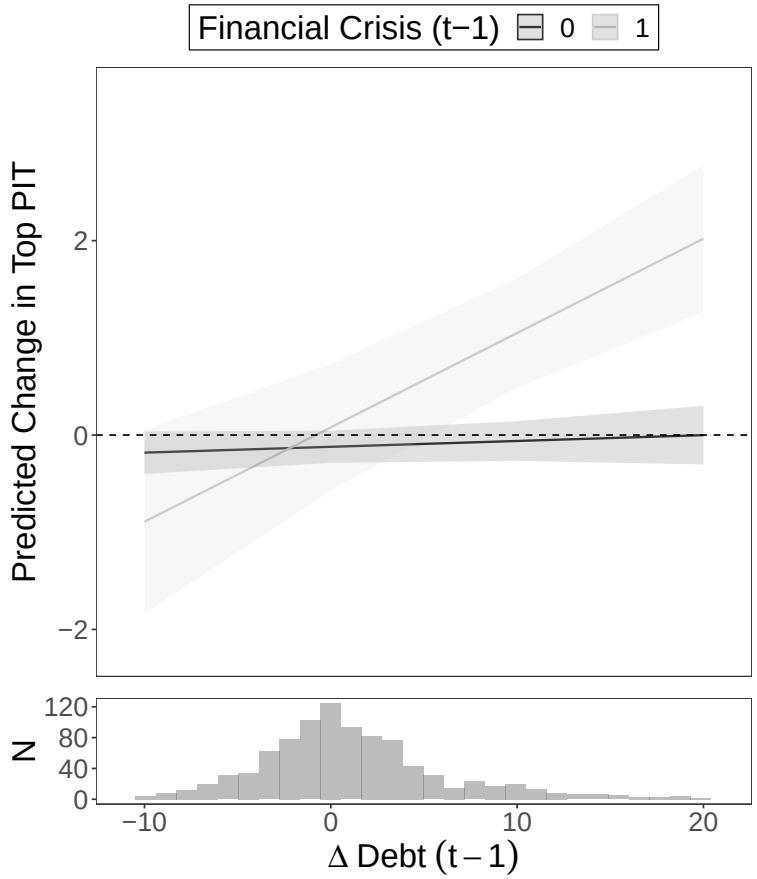
Dependent Variable: Δ Top PIT Rate				
	(1)	(2)	(3)	(4)
Top PIT$_{t-1}$	-0.0136*	-0.0164*	-0.0171*	-0.0167*
	(0.0069)	(0.0073)	(0.0072)	(0.0070)
Δ Debt$_{t-1}$	0.0116	0.0107	0.0038	0.0060
	(0.0079)	(0.0073)	(0.0063)	(0.0068)
Financial Crisis (t-1)		0.6929*	0.1905	0.2000
		(0.3369)	(0.3550)	(0.3396)
Δ Debt$_{t-1}$ * Financial Crisis$_{t-1}$			0.0983***	0.0911***
			(0.0221)	(0.0230)
Δ Unemployment	0.0940	0.0863	0.0644	0.0404
	(0.0568)	(0.0546)	(0.0528)	(0.0484)
GDP per Capita (log)	0.0753	0.0629	0.0816	0.1121
	(0.1225)	(0.1273)	(0.1240)	(0.1193)
GDP Growth	-0.0583*	-0.0506*	-0.0482*	-0.0342
	(0.0229)	(0.0225)	(0.0225)	(0.0211)
Globalisation	-0.0062	-0.0101	-0.0107	-0.0115
	(0.0126)	(0.0121)	(0.0117)	(0.0117)
Democracy	0.0713	0.0963	0.0899	0.1023
	(0.2238)	(0.2275)	(0.2280)	(0.2270)
Population (log)	0.0589	0.0481	0.0571	0.0591
	(0.0453)	(0.0458)	(0.0450)	(0.0459)
R^2	0.029	0.034	0.041	0.028
Observations	976	976	976	976
Countries	122	122	122	122
Year FE	✓	✓	✓	✗
Robust SE	✓	✓	✓	✓

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

In sum, higher public debt does not lead to more progressive taxation *per se*. Instead, increasing public debt as an effect of state action prior to and during the financial crisis raises demands for compensatory taxation. To put it in other words, the causes of dire fiscal times shape tax policy-making. If higher debt takes the form of an external effect of the financial crisis (e.g., because of public bailouts), tax progressivity increases to compensate for this process (*H3*).

Most of the control variables do not have a statistically insignificant effect on top PIT rates. The coefficients for the lagged top PIT rates are negative and statistically significant. This indicates that top PIT rates have converged as countries with initially lower top PIT rates slowly catch up. Real GDP growth has a negative and statistically significant coefficient, too.

Figure 4.3: Conditional Effects for the Impact of Δ Debt on Δ Top PIT Rate With and Without a Financial Crisis

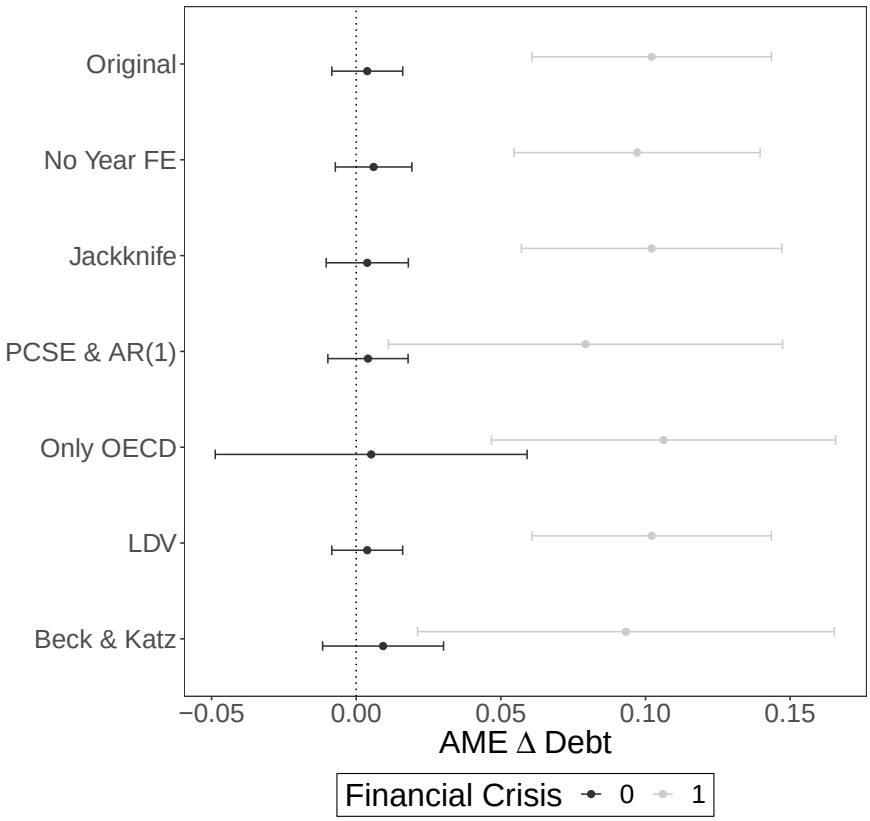


Note: Shaded areas in the upper plot show 95% confidence intervals.

To check the robustness of my findings, I run several additional model specifications. First, influential cases might bias the results. To deal with this problem, I perform a stepwise exclusion of countries via a jackknife procedure. Second, I use panel-corrected standard errors (PCSEs) as well as a Prais–Winsten estimation which models first-order autoregressive (AR(1)) disturbances (Plümper, Troeger, & Manow, 2005). Third, I run a subset analyses only for the 36 OECD countries to ensure that the results are not driven by the heterogeneous country sample. As all of OECD countries were democratic throughout the observation period, I cannot estimate the effect of democratic institutions on tax rate changes. Fourth, I look at the level of the top PIT rate instead of its first difference. By doing so, the purpose of the lagged dependent variable changes. Instead of controlling for dynamics of policy convergence, it now serves as a dynamic specification which controls for autocorrelation (Keele & Kelly,

2006). Finally, I run a model which follows the so-called *de facto* Beck and Katz (1995) standard as it includes a lagged dependant variable, country and year fixed effects as well as PCSEs. Results hold throughout all models (Table C4, Models 1-5). Figure 4.4 visualises this by showing average marginal effects of changes in debt for all the different models. Across specification, higher public debt does not lead to increases in top PIT rates in the absence of a financial crises. To the contrary, crisis-induced debt has a positive and statistically as well as substantively significant effect on top rates.

Figure 4.4: Average Marginal Effects of Δ Debt With and Without a Financial Crisis



Note: Point Estimates and 95% confidence intervals.

4.6 Conclusion

Has the financial crisis led to higher taxes on the rich? Using new data on top PIT rates for a global country sample, I have shown that the financial crisis has indeed caused rising tax rates on high incomes. On average, the financial crisis increased top PIT rates by more than 4 percentage points in the medium run. Furthermore, this effect does not

solely stem from a need for revenues in times of crisis. As my analysis has shown, we cannot observe a similar crisis-effect for revenue-efficient yet regressive sales taxes. Thus, rising top PIT rates serve the function of restoring fiscal fairness. As richer subgroups in the population profited from state actions both directly and indirectly in crisis countries, higher tax rates on the rich aim at compensating for this unequal treatment. In line with studies about the effect of warfare on tax progressivity (Scheve & Stasavage, 2016), I have argued that the procedural dimension of socio-economic outcomes is a crucial factor for policy-making. It is not general fiscal problem pressure that causes politicians to raise tax rates on the rich. Instead, what matters is how these problems were caused in the first place. The empirical analysis has supported this approach: higher debt does not lead to increasing top PIT rates *per se*. In fact, higher public debt only increases tax rates on top incomes if it is crisis-induced. Hence, only if higher debt is perceived as the unfair result of (pre-)crisis measures, top PIT rates will rise to compensate for this unequal treatment.

The findings of my study have implications for the growing literature on inequality and tax policy-making in the 21st century (Kiser & Karceski, 2017; Piketty, 2014). First, I have shown that fiscal fairness considerations to tax the rich (Scheve & Stasavage, 2016) also work in the absence of mass warfare. In my study, the financial crisis has served as an example for another different macro-level shock that caused a revival of progressive taxation. Thus, fiscal fairness claims still play a role for tax policy-making and the demise of mass warfare does not necessarily mean the end of progressive taxation as we know it.

Second, there is still *room to manoeuvre* for national (tax) states. For a tax like the PIT which is indirectly under global market pressure (Ganghof, 2006b), national governments can increase top tax rates. Yet, three things have to be considered here. First, as the PIT offers more degrees of freedom to tax policy-makers, we might not expect to see a similar crisis effect for a tax with a more mobile tax base like the corporate income tax. In fact, the Irish case offers anecdotal evidence on this. In the very same budget speeches where Minister Lenihan justified top PIT rate hikes with

compensatory claims, he spoke out against raising corporate income taxes as it was 'a key aspect of our inward investment strategy' (Lenihan, 2009). Second, multilateral cooperation against tax evasion in the aftermath of the crisis has changed the scope conditions of taxing personal income (Hakelberg, 2016). These measures, and most notably the AEOI, have increased the capability of national governments to adjust taxation of personal income even further (Hakelberg & Rixen, 2018). Third, the average crisis effect on top PIT rates is substantial (four percentage points) when we look at tax policy-making in the last 30 years. As a comparison, the Social Democratic Party (SPD) of Germany demanded an increase of the top PIT rate by 3 percentage points in the 2017/2018 coalition talks with the Christian Democrats (Süddeutsche Zeitung, 2018).[8] However, the size of the crisis effect is relatively small compared to the effect that previous wars and crises had on tax progressivity over the long run of history. For instance, Scheve and Stasavage (2010) find that countries which mobilised for World War I raised top marginal PIT rates by more than 30 percentage points.

While this study has looked at the PIT as a highly visible and contested tax, examining the crisis' effects on other progressive taxes is a crucial next step. For example, what role have fiscal fairness claims played in the wake of the financial crisis for extremely progressive taxes on inheritances and net wealth? Did the crisis have an influence on property and land taxes, which are predominantly levied on the subnational level? And what role did fairness arguments play for proposals of a financial transaction tax? Finding out which factors are driving the development of other highly redistributive taxes is crucial for our understanding of inequality dynamics nowadays.

[8]The SPD's proposal faced strong objections from employers' organisations as well as from their coalition partner which warned that an increase of the top PIT rate would have negative economic consequences (FAZ, 2018).

5. Conclusion

5.1 How Financial Crises Have Shaped the Tax State

Have financial crises left their imprint on the modern tax state? In this thesis, I have argued that financial crises have been crucial, yet broadly overlooked events for the evolution of progressive income taxation. I have stressed three factors that can account for the impact of crises on tax policies: *revenue needs*, demands for *fiscal fairness*, and *ratchet effects*. All three articles in this dissertation are based on these theoretical considerations. Yet, they shed light on different aspects of the crises-taxes nexus.

In the first article ("Financial Crises and the Modern Tax State"), I examine the impact of financial crises on the origins of the modern tax state. More specifically, I show that financial crises have facilitated the adoption of progressive PITs. To the contrary, the introduction of regressive GSTs has been unaffected by crisis experiences. A closer study of the US case reveals that both revenue needs and fiscal fairness claims pushed for the introduction of the income tax. The new income tax helped to meet crisis-induced fiscal difficulties. Furthermore, it supplied demands for fiscal fairness by shifting the tax burden away from regressive tariffs and excises onto higher incomes. Later financial crises in the US did not cause significant support for the adoption of a federal sales tax - despite the fiscal problems that came along with them (Reinhart & Rogoff, 2009b; Steinmo, 1993). Finally, the introduction of a PIT caused ratchet effects. After the income tax was introduced federally by a constitutional amendment in 1913, the US government quickly expanded the extractive capacity of the tax. Tax rates were increased and the tax base was broadened (R. G. Blakey & Blakey, 1940; Buenker,

1985). By 1916, the PIT generated more than 16% of US central government revenue (Andersson & Brambor, 2018). This development was accompanied by an expenditure increase as well. Thus, a later repeal of the income tax would have left governments with the choice of either cutting expenditure massively or risking a potential fiscal fiasco. Both scenarios are unattractive – making the abolition of PIT unlikely. In sum, the first article of this dissertation shows that financial crises have helped to reform the tax state fundamentally. By taxing income, the state tapped into a new tax base, it shifted the tax burden from poorer to wealthier citizens, and it paved the way for the consolidation and expansion of the fiscal state.

The historical and geographical macro perspective of the first article possesses several advantages. Yet, such a broad approach also comes at a costs. In particular, analysing the role of individual fairness demands is difficult from a bird's eye view. Therefore, the second article of the dissertation ("What's Fair? Preferences for Tax Progressivity in the Wake of the Financial Crisis") focusses on the demand side of progressive income taxation. Looking at preferences for tax progressivity in 32 countries after the financial crisis of 2008, the article deals with two questions. First, has the demand for progressive taxation been higher in countries that were hit harder by the financial crisis? And, second, how has the crisis interacted with different fiscal fairness claims? The article analyses micro data from the 2009 ISSP round to answer these questions. It finds that demand for tax progressivity has been higher in countries that have faced a stronger economic downturn. This effect stems from an intensified impact of behavioural and institutional deservingness perceptions. In other words, the effect of fairness beliefs on tax policy preferences has become stronger in crisis countries. Thus, fiscal fairness perceptions do play a crucial role for tax policy preferences in times of crisis. Furthermore, this second article adds a contemporary analysis to the historical perspective of the first article. Not only have financial crises shaped the origins of modern tax systems, but they can still affect tax policy demands in the 21st century.

Has this renewed demand for progressive income taxation been supplied politically? This is the question the third article of the dissertation ("'Tax the Rich'? The

Financial Crisis, Fiscal Fairness, and Progressive Income Taxation Worldwide") deals with. Using a global country sample and new data on top marginal PIT rates, the article finds that fiscal fairness claims for higher taxes on the rich were supplied indeed. In countries with a financial crisis, top PIT rates increased on average by 4 percentage points compared to countries without a financial crisis. Furthermore, the article demonstrates that this effect does not merely stem from revenue needs. The analysis shows that public deficits only increase top PIT rates if they are crisis induced. In short, the third article finds that financial crises can still raise progressive taxation of income in recent times – even if structural circumstances (neoliberal *zeitgeist*, international tax competition) are less favourable.

5.2 Income Taxation in the 21st Century

As this dissertation has shown, financial crises matter for progressive taxation. Crises have facilitated the rise of the core element of progressive tax policies in the last century – a strong and redistributive income tax. Moreover, the thesis has demonstrated that financial crises can shape tax policies nowadays. In crisis countries, fiscal necessities and fairness demands have led to a reversal of the trend of falling top income tax rates. The fact that these effects are most pronounced for income taxation comes as no surprise. After all, the PIT is still the focal point for progressive taxation at the beginning of the 21st century. However, one may doubt that the income tax is the best policy instrument available for taxing the rich nowadays. In the following, I argue that three different factors have reduced the effectiveness of income taxation and limited the room to manoeuvre for income tax policy-making in the last decades: wealth inequality, international economic integration, and the expansion of the income tax to a mass tax.

Wealth Inequality

First, the structure of inequality has changed. This, in turn, has undermined the redistributive capability of the PIT. Recently, scholars have pointed out that contemporary inequality dynamics are crucially driven by wealth concentration (Piketty, 2014; Piketty & Zucman, 2014a, 2014b). As wealth becomes less dispersed, capital and income shares of the richest members of society rocket (Atkinson, 2014; Piketty, 2014). In other words, wealth inequality lies at the heart of (income) inequality nowadays. For example, in France the net personal wealth of the top 1% made up 17.21% of total wealth in 1980. By 2014, this share had increased to 23.38%. In the same period the share rose from 15.8% to 27.83% in China and from 22.54% to 37.24% in the US (Piketty & Zucman, 2014a). Furthermore, the development of real estate markets and rising housing prizes have contributed considerably to growing inequality (Atkinson, 2015; Knoll, Schularick, & Steger, 2017).

Is income taxation the most effective policy tool to tackle wealth inequality? To be clear, income taxation can reduce wealth inequality. Higher taxes on capital income can dampen capital accumulation and slow down dynamics of wealth concentration (Atkinson, 2014; Scheve & Stasavage, 2017). However, levying taxes that directly fall onto wealth may be a more straightforward approach to reduce capital concentration than trying to indirectly tackle wealth inequality via taxes on income. For example, a property tax is a more direct policy tool to reduce real estate inequality than higher tax rates on income from capital (such as rents). Furthermore, the tax base of most wealth taxes is less mobile than capital income. For instance, taxes on inheritances are based on citizenship or residency in many countries (Schoenblum, 2008). Hence, shifting assets across borders is often not enough to evade inheritance taxes. Or, take the example of taxes on real estate. Even a highly integrated world economy does not help people to evade taxes on immovable property. Therefore, property taxes might be better equipped for reducing real estate inequality than income taxes in times of open markets.

International Economic Integration

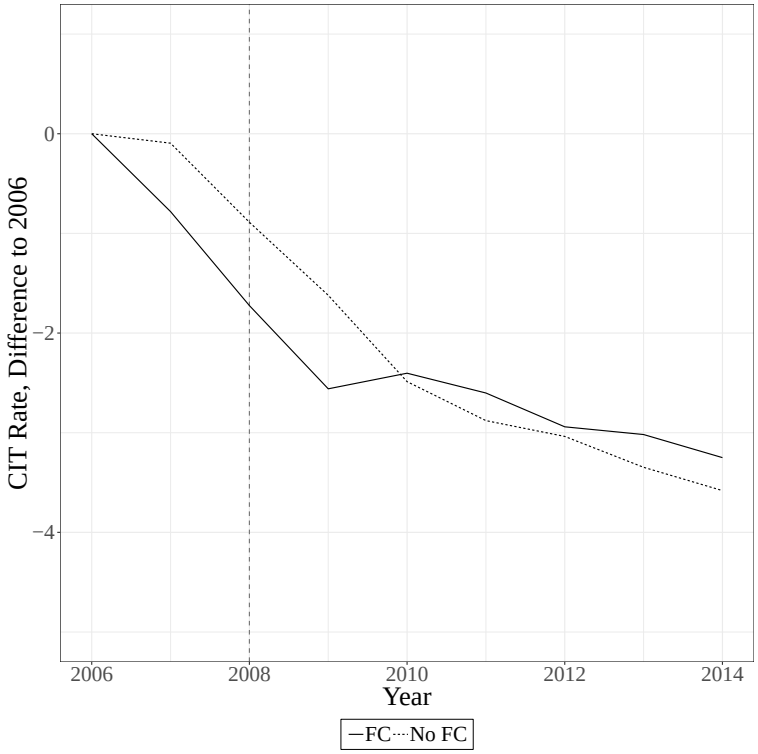
The second change in scope conditions for income tax policy-making is the deepening of international economic integration (or, short, globalisation). In the last decades, markets have internationalised. A decline in formal and informal trade barriers, higher individual mobility, and technological advances have fuelled economic globalisation (Dreher et al., 2008). Income taxes have facilitated the process as well: as I have shown in Section 1.2, the introduction of the PIT allowed countries to boost international trade by lowering tariffs. In addition, bilateral double tax treaties institutionalised an international system of double tax avoidance which, in turn, facilitated economic integration (Rixen, 2011). Furthermore, the global diffusion of VAT since the 1960s enabled governments to lower tariffs and to integrate national economies into international markets even further (Keen & Lockwood, 2010).

Deepened international economic integration has put downward pressure on the progressivity of the income tax (Ganghof, 2006b; Swank, 2016b). Tax competition between nation states has restricted the room to manoeuvre for national governments considerably (Genschel, 2002; Genschel & Schwarz, 2011; Swank, 2006). This process is most pronounced for corporate taxation. Profit shifting of multinational companies, threats of capital flight, and competition for foreign direct investment have led to falling CIT rates (Genschel & Jachtenfuchs, 2011; Swank, 2016a). Scholars have identified spillover effects from CIT policy-making to the PIT because both taxes fall on the same macroeconomic tax base – namely income. In other words, competition over lower CIT rates leads to decreasing top PIT rates because the CIT serves as a backstop for the PIT (Ganghof & Genschel, 2008). Thus, higher levels of international economic integration constrain the ability of governments to increase taxes on high personal incomes.

Looking at the effect of the 2008 financial crisis on income taxation exemplifies the constraining scope condition of economic globalisation (see Chapter 4). Although the average crisis effect on top PIT rates is substantial (four percentage points), its size is limited compared to the effect that previous wars and crises had on tax progressiv-

ity. For instance, Scheve and Stasavage (2010) find that countries which mobilised for World War I raised top marginal PIT rates by more than 30 percentage points. Furthermore, tax rates for corporate income – the other substantive part of income taxation – have not differed significantly between crisis and non-crisis countries. Figure 5.1 shows the change in CIT rates for a global country sample from 2006 to 2014. On average, statutory CIT rates have been lowered both in countries with and without a financial crisis. The comparison between the two groups does not reveal systematic differences either. This development is in line with the findings from the Irish case during the financial crisis of 2008 (Chapter 4). Here, the government raised top PIT rates to supply fiscal fairness demands whilst explicitly stating that an increase of the CIT rate was not a viable policy option (Lenihan, 2009).

Figure 5.1: Development of CIT Rates, 2006–2014



Note: Country sample covers 109 independent states. Data come from Laeven and Valencia (2013) and KPMG (2017a).

In sum, countries have continued to lower CIT rates even in times of crisis. International market forces sill trump domestic policy dynamics in business taxation. Although governments have more degrees of freedom to increase top PIT rates, room

for adjustment remains limited due to spillover effects from CIT competition. Hence, international economic integration restricts the options of national government to increase the progressivity of the PIT. In many countries, the introduction of the income tax was one of the preconditions for lowering tariffs and for opening markets. Thus, it seems like the PIT has been a victim of its own success.

PIT as a Mass Tax

Third, the role of the income tax has changed drastically since it's adoption. Following Wagschal (2005), taxes can fulfil a variety of functions. Here, I focus on three of these functions: the extent to which a tax is used as a revenue-raising tool (*fiscal function*), its capacity to redistribute economic resources (*redistributive function*), and the potential to secure economic growth (*efficiency function*).[1] Originally, the PIT was set up as a means to extract revenue by taxing the rich. However, the PIT has transformed over the decades. Instead of staying a 'class tax' exclusively levied on the richest members of society (like in the US at time of introduction, see Chapter 2), its base has been widened (Mehrota, 2013). Thus, the PIT has developed into a 'mass tax' paid by the majority of income earners (Jones, 1988). Or, in the words of Wagschal's (2005) typology, the *fiscal function* of the PIT was expanded.

In the long run, the expansion of the PIT's *fiscal function* to a mass tax put restrictions onto the income tax. A bigger overall income tax burden sets limits to the redistributive capacity of the PIT. Governments that have a high overall tax take are under pressure to reduce the tax burden on capital to secure economic growth (Ganghof, 2006a; Lindert, 2004; Wilensky, 2002). Thus, trying to fulfil both the *fiscal function* and the *redistributive function* via the income tax might damage its *efficiency function*. Although designs to reduce the tax burden on capital by modifying the internal structure of the PIT do exist (Ganghof, 2006a, 2006b), these approaches still reduce the overall progressivity of the PIT.

[1] Other functions are: the potential of a tax to change individual behaviour and internalise external effects (*economic allocative function*); smoothing business cycles (*stabilising function*); and fostering processes of democratic competition over public policies (*political function*).

5.3 The Future of Progressive Taxation

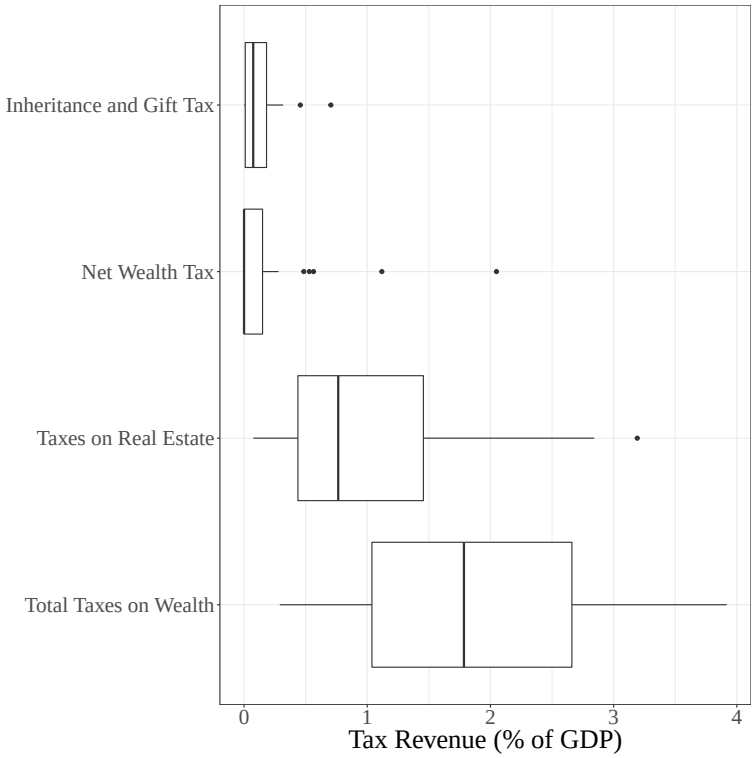
If income taxation is no panacea for taxing the rich anymore, what future is there for progressive taxation? Several scholars have dealt with this question (Atkinson, 2014, 2015; Dietsch & Rixen, 2016; Piketty, 2014). Open international markets and high capital mobility are the major challenges for progressive taxation in the 21st century. Global cooperation between nation states is the preferred solution of many authors to overcome the prisoner's dilemma of competing tax systems (Dietsch & Rixen, 2016; Piketty, 2014). Indeed, international cooperation on tax policy issues has expanded since the financial crisis of 2008. In particular, new multilateral agreements on the automatic exchange of information allow governments to effectively fight tax fraud (Hakelberg & Schaub, 2018). Yet, further cooperation on the international level – or even common minimum standards for taxation – face strong structural barriers (Genschel & Plumper, 1997; Scharpf, 2006). Therefore, in this section I look at *domestic* policy options to increase tax progressivity in globalised markets.

I focus on three different types of taxes: inheritance taxes, property taxes, and capital gains taxes. All three fall on the same tax base, namely wealth. Recalling the finding of Piketty (2014) and others that wealth inequality lies at the heart of general inequality, the three taxes would be suitable policy tools to reduce inequality. Moreover, all three taxes are less vulnerable to open international markets and tax competition than the income tax. Also, they have a very specific focus on the *redistributive function*. Thus, neither of these taxes would radically replace revenues from taxes on income and consumption. Instead, they are redistributive supplements to the existing tax system. Combining broad-based taxes on consumption and income which fulfil *fiscal functions* with highly redistributive taxes on wealth promises to be an effective approach to face challenges to tax policy-making in the 21st century. The limited *fiscal function* of taxes on wealth is shown by Figure 5.2. The graph displays the overall revenue (measured as a percentage of GDP) from taxes on wealth in 34 OECD countries in the year 2012. Total taxes on wealth generate less than 2% of GDP in the median of which taxes on

real estate make up the lion's share. Taxes on net wealth and inheritances play a more marginalised fiscal role – many OECD countries do not levy these taxes at all. As capital gains taxes are often integrated into income tax statistics, they are excluded from the graph due to limited comparability.

Finally, it is noteworthy that at least two of the three taxes (the inheritance tax and the tax on real estates) are fairly old policy instruments. Yet, both taxes have lost significance with the expansion of modern taxes on income and consumption. As I show below, the inheritance tax has even been abolished completely in many countries around the globe.

Figure 5.2: Revenue From Taxes on Wealth



Note: Data come from the OECD (2017b).

Inheritance Tax

Inheritance taxes are levied on transfers of wealth from deceased persons. Technically, we can differentiate between two types of taxes on bequests: inheritance taxes and estate taxes. Whilst inheritance taxes fall on the amount of wealth received by the heir, estate taxes are based on the absolute value of the estate left by the deceased (Messere,

1998, p. 22). According to Messere et al. (2003, p. 175), the estate tax is easier to administer because authorities have to deal with fewer accounts. However, the inheritance tax has the advantage that it allows to adjust the tax burden in accordance with the individual circumstances of the heir. For example, it can take the family relation to the deceased into account.[2] The general trend has been to levy an inheritance tax instead of an estate tax (Messere et al., 2003, p. 176). For reasons of simplicity, I will use the terms inheritance tax and estate tax interchangeable in the following. In most countries, the inheritance tax is additionally backed up by a gift tax to close loopholes for tax avoidance.

Inheritance taxes are widely seen as effective measures to reduce wealth inequality and capital concentration (Atkinson, 2014; Messere, 1998; Piketty, 2014; Piketty & Saez, 2013; Scheve & Stasavage, 2017). But are inheritance taxes less vulnerable to globalisation and tax competition? In principle, there are three different approaches to taxing bequests in a globalised world: the location principle, the residency principle, and the citizenship principle. Each of these approaches differs in the extent to which it creates room for tax avoidance and therefore in the way it puts nation states in competition to one another.

Applying the location principle means that bequests are taxed after the tax laws of the country where the asset is located geographically. This approach generates most room for tax avoidance if assets are mobile. People can avoid inheritance taxes by bringing their wealth to countries that do not levy taxes on inheritances at all. However, inheritance tax laws hardly ever apply the location principle (EY, 2018). The only exception is the taxation of inherited real estate. For example, the transfer of immovable property located in Belgium is subject to Belgian inheritance tax laws. Yet, real estate is largely immovable property. Therefore, tax avoidance does not pose a fundamental problem to applying the location principle to real estate transfers. Hence, inheritance tax competition is unlikely.

[2]Messere et al. (2003, p. 175) favour the accession tax which is a specific form of the inheritance tax. The accession tax is calculated on the bases of all assets that an individual receives via gifts and inheritances. Thus, instead of taxing single legacies and gifts independently, it taxes the cumulative accession.

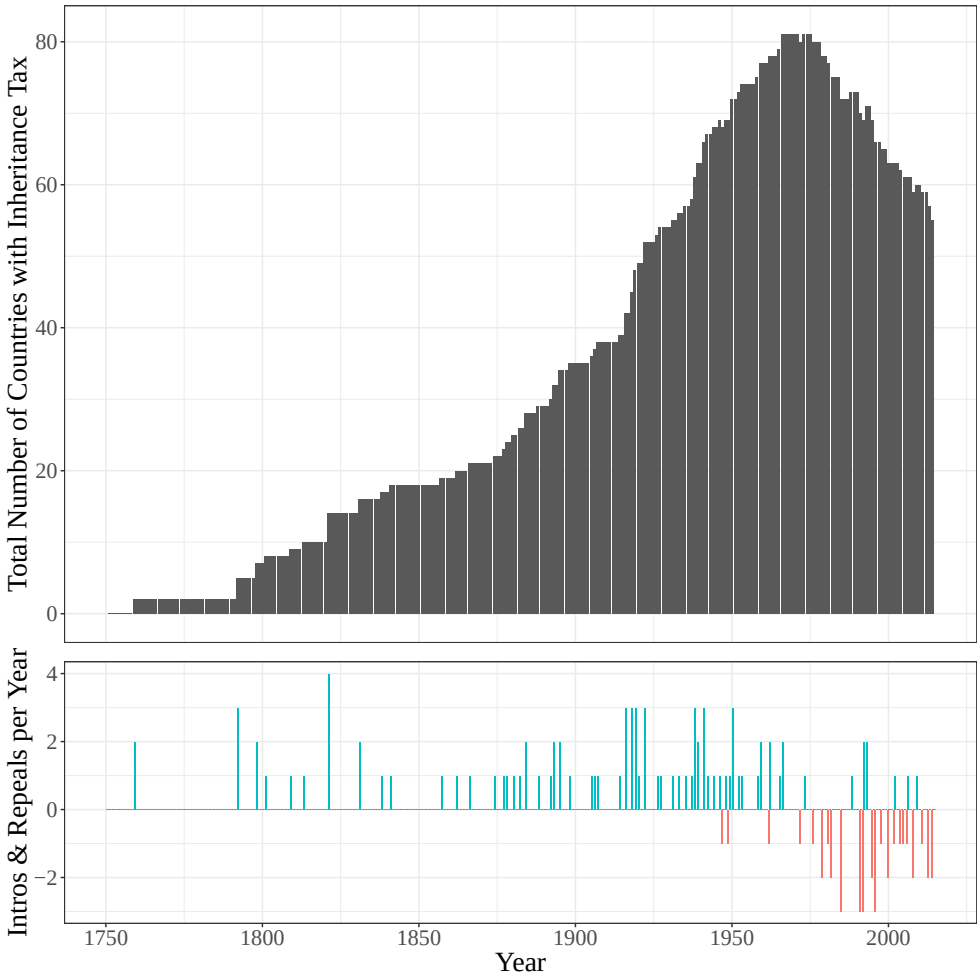
Under the residence principle, bequests are taxed according to the laws of the country where the deceased/heir resides. Thus, individuals can change their place of residence to evade inheritance taxation. The residence approach is fairly popular. For example, the inheritance tax laws in Finland and Germany are mainly based on this principle. As moving residence abroad is "not impossible but often cumbersome" (Genschel & Schwarz, 2011, p. 343), we can expect that room for tax avoidance and the effects on tax competition are limited.

According to the citizenship principle, inheritances are neither based on the location of the asset nor on the place of residency. Instead, an individual's citizenship determines which national inheritance laws apply. Amongst others, inheritance tax systems in Bulgaria, Spain, and the USA largely follow this principle. Changing citizenship can be a difficult, protracted, and costly process. Hence, room for tax avoidance is narrow and tax competition marginal.

Although the inheritance tax is an effective redistributive tool in times of open markets, it has been on the demise. Figure 5.3 shows the absolute number of countries with an inheritance tax as well as the number of introductions and repeals per year. Two things stand out: first, the inheritance tax has a long history. The first inheritance tax has been introduced as early as 1759 (in Austria). Second, the absolute number of countries with an inheritance tax peaked in 1970. Afterwards, the total amount of countries that levied taxes on bequests has decreased rapidly. Most repeals have taken place in the last 50 years. Beforehand, there were only two cases of inheritance tax repeal which happened due to transitions into Communism (China in 1949 and Romania in 1947). A few studies have looked at the politics of inheritance taxation. However, most of these analyses are single country studies (Bartels, 2005; Emmenegger & Marx, 2018; Krupnikov, Levine, Lupia, & Prior, 2006) or they compare a limited amount of OECD countries (Beckert, 2008; Duff, 2005; Graetz & Shapiro, 2005; Scheve & Stasavage, 2012). Analyses of the global phenomenon of inheritance tax repeal are completely lacking. Finding out why some countries have abolished taxes on bequests whilst others have kept them is therefore a first step to identify the potential of the inheritance

tax as a redistributive tool in the future.

Figure 5.3: The Rise and Fall of Inheritance Taxation



Note: Country sample covers 93 countries that have introduced the inheritance tax and for which full information on introduction and repeal are available. Data is based on own coding as well as on Seelkopf and Genschel (2018).

Property Taxes

Property taxes are recurrent taxes on assets. In the following, I will focus on two different types of property taxes: net wealth taxes and taxes on real estate. Whereas net wealth taxes may have limited effectiveness in times of open markets and in the absence of international tax cooperation, taxes on real estate are promising redistributive policy instruments.

Recurrent taxes on net wealth are levied on the absolute value of an individual's financial assets. In some countries (for example in Norway), wealth from financial as-

sets and real estate is summed up and cumulatively taxed under the same net wealth tax. Yet, most states tax the the two types of assets separately. I am exclusively referring to net wealth taxes on as taxes on financial assets here.

In contrast to the inheritance tax, the net wealth tax is a rather new tax. In its current form, it emerged in the last century (Messere et al., 2003). For example, Sweden introduced a net wealth tax in 1910, India in 1957, and France in 1982. Several countries (such as Japan, the United Kingdom, and the United States) have never levied a recurrent net wealth tax on a permanent basis at all. In those countries where the tax has been collected, its revenue raising capacity was limited. In Spain, the net wealth tax was introduced relatively late (in 1977) and never generated more than 0.2% of GDP. In 2008, before the start of the financial crisis, the tax was suspended. Yet, it was reintroduced in 2011 as a reaction to the Great Recession. Even in Switzerland, a country that collected one of the highest revenue shares from net wealth taxes in the OECD, it generated only 1.2% of GDP at maximum.

Recurrent taxes on net wealth are highly redistributive tax instruments. Yet, their tax base is extremely mobile: shifting financial assets across borders has become easier in times of open capital markets. This creates room for tax arbitrage. As a result, countries may find themselves in tax competition for lower taxes on net wealth. In fact, many states have abolished their net wealth tax completely. For instance, Austria and Denmark repealed it in 1995, Germany in 1997, and Finland in 2006. Thus, net wealth taxes are most effective in reducing wealth inequality if they are embedded into structures of international cooperation. In the light of these problems of the net wealth tax, Piketty (2014) has proposed a global, coordinated wealth tax to reduce capital concentration. In the absence of tax cooperation, taxes on net wealth may be a blunt sword in the fight against inequality.

Taxes on real estate are recurrent taxes based on the value of immovable property. This covers both real estate in the form of land as well as improvements to land (i.e. buildings). Land and buildings can also be taxed separately, for example via specific land taxes. However, the general rational to tax immovable property stays the same

even if land and buildings are taxed under different schemes. Early versions of modern taxes on real estate date back several centuries (Hale, 1985). Yet, the techniques to evaluate the tax base have changed over time. Whereas historically, evaluating real estate was based on proxies such as the number of windows (Oates & Schwab, 2015), these days the value is mostly proxied by expected sales prizes or potential annual rent (Messere et al., 2003, p. 182). Evaluating real estate is still a major challenge today. For example, Ireland temporarily repealed its tax on real estate in 1978 as a reaction to criticism on property evaluation.[3] In 2018, the German tax on real estate was challenged by the Federal Constitutional Court because the last full scale evaluation of property dated back to 1964 (former West Germany) respectively to 1935 (former East Germany). These examples show that real estate taxes need close monitoring of market prizes for immovable property. Since monitoring and re-evaluation are complex endeavours, taxes on real estate demand administrative effort.

Traditionally, the progressivity of the real estate tax has been disputed (Gaffney, 1971). Some authors have argued that the tax was a regressive instrument because its incidence would not fall onto property owners (Netzer, 1973). Nowadays, however, most tax policy experts view taxes on real estates as progressive (Messere et al., 2003; Slack & Bird, 2014; Suits, 1977). Compared to the net wealth tax, the advantage of a tax on real estate is that its tax base is immovable by definition. Thus, the room for international tax arbitrage is narrow and global real estate tax competition is unlikely. Taxes on immovable property are often levied on the subnational level. Even on local levels of policy-making, however, competition between municipalities is not crucially undermining the tax.

Capital Gains Tax

Capital gains taxes are based on the profit made on the sale of an asset. This can cover all kinds of assets, such as real estate, stocks, and bonds. Countries have introduced taxes on capital gains from the beginning of the 20th century onwards; the Netherlands

[3] At that time, the last full evaluation of property dated back more than 100 years (Slack & Bird, 2014).

introduced a tax on capital gains as early as 1914, Canada in 1972, and the United Kingdom in 1965 (Messere et al., 2003, p. 168).

Empirically, we can find a huge variation in practices of taxing capital gains (EY, 2015). Countries do not only vary in the way they treat different assets, but also in their fundamental approaches to taxing capital gains. Broadly speaking, we can differentiate between two approaches. One set of countries levies separate taxes on capital gains (for example Denmark, Ireland, and the United Kingdom). Other countries have integrated the taxation of capital gains into the income tax (Canada, France, and the United States). The close connection between income taxes and capital gains taxes also stems from the fact that taxes on capital gains serve as a backstop for the income tax. By transforming income into capital gains via accounting measures, individuals can avoid income taxation in the absence of capital gains taxes (Messere et al., 2003, p. 172).

Realising capital gains requires assets. Thus, people who have to pay capital gains taxes tend to belong to wealthier subgroups of the population (Burman & Ricoy, 1997). Hence, the progressivity of capital gains taxes is largely undisputed (Haliassos & Lyon, 1993; Poterba, 1987). But is the tax bulletproof to international arbitrage? Literature on this is scarce (Stiglitz, 1983). In general, we can expect that the tax base definition of the capital gains tax has an influence on the room for tax arbitrage. Taxing capital gains from the sale of immovable property offers more degrees of freedom for national policy-making than taxing capital gains from financial products.

In sum, the capital gains tax is an interesting policy alternative to reducing wealth inequality. In particular, policy-makers could use these taxes to tackle wealth concentration that is induced by real estate markets (Piketty, 2014). However, more research on the effect of different capital gains tax designs as well as on practices of international capital gains tax arbitrage is needed.

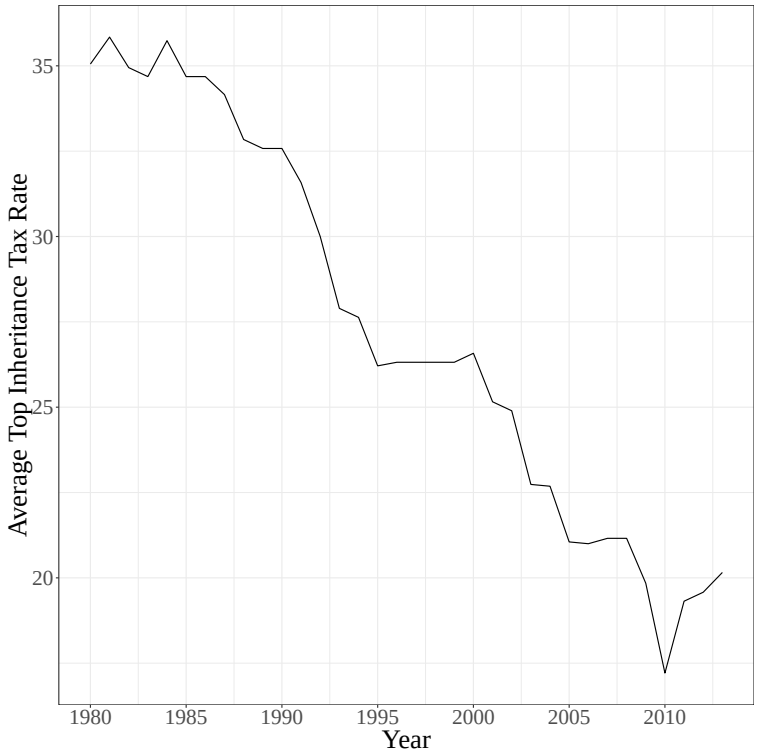
5.4 Can Financial Crises Revive Wealth Taxes?

I have argued that three factors have undermined the *redistributive function* of the income tax: wealth inequality, international economic integration, and the changing role of the income tax from a class tax to a mass tax. The three types of taxes presented in this chapter seem to be powerful additional policy tools to tackle inequality in the 21st century. First, all of them tax wealth instead of income. In a society of rentiers (Piketty, 2014), taxing wealth is a straightforward way to reduce inequality. Second, these taxes seem to be more robust to pressure from international economic integration. Although more research on the nexus between globalisation and wealth taxation is needed, especially taxes on inheritances and real estates are less vulnerable to tax competition than income taxes. Third, none of the three tax types is designed to become the fiscal backbone of modern nation states. Although inheritance taxes have had a more important *fiscal function* over the long run of history (Flora, 1983), revenue from taxes on wealth makes up less than 2% of GDP in the median of OECD countries nowadays. Hence, the approach of such taxes would be to fulfil a *redistributive function* that accompanies the *fiscal function* of taxes on consumption and income.

However, wealth taxes have been on the demise in the last decades (Henrekson & Waldenström, 2016; Kiser & Karceski, 2017; Profeta, Scabrosetti, & Winer, 2014; Scheve & Stasavage, 2012). Even though they might be effective policy instruments to reduce inequality, a revival of taxes on wealth needs domestic support. As this thesis has shown, financial crises have the potential to increase political and popular support for progressive taxes. Financial crises have facilitated the rise of income taxation by causing fiscal needs, inducing demands for fiscal fairness, and creating ratchet effects. The recent financial crises has led to increasing tax rates on top incomes, stemming against the general downward trend in income tax progressivity. Hence, structural changes and turnarounds in tax policy-making are possible. Yet, big changes need momentum.

Has the financial crisis of 2008 caused a turnaround in taxing wealth? On the first view, evidence is mixed. The development of declining top inheritance tax rates

Figure 5.4: Average Top Inheritance Tax Rates, 1980–2013

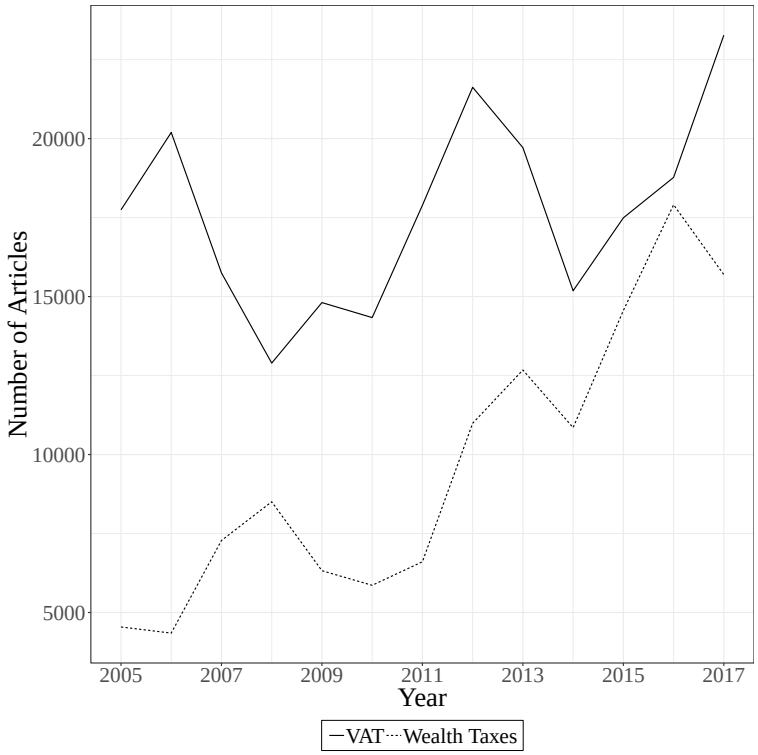


Note: The sample covers 20 OECD countries. Data come from Scheve and Stasavage (2016).

in rich democracies has come to a halt in 2010 (Figure 5.4). On average, top tax rates on inheritances have even increased slightly again from 2010 until 2013. Yet, the overall trend of abolishing the inheritance tax worldwide has prevailed (Figure 5.3). Nevertheless, none of the countries which faced a financial crisis in 2008 has subsequently repealed their inheritance tax (Laeven & Valencia, 2018). At least, the financial crisis has dampened the overall downward trend in taxing inheritances.

In sum, taxes on wealth have not made a spectacular comeback in terms of legislation. However, public salience and political discussions have changed in the politics of wealth taxation. Take, for instance, the case of the inheritance tax. At the end of the last millennium, this tax only existed on the margins of public debates (Birney, Graetz, & Shapiro, 2006, p. 448). Information levels were low and voters were largely ignorant about the taxation of inheritances (Bartels, 2005, 2007; Krupnikov et al., 2006). Yet, in recent years the inheritance tax has reentered political debates and become one of the pet projects of progressive political entrepreneurs on the left. Ahead of the German elec-

Figure 5.5: Articles on Wealth Taxes in the German Media



Note: Data compiled from Factiva. For wealth taxes, articles are included when they entailed one of the following terms: Erbschaftsteuer (inheritance tax), Vermögensteuer (net wealth tax), and Grundsteuer (tax on immovable property). For VAT: Mehrwertsteuer.

tions of 2017, both the Social Democrats as well as the Green Party demanded higher taxes on estates. This development is in line with the overall picture that wealth taxes have made a comeback into the political arena after the crisis. Figure 5.5 shows the total number of German media articles per year from 2005–2017 that referred to taxes on wealth (dotted line) and to the VAT (solid line). In the wake of the crisis, wealth taxes have increased in salience and caught up massively with the VAT. The success that Thomas Piketty's (2014) seminal book has had even outside academic echo chambers fits neatly into general post-crisis discussions about inequality and wealth concentration.

Even though the financial crisis of 2008 has not caused a massive policy change in taxing wealth, it has paved the way for tax policy reforms in the future. The idea of taxing wealth has returned into public discussions and into the policy agenda of the left. Whilst 10 years later, the momentum of the 2008 financial crisis has disappeared,

wealth taxes are back in the political toolbox. Therefore, another financial crisis could open up policy space for legislators who want to revive progressive taxes on wealth. Although the prospect of another financial earthquake might sound devastating, history shows us that such crises are nearly inevitable in capitalist production systems (Calomiris & Haber, 2014; Cassis, 2011; Laeven & Valencia, 2013; Reinhart & Rogoff, 2009b). Why should proponents of progressive taxation – in the reputed words of Winston Churchill – "let a good crisis go to waste"?

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Appendix

Appendix A: Financial Crises and the Modern Tax State

Table A1: Robustness Check I: Cox PH Models for PIT and GST Introduction Without Region FE

	PIT Introduction			GST Introduction		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Financial Crisis in the Previous 10 Years	0.7115**	0.9479***	0.9010***	0.3045	0.1766	0.1377
	(0.3272)	(0.3311)	(0.3390)	(0.2783)	(0.2957)	(0.2929)
Democracy Level		0.0084	0.0083		−0.0038	−0.0029
		(0.0204)	(0.0205)		(0.0141)	(0.0145)
War in the Previous 10 Years		0.4131	0.4182		0.4798	0.4300
		(0.3477)	(0.3476)		(0.3062)	(0.3101)
GDP per Capita (ln)		−0.0388	−0.0391		−0.0746	−0.1786*
		(0.1499)	(0.1506)		(0.0952)	(0.1027)
Spatial Lag (t-1)		0.1249***	0.1090***		0.0965***	0.0771***
		(0.0157)	(0.0304)		(0.0091)	(0.0105)
Communist Successor State			0.5990			2.1094***
			(0.9731)			(0.4911)
AIC	509.0987	441.2401	442.8556	1000.9042	892.7012	875.0714
Region FE	✗	✗	✗	✗	✗	✗
Num. countries	80	80	80	134	134	134
Num. events	75	75	75	124	123	123
Num. obs.	3685	3585	3585	4074	3918	3918
PH test	0.7631	0.1281	0.0621	0.9236	0.0533	0.3410

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table A2: Robustness Check II: Cox PH Models for PIT and GST Introduction With Sample Entry Year Covariate

	PIT Introduction			GST Introduction		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Financial Crisis in the Previous 10 Years	0.9305***	0.9078***	0.8770**	0.3308	0.3402	0.3221
	(0.3372)	(0.3436)	(0.3495)	(0.2926)	(0.3029)	(0.3008)
Democracy Level		0.0298	0.0306		−0.0226	−0.0185
		(0.0249)	(0.0251)		(0.0159)	(0.0162)
War in the Previous 10 Years		0.3147	0.3255		0.6478**	0.6062*
		(0.3664)	(0.3669)		(0.3255)	(0.3267)
GDP per Capita (ln)		−0.2460	−0.2388		−0.2152	−0.1865
		(0.2053)	(0.2054)		(0.1410)	(0.1428)
Spatial Lag (t-1)		0.0275	0.0201		−0.0021	−0.0065
		(0.0407)	(0.0441)		(0.0219)	(0.0221)
Communist Successor State			0.5003			1.3885**
			(1.1083)			(0.5766)
Year Sample Entry	0.0316***	0.0287***	0.0275***	0.0357***	0.0419***	0.0360***
	(0.0040)	(0.0086)	(0.0089)	(0.0040)	(0.0084)	(0.0088)
AIC	421.1153	422.3321	424.1260	881.8039	863.6183	859.4357
Region FE	✓	✓	✓	✓	✓	✓
Num. countries	80	80	80	134	134	134
Num. events	75	75	75	124	123	123
Num. obs.	3685	3585	3585	4074	3918	3918
PH test	0.9337	0.2700	0.2007	0.2206	0.1528	0.4981

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table A3: Robustness Check III: Cubic Polynomal Approximation for PIT and GST Introduction

	PIT Introduction			GST Introduction		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Financial Crisis in the Previous 10 Years	0.8203**	1.2695***	1.1448***	0.0911	0.0613	0.1165
	(0.3299)	(0.3520)	(0.3588)	(0.2897)	(0.3021)	(0.3047)
Democracy Level		0.0269	0.0297		−0.0228	−0.0158
		(0.0249)	(0.0256)		(0.0157)	(0.0165)
War in the Previous 10 Years		0.6523*	0.6954*		0.5429*	0.5578*
		(0.3617)	(0.3620)		(0.3219)	(0.3236)
GDP per Capita (ln)		−0.0559	−0.0413		0.0149	0.0168
		(0.1829)	(0.1817)		(0.1304)	(0.1330)
Spatial Lag (t-1)		0.1954***	0.1518***		0.1019***	0.0651***
		(0.0227)	(0.0364)		(0.0127)	(0.0145)
Communist Successor State			1.6558			2.7640***
			(1.0544)			(0.5791)
t	−0.1094***	−0.0488	−0.0284	−0.0013	−0.0244	0.0438
	(0.0263)	(0.0309)	(0.0344)	(0.0255)	(0.0267)	(0.0320)
t^2	0.0019***	0.0011*	0.0008	0.0000	0.0001	−0.0012
	(0.0006)	(0.0006)	(0.0006)	(0.0007)	(0.0007)	(0.0008)
t^3	−0.0000**	−0.0000*	−0.0000	0.0000	0.0000	0.0000*
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
AIC	691.2922	590.0457	589.5038	1077.3295	993.0168	971.7626
Region FE	✓	✓	✓	✓	✓	✓
Num. countries	80	80	80	134	134	134
Num. events	75	75	75	124	123	123
Num. obs.	3685	3585	3585	4074	3918	3918

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table A4: Robustness Check IV: Cox PH Models for PIT and GST Introduction With Share of Regional Adopters

	PIT Introduction			GST Introduction		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Financial Crisis in the Previous 10 Years	0.7713**	1.0990***	0.9176***	0.1125	0.1288	0.1552
	(0.3374)	(0.3460)	(0.3457)	(0.2891)	(0.2969)	(0.2945)
Democracy Level		0.0434*	0.0376		−0.0253	−0.0218
		(0.0240)	(0.0249)		(0.0156)	(0.0162)
War in the Previous 10 Years		0.2186	0.2868		0.4749	0.4872
		(0.3611)	(0.3622)		(0.3133)	(0.3180)
GDP per Capita (ln)		−0.0130	−0.0466		−0.0252	−0.0229
		(0.1864)	(0.1812)		(0.1327)	(0.1344)
Spatial Lag Share (t-1)		3.6791***	2.3129***		3.0299***	2.0781***
		(0.4578)	(0.6235)		(0.4092)	(0.4504)
Communist Successor State			2.5873***			2.3753***
			(0.8210)			(0.5282)
AIC	506.4178	438.5521	429.9431	963.4125	893.2078	873.6410
Region FE	✓	✓	✓	✓	✓	✓
Num. countries	80	80	80	134	134	134
Num. events	75	75	75	124	123	123
Num. obs.	3685	3585	3585	4074	3918	3918
PH test	0.0099	0.3340	0.7029	0.4556	0.1133	0.6155

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table A5: Robustness Check V: Cox PH Models for PIT and GST Introduction With Reduced Country Sample

	PIT Introduction			GST Introduction		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Financial Crisis in the Previous 10 Years	1.3628**	1.4844**	1.5261*	−0.3493	−0.4244	−1.5098
	(0.6362)	(0.6723)	(0.8183)	(0.5510)	(0.6219)	(0.9408)
Democracy Level		−0.1244	−0.1670		0.0310	0.0287
		(0.0795)	(0.1075)		(0.0594)	(0.0826)
War in the Previous 10 Years		0.5456	−0.3211		1.6625**	3.0794***
		(0.6421)	(0.8697)		(0.7302)	(0.9812)
GDP per Capita (ln)		1.5424**	1.3286		0.9489	0.8531
		(0.7776)	(0.9038)		(0.7550)	(0.9867)
Spatial Lag (t-1)		0.0550	−0.0628		0.0598	0.0289
		(0.1119)	(0.1756)		(0.0802)	(0.0866)
Majoritarian System			−0.9725			−1.9271
			(0.9899)			(1.1979)
Left Head of Government			3.1140**			0.1138
			(1.5601)			(0.7625)
AIC	74.8892	76.0900	62.2212	99.5147	98.2023	77.4946
Region FE	✓	✓	✓	✓	✓	✓
Num. countries	19	19	16	22	22	19
Num. events	19	19	16	21	21	18
Num. obs.	1263	1245	1001	927	912	786
PH test	0.6511	0.9154	0.7483	0.1178	0.3171	0.4645

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Appendix B: What's Fair? Preferences for Tax Progressivity in the Wake of the Financial Crisis

Table B1: Country Sample and Time of Fieldwork

Country	Time Period of Fieldwork
Argentina	07/2010-11/2010
Australia	12/2009-02/2010
Austria	07/2010-09/2010
Belgium	03/2009-07/2009
Chile	05/2009-06/2009
Croatia	06/2009-09/2009
Denmark	09/2009-01/2010
Estonia	06/2010-07/2010
Finland	10/2009-12/2009
France	04/2009-07/2009
Germany	05/2010-11/2010
Hungary	11/2009
Iceland	11/2009-05/2010
Israel	09/2009-02/2010
Japan	11/2009
Latvia	06/2009-07/2009
New Zealand	07/2009-11/2009
Norway	10/2009-05/2010
Philippines	10/2009
Poland	06/2010-07/2010
Russia	12/2009
Slovak Republic	09/2009-10/2009
Slovenia	03/2009-06/2009
South Africa	11/2009-12/2009
South Korea	06/2009-08/2009
Spain	11/2009
Sweden	02/2009-05/2009
Switzerland	02/2009-09/2009
Turkey	10/2009-01/2010
Ukraine	06/2009
United Kingdom	06/2009-11/2009
United States	03/2010-08/2010
Venezuela	06/2010

Table B2: Summary Statistics of Main Micro and Macro Variables

	Country	Tax Prog.		Des. Backgr.		Des. Behav.		Des. Inst.		Growth 2009
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	
1	Ukraine	4.50	0.71	3.34	1.19	4.31	0.75	3.68	1.11	-14.80
2	South Korea	4.42	0.67	3.39	1.01	4.10	0.74	3.24	1.22	0.71
3	Russia	4.38	0.80	3.09	1.19	4.18	0.77	3.47	1.19	-7.82
4	France	4.23	0.73	2.31	0.99	4.03	0.79	3.04	1.28	-2.94
5	Japan	4.22	0.70	2.55	0.92	4.11	0.74	2.26	1.33	-5.53
6	Slovenia	4.19	0.68	2.96	1.09	4.10	0.74	3.20	1.16	-7.80
7	Croatia	4.12	0.67	3.32	1.18	4.27	0.66	3.40	1.19	-7.38
8	Germany	4.11	0.72	2.92	1.05	4.14	0.61	2.55	1.33	-5.62
9	Finland	4.09	0.68	2.17	0.85	4.01	0.69	2.17	1.08	-8.27
10	Turkey	4.07	0.94	3.05	1.20	4.01	0.68	3.43	1.26	-4.83
11	Spain	4.07	0.70	2.87	1.20	3.92	0.73	2.33	1.29	-3.57
12	Latvia	4.00	0.67	3.16	1.15	4.09	0.71	2.94	1.18	-14.35
13	Hungary	4.00	0.76	3.29	1.13	4.35	0.74	3.20	1.17	-6.56
14	United Kingdom	4.00	0.71	2.35	1.00	3.94	0.73	2.29	1.12	-4.19
15	Slovak Republic	4.00	0.79	3.01	1.18	4.25	0.75	3.08	1.17	-5.49
16	Argentina	3.99	0.77	2.37	1.21	4.00	0.64	2.56	1.36	0.05
17	Austria	3.98	0.66	3.00	1.05	4.34	0.67	2.68	1.28	-3.80
18	Estonia	3.97	0.77	2.93	0.99	4.17	0.77	2.64	1.24	-14.72
19	Chile	3.92	0.86	2.92	1.23	4.03	0.66	2.26	1.17	-1.04
20	Australia	3.91	0.70	2.61	1.01	3.99	0.76	2.22	1.11	1.82
21	Sweden	3.87	0.71	2.49	0.94	4.15	0.64	1.84	1.02	-5.18
22	South Africa	3.87	0.80	3.35	1.25	4.06	0.81	2.36	1.44	-1.54
23	Iceland	3.87	0.60	2.39	0.94	4.12	0.68	2.69	1.24	-4.68
24	Poland	3.84	0.79	3.33	1.11	4.18	0.73	3.04	1.19	2.63
25	Belgium	3.84	0.75	2.60	0.86	4.09	0.69	2.67	1.09	-2.28
26	Venezuela	3.82	0.82	2.32	1.17	3.84	0.91	2.58	1.35	-3.20
27	Philippines	3.81	1.07	2.95	1.20	4.19	0.71	1.44	0.76	1.15
28	United States	3.80	0.76	2.85	1.07	4.29	0.61	2.17	1.16	-2.78
29	Norway	3.78	0.64	2.45	0.88	3.97	0.76	1.77	0.91	-1.62
30	Israel	3.78	0.78	3.09	1.04	4.09	0.76	3.09	1.15	1.27
31	Denmark	3.76	0.69	2.35	0.84	3.76	0.82	1.57	1.00	-5.09
32	New Zealand	3.65	0.70	2.25	0.93	4.18	0.67	1.72	0.86	-0.25

Table B3: Summary Statistics of Micro and Macro Variables

Variable	N	Mean	St. Dev.	Min	Max	Comment	Data Source
Micro Variables							
Tax Progressivity	31,331	4.004	0.784	1	5	–	ISSP
Des. Backgr.	31,331	2.823	1.140	1	5	–	ISSP
Des. Behav.	31,331	4.097	0.745	1	5	–	ISSP
Des. Inst.	31,331	2.600	1.326	1	5	–	ISSP
Part-Time Employed	31,331	0.098	0.298	0	1	Ref. Category: Full-Time Employed	ISSP
Unemployed	31,331	0.074	0.261	0	1	Ref. Category: Full-Time Employed	ISSP
In Education	31,331	0.048	0.215	0	1	Ref. Category: Full-Time Employed	ISSP
Retired	31,331	0.200	0.400	0	1	Ref. Category: Full-Time Employed	ISSP
Not in Labour Force	31,331	0.119	0.324	0	1	Ref. Category: Full-Time Employed	ISSP
Educational Level	31,331	3.951	1.452	1	6	–	ISSP
Age	31,331	33.014	16.686	1	84	–	ISSP
Male	31,331	0.459	0.498	0	1	–	ISSP
Religiosity	31,331	3.638	2.298	1	8	–	ISSP
Income Deciles	31,331	5.311	2.829	1	10	–	ISSP
Macro Variables							
Growth 2009	32	−4.303	4.485	−14.800	2.634	–	World Bank (2017)
Growth 2007	32	5.198	2.741	0.426	10.834	–	World Bank (2017)
Z-Score	32	10.256	6.506	−0.945	27.488	Average 2004–2008	Cihak et al. (2012)
GDP 2009 (ln)	32	9.919	0.904	7.516	11.290	Per capita	World Bank (2017)
Net Gini	32	32.486	7.719	24.159	59.175	Year 2009	Solt (2016)
Market Gini	32	46.599	6.216	33.226	67.570	Year 2009	Solt (2016)
Introduction PIT	32	1,922.656	42.765	1,842	1,994	–	Seelkopf and Genschel (2018)
Revenue from Sales Tax	32	6.595	2.217	1.953	11.242	% of GDP, Year 2009	Prichard (2016)
Social Benefit Expenditure	29	40.138	16.760	14	73	% of GDP, Year 2009	IMF (2017)

Table B4: Results Multilevel Models for Tax Progressivity: Robustness Checks

	DV: Preferences for Tax Progressivity				
	Model 1	Model 2	Model 3	Model 4	Model 5
Micro Variables					
Part-Time Employed	−0.009	−0.009	−0.009	−0.009	−0.000
	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)
Unemployed	−0.014	−0.013	−0.014	−0.014	−0.001
	(0.018)	(0.018)	(0.018)	(0.018)	(0.019)
In Education	−0.080***	−0.080***	−0.080***	−0.080***	−0.069***
	(0.021)	(0.021)	(0.021)	(0.021)	(0.021)
Retired	−0.026*	−0.026*	−0.026*	−0.026*	−0.021
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Not in Labour Force	−0.034**	−0.034**	−0.034**	−0.034**	−0.019
	(0.015)	(0.015)	(0.015)	(0.015)	(0.016)
Educational Level	−0.010***	−0.010***	−0.010***	−0.010***	−0.012***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Age	0.004***	0.004***	0.004***	0.004***	0.004***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Male	−0.008	−0.008	−0.008	−0.008	−0.005
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Religiosity	−0.007***	−0.007***	−0.007***	−0.007***	−0.005**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Income	−0.021***	−0.021***	−0.021***	−0.021***	−0.023***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Des. Backgr.	0.020***	0.020***	0.020***	0.020***	0.025***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Des. Behav.	0.031***	0.031***	0.031***	0.031***	0.027***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Des. Inst.	0.037***	0.037***	0.037***	0.037***	0.040***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Macro Variables					
Growth 2009	−0.017**	−0.017***	−0.016**	−0.020***	−0.018***
	(0.007)	(0.006)	(0.007)	(0.007)	(0.006)
Net Gini	−0.002				
	(0.004)				
Market Gini		−0.006			
		(0.004)			
Introduction PIT			0.000		
			(0.001)		
Revenue from Sales Taxes				−0.017	
				(0.013)	
Social Benefits Expenditure					0.003
					(0.002)
(Intercept)	3.673***	3.893***	2.991**	3.717***	3.523***
	(0.144)	(0.215)	(1.421)	(0.095)	(0.090)
AIC	70156.174	70154.704	70156.142	70154.929	62709.331
Log Likelihood	−35055.087	−35054.352	−35055.071	−35054.465	−31331.666
Num. obs.	31331	31331	31331	31331	28679
Num. groups: country	32	32	32	32	29

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table B5: Results Multilevel Models with Interaction Effects

	DV: Preferences for Tax Progressivity		
	Model 1	Model 2	Model 3
Micro Variables			
Part-Time Employed	−0.0102	−0.0101	−0.0100
	(0.0152)	(0.0152)	(0.0152)
Unemployed	−0.0152	−0.0151	−0.0156
	(0.0179)	(0.0179)	(0.0179)
In Education	−0.0769***	−0.0769***	−0.0766***
	(0.0216)	(0.0216)	(0.0216)
Retired	−0.0285*	−0.0284*	−0.0284*
	(0.0151)	(0.0151)	(0.0151)
Not in Labour Force	−0.0393***	−0.0395***	−0.0391***
	(0.0149)	(0.0149)	(0.0149)
Educational Level	−0.0059*	−0.0059*	−0.0060*
	(0.0035)	(0.0035)	(0.0035)
Age	0.0043***	0.0043***	0.0043***
	(0.0004)	(0.0004)	(0.0004)
Male	−0.0110	−0.0109	−0.0110
	(0.0089)	(0.0089)	(0.0089)
Religiosity	−0.0102***	−0.0102***	−0.0102***
	(0.0022)	(0.0022)	(0.0022)
Income	−0.0225***	−0.0225***	−0.0225***
	(0.0034)	(0.0034)	(0.0034)
Des. Backgr.	0.0194***	0.0215***	0.0213***
	(0.0053)	(0.0040)	(0.0040)
Des. Behav.	0.0270***	0.0172**	0.0268***
	(0.0058)	(0.0077)	(0.0058)
Des. Inst.	0.0367***	0.0366***	0.0290***
	(0.0036)	(0.0036)	(0.0049)
Macro Variables			
Growth 2007	−0.0053	−0.0052	−0.0049
	(0.0123)	(0.0123)	(0.0123)
Z-Score	−0.0065	−0.0064	−0.0065
	(0.0046)	(0.0045)	(0.0046)
GDP 2009 (ln)	−0.0249	−0.0244	−0.0216
	(0.0355)	(0.0354)	(0.0355)
Growth 2009	−0.0151**	−0.0061	−0.0110
	(0.0071)	(0.0085)	(0.0070)
Cross-Level Interaction Terms			
Des. Backgr * Growth 2009	−0.0006		
	(0.0009)		
Des. Behav. * Growth 2009		−0.0026*	
		(0.0013)	
Des. Inst. * Growth 2009			−0.0020**
			(0.0009)
(Intercept)	4.0592***	4.0882***	4.0418***
	(0.3956)	(0.3951)	(0.3959)
AIC	70545.5903	70542.2662	70540.5574
Log Likelihood	−35249.7951	−35248.1331	−35247.2787
Num. obs.	31331	31331	31331
Num. groups: country	32	32	32

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table B6: Results Multilevel Models for Tax Progressivity: Generalised Linear Models

	DV: Preferences for Tax Progressivity			
	Model 1	Model 2	Model 3	Model 4
Micro Variables				
Part-Time Employed		−0.0243	−0.0226	−0.0227
		(0.0387)	(0.0387)	(0.0387)
Unemployed		−0.0274	−0.0271	−0.0306
		(0.0460)	(0.0460)	(0.0460)
In Education		−0.1825***	−0.1815***	−0.1822***
		(0.0547)	(0.0547)	(0.0547)
Retired		−0.0572	−0.0552	−0.0584
		(0.0384)	(0.0384)	(0.0384)
Not in Labour Force		−0.0991***	−0.0956**	−0.0986**
		(0.0384)	(0.0384)	(0.0384)
Educational Level		−0.0159*	−0.0157*	−0.0153*
		(0.0087)	(0.0087)	(0.0087)
Age		0.0118***	0.0117***	0.0118***
		(0.0009)	(0.0009)	(0.0009)
Male		−0.0206	−0.0209	−0.0223
		(0.0227)	(0.0227)	(0.0227)
Religiosity		−0.0265***	−0.0269***	−0.0274***
		(0.0056)	(0.0056)	(0.0056)
Income		−0.0605***	−0.0606***	−0.0608***
		(0.0044)	(0.0044)	(0.0044)
Des. Backgr.		0.0640***	0.0636***	0.0634***
		(0.0104)	(0.0104)	(0.0104)
Des. Behav.		0.0782***	0.0773***	0.0771***
		(0.0148)	(0.0148)	(0.0148)
Des. Inst.		0.1105***	0.1104***	0.1099***
		(0.0094)	(0.0094)	(0.0094)
Macro Variables				
Growth 2009	−0.0530***	−0.0462**		−0.0391**
	(0.0194)	(0.0183)		(0.0183)
Growth First Half 2009			−0.0519***	
			(0.0184)	
Growth 2007				−0.0233
				(0.0350)
Z-Score				−0.0096
				(0.0128)
GDP 2009 (ln)				−0.1889*
				(0.1033)
AIC	68901.0312	67971.9362	67970.4015	67973.4204
Log Likelihood	−34444.5156	−33966.9681	−33966.2008	−33964.7102
Num. obs.	31331	31331	31331	31331
Groups (country)	32	32	32	32

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Table B7: Results Multilevel Models for Tax Progressivity: Additional Party Variables

	DV: Preferences for Tax Progressivity		
	Model 1	Model 2	Model 3
Micro Variables			
Part-Time Employed	−0.0175	−0.0175	−0.0176
	(0.0157)	(0.0157)	(0.0157)
Unemployed	−0.0198	−0.0198	−0.0202
	(0.0185)	(0.0185)	(0.0185)
In Education	−0.0783***	−0.0783***	−0.0781***
	(0.0220)	(0.0220)	(0.0220)
Retired	−0.0185	−0.0186	−0.0186
	(0.0155)	(0.0155)	(0.0155)
Not in Labour Force	−0.0318**	−0.0318**	−0.0319**
	(0.0155)	(0.0155)	(0.0155)
Educational Level	−0.0092***	−0.0093***	−0.0092***
	(0.0035)	(0.0035)	(0.0035)
Age	0.0042***	0.0042***	0.0042***
	(0.0004)	(0.0004)	(0.0004)
Male	−0.0093	−0.0092	−0.0092
	(0.0091)	(0.0091)	(0.0091)
Religiosity	−0.0066***	−0.0065***	−0.0066***
	(0.0023)	(0.0023)	(0.0023)
Income	−0.0216***	−0.0216***	−0.0216***
	(0.0035)	(0.0035)	(0.0035)
Des. Backgr.	0.0200***	0.0200***	0.0199***
	(0.0041)	(0.0041)	(0.0041)
Des. Behav.	0.0261***	0.0261***	0.0261***
	(0.0059)	(0.0059)	(0.0059)
Des. Inst.	0.0396***	0.0396***	0.0396***
	(0.0037)	(0.0037)	(0.0037)
Left Affiliation	0.2335***	0.2335***	0.2335***
	(0.0118)	(0.0118)	(0.0118)
Center Affiliation	0.0791***	0.0791***	0.0788***
	(0.0133)	(0.0133)	(0.0133)
No Affiliation	0.0761***	0.0761***	0.0753***
	(0.0155)	(0.0155)	(0.0155)
Macro Variables			
Growth 2009	−0.0169**		−0.0155**
	(0.0068)		(0.0070)
Growth First Half 2009		−0.0195***	
		(0.0069)	
Growth 2007			−0.0117
			(0.0155)
Z-Score			−0.0060
			(0.0054)
GDP 2009 (ln)			−0.0512
			(0.0400)
(Intercept)	3.6288***	3.6123***	4.2680***
	(0.0567)	(0.0574)	(0.4683)
AIC	64124.2587	64122.7419	64127.8460
Log Likelihood	−32040.1294	−32039.3710	−32038.9230
Num. obs.	28837	28837	28837
Num. groups: country	29	29	29

$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

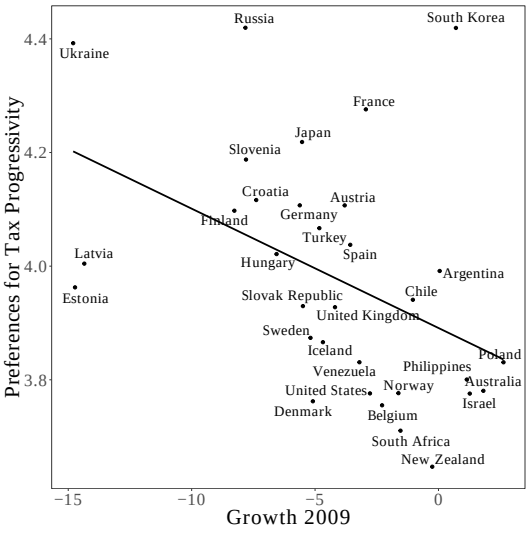
Table B8: Results Multilevel Models for Tax Progressivity: Robustness Micro Variables

	DV: Preferences for Tax Progressivity	
	Model 1	Model 2
Micro Variables		
Part-Time Employed	−0.0094	−0.0206
	(0.0152)	(0.0247)
Unemployed	−0.0116	−0.0227
	(0.0179)	(0.0280)
In Education	−0.0706***	−0.0573*
	(0.0216)	(0.0295)
Retired	−0.0173	0.0224
	(0.0151)	(0.0329)
Not in Labour Force	−0.0393***	−0.0141
	(0.0149)	(0.0279)
Educational Level	−0.0056	−0.0006
	(0.0034)	(0.0098)
Age	0.0043***	0.0042***
	(0.0004)	(0.0006)
Male	−0.0116	−0.0228
	(0.0089)	(0.0151)
Religiosity	−0.0103***	−0.0135*
	(0.0022)	(0.0067)
Income	−0.0215***	−0.0190***
	(0.0017)	(0.0031)
Des. Backgr.	0.0208***	0.0282**
	(0.0040)	(0.0130)
Des. Behav.	0.0270***	0.0315**
	(0.0058)	(0.0134)
Des. Inst.	0.0381***	0.0783***
	(0.0036)	(0.0113)
(Intercept)	3.7908***	3.6175***
	(0.0438)	(0.1123)
Adj. R^2	0.0961	0.0430
Num. obs.	31331	31331
Num. groups: country	32	32
Model	Country FE	Country Clustered SE

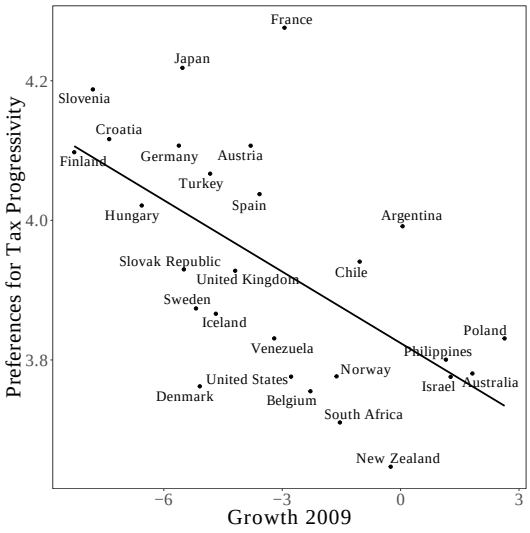
$^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$

Figure B1: GDP Growth 2009 and Aggregate Demand for Tax Progressivity

(a) Full Sample



(b) Excluding Outliers



Appendix C: 'Tax the Rich'? The Financial Crisis, Fiscal Fairness, and Progressive Income Taxation Worldwide

Table C1: Countries in Sample with a Financial Crisis

Country	Start Financial Crisis
Austria	2008
Belgium	2008
Denmark	2008
France	2008
Germany	2008
Greece	2008
Hungary	2008
Iceland	2008
Ireland	2008
Italy	2008
Kazakhstan	2008
Latvia	2008
Luxembourg	2008
Netherlands	2008
Nigeria	2009
Portugal	2008
Russia	2008
Slovenia	2008
Spain	2008
Sweden	2008
Switzerland	2008
Ukraine	2008
United Kingdom	2007
United States	2007

Table C2: The Impact of the Financial Crisis on Change in Top PIT and VAT Rates (Results after Weighting), 2007–2014

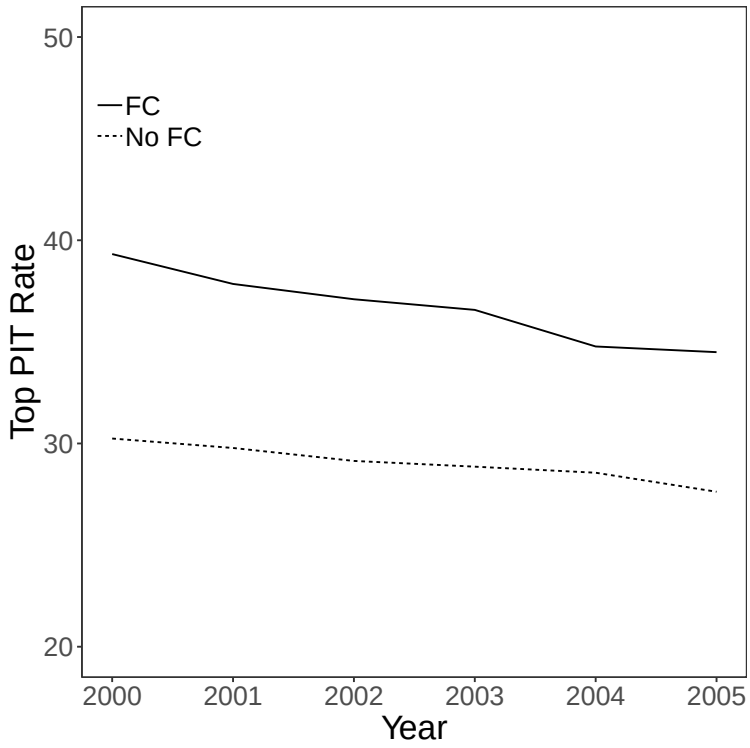
	2007–2010	2007–2014	2007–2010	2007–2014
Financial Crisis	2.9366*	3.8694*	0.1430	0.1287
	(1.2542)	(1.9136)	(0.3611)	(0.5192)
(Intercept)	−1.7149	−0.8381	0.3987*	1.1755***
	(0.9818)	(1.1773)	(0.1982)	(0.3350)
AIC	698.0977	796.8369	320.3897	391.2117
Observations	122	122	103	103

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table C3: Balance Statistics Before and After Matching

Variable	Type	Mean Control	Mean Treated	Stand. Mean Diff.	Balance
Before Matching					
Globalisation 2007	Contin.	60.0828	81.4742	1.9362	Unbalanced, >0.25
Democracy 2007	Binary	0.6020	0.8750	0.8080	Unbalanced, >0.25
GDP 2007 (log)	Contin.	8.3815	10.2148	1.7213	Unbalanced, >0.25
After Matching					
Globalisation 2007	Contin.	80.0146	81.4742	0.1321	Balanced, <0.25
Democracy 2007	Binary	0.8542	0.8750	0.0617	Balanced, <0.25
GDP 2007 (log)	Contin.	10.1785	10.2148	0.0364	Balanced, <0.25

Figure C1: Top PIT Rate 2000–2005 for Countries With and Without a Financial Crisis



Note: Data from Peter, Buttrick, and Duncan (2010).

Table C4: Panel Models, 2006–2014 (Robustness Checks)

Dependent Variable:	Δ Top PIT			Top PIT	
	(1)	(2)	(3)	(4)	(5)
Top PIT$_{t-1}$	-0.0171*	-0.0370*	-0.0309*	0.9829***	0.5865***
	(0.0074)	(0.0183)	(0.0152)	(0.0072)	(0.0944)
Δ Debt$_{t-1}$	0.0038	0.0041	0.0052	0.0038	0.0093
	(0.0072)	(0.0071)	(0.0275)	(0.0063)	(0.0059)
Financial Crisis$_{t-1}$	0.1905	0.4442	-0.0047	0.1905	0.1463
	(0.3747)	(0.3482)	(0.4268)	(0.3550)	(0.3128)
Δ Debt$_{t-1}$ * Financial Crisis$_{t-1}$	0.0983***	0.0752*	0.1011**	0.0983***	0.0840*
	(0.0241)	(0.0334)	(0.0323)	(0.0221)	(0.0345)
Δ Unemployment	0.0644	0.0673	-0.0231	0.0644	0.0127
	(0.0572)	(0.0414)	(0.1330)	(0.0528)	(0.0424)
GDP per Capita (log)	0.0816	0.0386	0.8885	0.0816	-1.8167***
	(0.1308)	(0.1570)	(0.4576)	(0.1240)	(0.5435)
GDP Growth	-0.0482*	-0.0471	-0.1282	-0.0482*	-0.0350
	(0.0240)	(0.0312)	(0.0728)	(0.0225)	(0.0289)
Globalisation	-0.0107	-0.0045	-0.0403	-0.0107	-0.0968
	(0.0123)	(0.0182)	(0.0251)	(0.0117)	(0.0496)
Democracy	0.0899	0.2501		0.0899	2.3877**
	(0.2340)	(0.3006)		(0.2280)	(0.7666)
Population (log)	0.0571	0.0990	0.1790**	0.0571	-2.3497
	(0.0468)	(0.0520)	(0.0573)	(0.0450)	(2.1254)
R^2	0.041	0.040	0.144	0.966	0.977
Observations	976	976	288	976	976
Countries	122	122	36	122	122
Year FE	✓	✓	✓	✓	✓
Country FE	✗	✗	✗	✗	✓
Robust SE	✓	✗	✓	✓	✗
PCSE	✗	✓	✗	✗	✓
AR(1)	✗	✓	✗	✗	✗
Jackknife	✓	✗	✗	✗	✗

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$