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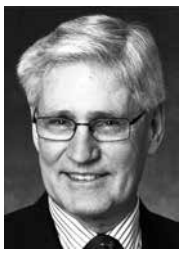
Wealth Taxation

Robin Boadway and Pierre Pestieau

The Dubious Case for Annual Wealth Taxation[1]



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INTRODUCTION

The purpose of this paper is to critically evaluate the case for an annual wealth tax as part of a nation's tax system. To do so, we review currently received wisdom on the elements of a good tax system drawing on the normative tax design literature and best practices. The preferred tax system varies across nations because of historical and institutional factors, social norms and exposure of the national economy to international influences. Nonetheless, a number of design features are common across countries, especially with regard to the choice of a tax base.

The current interest in wealth taxation is a response to the increase in wealth concentration and income inequality that have occurred in most OECD countries. The share of the wealthiest 1% in total pre-tax income has grown in recent decades, particularly in some English-speaking countries, but also in some Nordic and Southern European countries. To address that, Piketty (2013) proposed a world wealth tax, which is more utopian than feasible. We consider a national wealth tax as a more viable option.

WEALTH TAXATION IN PRACTICE

Wealth taxation and wealth transfer taxation can take different broad forms. A wealth tax typically applies to net wealth, that is, assets less liabilities. It can be levied periodically (e.g., annually) or as a one-off capital levy. Related to a wealth tax is the property tax, which is levied annually on real property and is typically used to finance local government. A wealth transfer tax can take two main forms: it can be an estate tax levied on the total value of the estate of a donor; or it can be an inheritance tax levied separately on the amount of inheritance received by each recipient. Wealth transfer taxes are levied on lifetime accumulations of wealth, and apply on death or within a prescribed number of years prior to death. There may also be gift taxes levied either on donors or recipients when gifts are made during the lifetime of donors or recipients.

While wealth transfer taxes are relatively common, several countries have abolished or decreased net wealth taxes. Net wealth is now taxed in only a few OECD countries, and taxes on immovable property represent a small percentage of overall taxation. A couple of decades ago, one-half of OECD member countries had some type of annual wealth tax. These countries have progressively discontinued it. In those few countries that still have a wealth tax, its proceeds have decreased over time. Wealth tax revenues as a share of total tax revenues in 2015 were 3.6% in Switzerland, 0.3% in Spain, 1% in Norway, 1.5% in France, and 2% in Luxembourg.

Occasionally, a once-off tax on private wealth has been used as an exceptional measure to restore debt sustainability. To be effective, such a tax has to be implemented before avoidance is possible and with the expectation that it will not be repeated. Only in these circumstances does it not distort behaviour. A one-off wealth tax is seen by some as fair, despite the fact that it amounts to an unannounced confiscation of wealth. That is because it is only applied in unusual circumstances of financial stringency, or when wealth holders might be thought to have gained disproportionately while others suffered.

WEALTH TAXATION AS PART OF THE BROADER TAX SYSTEM

An annual wealth tax is one of a family of taxes that apply to asset wealth or its return. Other such taxes include capital income taxes, business income taxes, wealth transfer taxes and annual taxes on real property. These taxes generally exist alongside broad-based taxes on consumption and taxes on labour income. Different countries adopt very different mixes of tax bases, but virtually all are hybrid systems that combine elements of two benchmark tax bases. One is comprehensive income taxation under which the tax base is the sum of consumption and net changes in wealth or net savings. The second benchmark base is consumption itself, which can be taxed either by personal taxation or indirectly by taxes on consumption transactions. Neither comprehensive income nor personal consumption are readily observed by the tax authority, but both can be indirectly measured using tax bases that are equivalent to them in present value terms. Using the consumer's lifetime budget constraint,

[1] Pierre Pestieau acknowledges the financial support of the Belgian Federal Science Policy Office (BELSPO) via the BRAIN.be project BR/121/A5/CRESUS. This paper is an abridged version of Boadway and Pestieau (2017).

the comprehensive income tax base is equivalent in present value terms to the sum of labour income, capital income and inheritances. By the same token, the consumption base is equivalent in present value terms to labour income, inheritances and that part of capital income reflecting windfall, or unexpected, gains.[2] In what follows, it will be useful to fit annual wealth taxes into this framework of broad tax bases.

As mentioned, most tax systems are some hybrid of income and consumption taxes. To appreciate the potential for wealth taxes to be a component of these hybrid tax systems, it is useful to recount how various elements of standard tax bases contribute to the comprehensive income versus consumption balance. Consumption can be taxed explicitly and indirectly by a broad, destination-based value-added tax (VAT), although progressive rate structures are precluded. Alternatively, consumption can be also taxed under the personal tax system using one of two approaches. Consumption expenditures can be directly and progressively taxed by a personal base defined as labour and capital income (including inheritances) less savings. This is equivalent to what the Meade Report (1978) called the registered asset approach, and corresponds roughly to the way in which private pensions are typically treated. The alternative form of personal consumption tax, also identified by the Meade Report, is the tax-prepaid approach whereby the base is labour income and inheritances, that is, total income less capital income. The tax-prepaid approach captures consumption imperfectly to the extent that capital income includes windfall gains, such as unexpected returns or rents from monopoly circumstances.

Arguably, the returns on investment are increasing in the size of an individual's portfolio, so are higher for high-income persons.[3] For that reason, the Mirrlees Review (2011) proposed a variant of the tax-prepaid approach whereby for savings in assets other than interest-bearing accounts and pensions, only returns up to a risk-free rate-of-return allowance (RRA) would be tax-exempt, while above-normal returns would be fully taxed. This would ensure that consumption financed by rents is taxed. To the extent that above-normal returns accrue to higher-income taxpayers, taxation equity might be improved by taxing them differentially.

Actual tax systems do not include all consumption in the tax base, regardless of whether they aim to tax income or consumption. VAT systems typically exempt or zero-rate some types of consumption, such as food and other necessities. Tax bases that rely on the tax-prepaid approach do not include consumption financed from rents or windfall gains. And, personal tax bases do not include consumption financed from inheritances to the extent that the latter are not themselves taxed, although they do implicit tax bequests made, which might not be regarded as consumption. When inheritances are taxed, they are usually only partially taxed and are taxed more favourably that ordinary income. High exemption levels apply, and some forms of wealth transfers are exempt such as farms and family businesses. On the other hand, housing is often included in inheritance tax bases. Countries that do not have inheritance taxes nonetheless apply a capital gains tax to accrued capital gains on inheritances. In the few countries that have annual wealth taxes, these are typically in lieu of an inheritance tax, despite the fact that they fulfil very different functions.

There are many reasons for taxing capital income favourably compared with consumption or labour income, and why some forms of capital income are exempt. On theoretical grounds, some taxation of capital income can be justified as an efficient way of redistributing from better-off to worse-off individuals (Banks and Diamond 2010). In addition, taxing capital income has been justified as a way of addressing the inefficiencies associated with the absence of wage insurance and with credit constraints (Conesa et al. 2009). Typically, these arguments would support capital income taxation at lower rates than labour income taxation, and at rates that are higher for high-income persons. At the same time, capital income tax rates are constrained by the possibility of avoidance through tax planning or capital flight. Some types of asset income would be difficult to tax from an administrative point of view, such as human capital and housing for which imputed income is hard to measure. Some assets are also tax-sheltered on policy grounds, like saving for retirement for which encouragement might be warranted on behavioural grounds. Preferential treatment of investments by entrepreneurs and small businesses is a response to the high risk of failure and limited access to capital markets many face.

There are also strong arguments supporting the case for deploying an inheritance tax as a complement to consumption, labour income and capital income taxation, regardless of the extent to which capital income is taxed. From the point of view of recipients, inheritances represent a form of windfall gain that can be used to finance consumption over one's lifetime. Regardless of whether the personal tax system is based on consumption tax or comprehensive income tax principles, taxing consumption is an element. Insofar as consumption is taxed explicitly, taxing inheritances that finance that consumption would be redundant. For example, a VAT will tax consumption expenditures regardless of how they are financed. On the other hand, taxing consumption at the personal level by using either the tax-prepaid approach or the registered asset

[2] To see this, consider the two-period case where an individual earns E_1 and E_2 in the two periods and receives an inheritance I in the first period. The budget constraints in each period are $C_1 = E_1 + I - S$ and $C_2 = E_2 + (1+r)S + k\bar{S}$, where C_i is period-i consumption (including bequests given), S is saving, r is the interest rate, and $k\bar{S}$ is above-normal returns accruing on a portion of savings $\bar{S} < S$. Eliminating S from the two budget constraints yields the intertemporal budget constraint:

$$C_1 + \frac{C_2}{1+r} = E_1 + I + \frac{E_2}{1+r} + \frac{k\bar{S}}{1+r}.$$

[3] For empirical evidence of this, see Fagereng et al. (2016) and Kacperczyk et al. (2016).

approach will require that inheritances be taxed. Let us recall that the tax-prepaid approach exempts capital income from the base, and will be equivalent to consumption taxation only if all forms of non-capital income are in the base, including labour income, transfers and inheritances. Similarly, under registered asset treatment, the tax base is income less savings, where income includes labour and capital income, transfers and inheritances. If the tax base is income rather than consumption, the same principles require including inheritances in the base, since they are equivalent to income. Naturally, in choosing tax rates one must take into account behavioural responses, such as changes in labour supply, savings, and in the case of inheritance taxation changes in bequests, but the choice of the tax base is separate from these considerations.

A wealth tax would add one more layer of taxation of assets to the existing patchwork of capital income and inheritance taxes. In principle, the annual taxation of wealth is analogous to the taxation of income from that wealth, depending on how it is designed. To the extent that income from wealth is proportional to the stock of wealth, taxing wealth directly is equivalent to taxing the capital income from that wealth, as discussed in more detail below. However, there are some differences. If wealth taxation is based on the market value of wealth, which is the expected present value of future returns possibly adjusted for risk, a capital income base will be more variable than a wealth base. Moreover, capital income taxation will tax unexpected, or windfall, gains whereas a wealth tax will not. Where returns to wealth take an imputed form, taxing wealth itself may be much simpler than taxing the returns. This may be the case for housing and for valuables that yield an intrinsic return. On the other hand, some forms of wealth are inherently more difficult to measure than the income streams to which they give rise, such as human wealth that either has been endowed in the individual or has been accumulated.

Two final points can be made about wealth taxation versus other forms of asset taxation before analysing the case for and against it. Firstly, some might argue that wealth per se should be taxed because of the benefit it generates for its owners. This may be an intrinsic benefit, such as the prestige and status associated with being seen to be wealthy. Alternatively, wealth may confer power and influence on wealth-owners, particularly those with substantially higher-than-average accumulations. Basing a tax on wealth on the possibility of its power and prestige would represent a motive for taxation that goes beyond standard utilitarian arguments. If the wealth had been accumulated from above-normal returns due to windfall gains or monopoly rents, taxing them ex post might be justified to the extent that the tax system did not tax them as they were earned regardless of the power and prestige to which they give rise. Insofar as these considerations are true, they would reinforce the case for highly progressive wealth taxation.

Secondly, while wealth taxation is analogous to the taxation of the returns on wealth, it is different from bequest or inheritance taxation. Bequests represent a cumulative accrual of wealth over a lifetime, while inheritances represent windfall increases in wealth early in one's lifetime. By contrast, wealth taxation is a recurring annual tax on wealth over the life cycle. Thus, a wealth tax applies to saving done partly for life-cycle smoothing purposes, while a bequest tax applies to wealth accumulated over and above that used for life-cycle smoothing and an inheritance tax applies to windfall increases in wealth. Even if one did not want to tax capital income or capital itself, for example, if the tax system aimed to tax consumption, one might still want to tax inheritances. This would be the case insofar as consumption is taxed on the income or source side of the budget rather than directly, since the budgetary source of consumption finance comes from both labour income and inheritances.

ECONOMIC ARGUMENTS FOR WEALTH TAXATION

In this section, we explore the case for including wealth tax as part of the tax system in greater detail. The arguments for taxing wealth are heavily influenced by the similarities between taxing wealth and capital income. Under certain conditions, these two forms of taxation are effectively identical. To illustrate this, let us suppose that an individual has wealth consisting of a fully owned house and a portfolio of stocks. Let us also suppose that the tax on capital income includes the imputed income of the home and the dividends plus the accrued capital gains of the stocks. We will assume that these capital incomes are such that their present value is equal to the value of the wealth to be taxed; and also that both taxes are flat rate. Under these assumptions, there would be equivalence between the two types of levy.

In practice, this is far from the case for many reasons. The two taxes do not have the same base. Some assets are exempt from the wealth tax and others from the capital income tax. Taxes on capital income apply at most at preferential rates to realised capital gains and not to accrued capital gains, although these are covered by the wealth tax assuming the value of assets is properly assessed. In that respect, there can be a huge discrepancy between the market value of a dwelling and its cadastral value. The tax rates are also different in level and progressivity, and in the exemption level. Another important difference is the tax base. The annual wealth tax base comprises housing net of debts, deposits, and some financial assets, but not business assets.

Besides the differences between wealth and capital income taxes mentioned, two other differences are often cited in the discussion on the relative merits of the two taxes. The first one concerns the liquidity aspect. Persons can be very wealthy in terms of their assets, but have a small income that makes them una-

ble to pay the annual tax. In Germany, a court held that the sum of wealth tax and income tax should not exceed one-half of a taxpayer's income. Eventually the wealth tax was declared to be unconstitutional because of its confiscatory nature. As for the second difference, there is the argument that the wealth tax would induce taxpayers to get the highest return possible to pay the tax, whereas the capital income tax would have the opposite effect.

A wealth tax might be viewed as a supplement to capital income taxation where the latter is imperfect. For some types of assets, the rate of return might be difficult to measure. Examples include owner-occupied housing, automobiles and other consumer durables, personal valuables, and cash. A wealth tax that targeted these assets could be beneficial, although valuation and compliance problems would be challenging. For some other assets, both the rate of return and the asset value might be difficult to measure. An important example of this is human capital. Its return can be implicitly taxed if the income tax system is progressive, but otherwise human capital tends to be a tax-sheltered asset. Personal businesses also yield capital income that can be challenging to measure, but measuring their asset value is no less difficult, especially for intangible assets, which are increasingly important. More generally, capital income earned on behalf of shareholders by corporations can be taxed using a corporate income tax and integrated with the personal tax of shareholders. Arguably, it would be easier to tax corporate-source income using a wealth tax. The latter would apply to the value of corporate stocks held by taxpayers directly with no need to use a corporate tax at all.

Overall, the case for implementing a wealth tax as a complementary way of taxing capital income is limited. The argument is strongest for assets like housing and other durables whose returns are difficult to measure, and for corporate stocks whose returns can be sheltered within the corporation unless they are pre-emptively taxed using a corporate tax. In the case of housing and some business assets, the property tax already applies to them.

At the same time, there are significant drawbacks to wealth taxation as a substitute for capital income taxation. An important difference is that a tax on capital income includes windfall gains in the tax base while a wealth tax does not. The value of wealth reflects expected returns, and these do not change if there is a windfall gain. Given that the taxation of windfall gains is highly desirable, this is a significant drawback to a wealth tax. By the same token, a tax on capital income will apply to returns to risk, while a wealth tax will not. As long as there is loss-offsetting in the income tax system, this should not be a significant drawback to capital income taxation. Indeed, in some circumstances taxing returns to risk can be a valuable form of insurance that increases risk-taking (Domar and Musgrave 1944, Stiglitz 1969, Buchholz and Konrad 2014).

Capital income taxes also have some advantages of flexibility from a tax design point of view. Capital income taxes can have exemption levels as in France and the UK. In addition, some forms of capital income are tax-sheltered, such as saving for retirement, and these tax-sheltered savings can have an upper limit that restricts their availability to high-income persons. Moreover, capital income tax can be designed so that it only applies to above-normal earnings, as in the case of RRA taxation proposed by the Mirrlees Review mentioned above. Capital income tax may not apply to certain asset returns, like housing, but it can be augmented by property taxation or taxation of housing capital gains. Finally, under a dual income tax, a proportional tax rate can be applied to capital income. This makes evasion more difficult than with ordinary income taxation, since financial intermediaries can be used to withhold tax. These aspects may be difficult to replicate using wealth taxation.

The upshot of this discussion is that a wealth tax is largely an imperfect substitute for a tax on capital income. It has the advantage that it can tax assets whose return is difficult to measure for income tax purposes, especially consumer durables. At the same time, it is inferior to capital income taxation when rates of return are easier to measure than asset values, such as intangible assets, intellectual and knowledge property and personal businesses. But it has the significant disadvantage that it does not tax windfall gains. Moreover, it is no better than capital income taxation for taxing human capital returns and for taxing inheritances at rates reflecting their advantage to inheritors.

There are also various administrative problems with wealth taxation that make compliance and collection costly. For one thing, there is risk of capital flight and pervasive inequity arising from wide variety of loopholes (like change of residency). Measurement difficulties also lead to exemptions like artwork and durables, and family enterprises are often exempt on social grounds. These problems also affect inheritance and capital income taxation. The need to value assets frequently implies that the wealth tax has a low yield relative to administrative costs compared with inheritance tax. Finally, wealth and wealth transfer taxes are surprisingly unpopular, even although a majority of citizens would be net gainers from such a tax.

CONCLUSIONS

Wealth and capital income taxes are analogous and fulfil similar functions. The ultimate rationale for taxing wealth is the same as for taxing capital income, and we have recounted the arguments underlying this rationale. In view of these facts, the case for an annual wealth tax rests primarily on shortcomings of capital income taxation. There may be some assets for which the returns are difficult to measure, such as housing and other consumer durables. An annual tax on the value of such assets could be a useful complement to capital

income taxation. That must be weighed against the administrative and compliance costs of such taxes, which could be substantial. In practice, annual taxes on housing values are frequently used as instruments for financing local government. Given that, the case for taxing the imputed income of housing is reduced.

Our judgment is that a well-functioning capital income tax dominates an annual wealth tax. The benefit of implementing the latter alongside a capital income tax does not compensate for the significant administrative costs that would be involved. However, this judgment comes with some caveats. The case for relying solely on capital income taxation (along with labour and consumption taxation) is strongest when the capital income tax includes all forms of capital income including capital gains. That is not to say that the rate of taxes applied to capital income should be the same as that applying to labour income. A dual income tax system with a uniform rate applied to capital income has significant administrative advantages. At the same time, taxing housing wealth using a property tax rather than taxing imputed rent makes good sense, especially since property taxation is a well-established tax for financing local government.

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Daniel Waldenström

Inheritance and Wealth Taxation in Sweden

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INTRODUCTION

This article discusses the experiences of inheritance and wealth taxation in Sweden. Inheritance and wealth taxes merit attention for a number of reasons. The macroeconomic importance of wealth, not least inherited wealth, has increased in the Western world in recent years, as shown by growing national wealth to income ratios and increasing inheritance flows.[1] Inequality in incomes has trended upwards, and this increase has been linked to a capital income growth at the top of the income distribution. In addition, the theoretical literature on optimal capital taxation has undergone profound changes and a new strand of papers now show that capital taxes can serve important functions in modern tax systems.[2]

Sweden is one of the world's most egalitarian welfare states with low levels of inequality and a high tax-to-GDP ratio. However, when it comes to the taxation of wealth and capital income, Sweden does not stand out internationally. For example, its capital tax revenues are at about 5% of GDP, which is in line with the average figure among rich countries. Capital incomes are taxed at a flat rate, without any concessions for holding time, but also with no increasing rates for higher income levels. In the mid-2000s, Sweden stopped taxing inheritances and gifts (in 2004) and household net wealth (in 2006). In other words, despite being a hallmark egalitarian welfare state, Sweden's taxes on wealth, capital income and inheritances are internationally low.

This article aims to offer a perspective on the Swedish taxation of inheritance and wealth. It begins with a description of the introduction and abolishment of these taxes, spanning over a century of historical and economic development. It subsequently examines the distributional consequences of inherited wealth, looking at both income and wealth inequality, and then discusses what we know about the relationship between wealth taxation, wealth accumulation and offshore tax evasion. Finally, a concluding discussion summarises the issues covered and highlights questions for further inquiry.

[1] Trends in wealth-income ratios are documented by Piketty and Zucman (2014) and for Sweden by Waldenström (2016, 2017), and the evolution of inherited wealth is studied for France by Piketty (2011) and for Sweden by Ohlsson, Roine and Waldenström (2014).

[2] See Bastani and Waldenström (2018) for an overview of the theoretical literature on optimal capital taxation.

THE RISE AND FALL OF SWEDEN'S INHERITANCE AND WEALTH TAXES[3]

Inheritance taxation has long-standing traditions in all Western economies. In the pre-industrial era, these taxes existed because probate inventories of deceased individuals offered a reliable and easily observable tax base.[4] Later inheritance taxes were primarily motivated by redistribution, linked to the growth of government and emergence of the welfare state.

Sweden got its first "modern" inheritance and gift tax in 1885. Inheritances were taxed at a flat rate of 0.5% at this time, but the tax rate increased over the twentieth century to 5-10% in the interwar era, 5-20% in the 1930s and 1940s and 5-60% in the first postwar decades. Figure 1 shows average effective inheritance tax rates for different size classes of estates held in the form of a closely held corporation.

From the 1970s onwards, exemptions were introduced in the taxation of business equity in non-listed firms. Effective tax rates dropped as a result, especially on large inheritances, and a gap in tax rates vis-à-vis other assets (property, listed shares) emerged. This gap is shown in Figure 1 when comparing the effective tax rates with the statutory top tax rate.

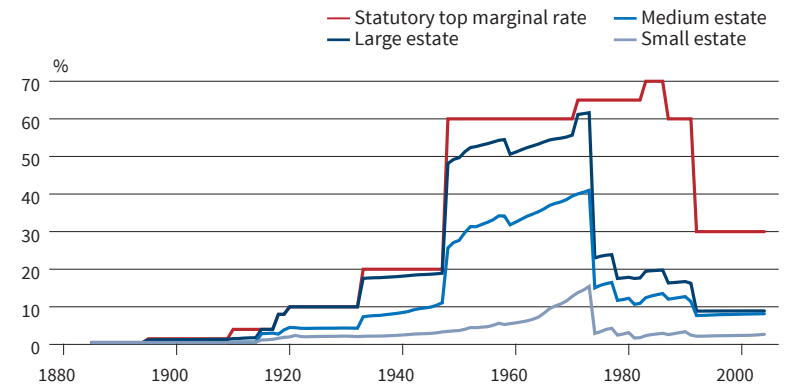
In 2004, Sweden abolished the inheritance and gift tax. There are several potential forces that could explain this decision, according to an analysis by Henrekson

[3] The historical descriptions of this section draw heavily on Du Rietz, Henrekson and Waldenström (2015), Henrekson and Waldenström (2017), and Du Rietz and Henrekson (2015).

[4] Probate inventories were made early on because of the need to clear all debts of the deceased before any bequests could be transferred to heirs. For this reason, most European countries have probate archives going back a long time, sometimes to the seventeenth century or even earlier.

Figure 1

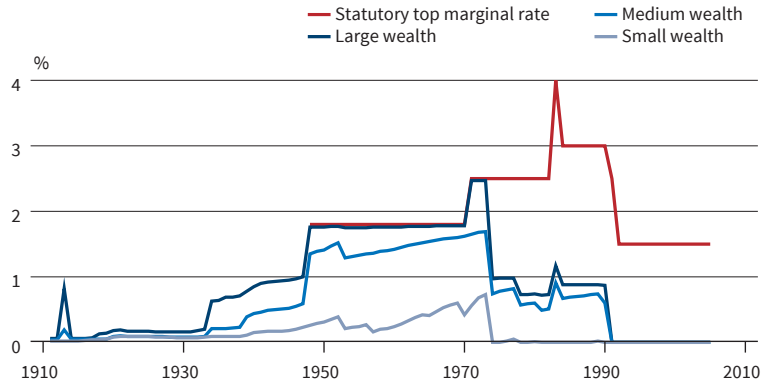
Effective Inheritance Tax Rates in Sweden, 1885–2004



Note: The graph shows the statutory top marginal inhertiance tax rate and three average effective inheritance tax rates that a child with one sibling pays when inheriting half of a non–listed corperation worth 1,000 average annual worker salaries ('Large estate'), 100 worker salaries ('Medium estate') or 10 worker salaries ('Small estate'). The effective tax rates account for all relevant deductions and valuation rules.
Source: Du Rietz et al. (2015).

Figure 2

Effective Wealth Tax Rates in Sweden, 1911–2004



Note: Average effective wealth tax rates are for owners of a non–listed corporation worth 1,000 average annual worker salaries('Large wealth'), 100 worker salaries ('Medium wealth') or 10 worker salaries ('Small wealth'). The effective tax rates account for all relevant deductions and valuation rules.
Source: Author's computations based on data from Du Rietz and Henrekson (2015)

and Waldenström (2017). For example, the combination of a low basic deduction for bequests to become taxable and rising house prices during the 1990s meant that a large fraction of heirs, about one-third in 2000, was eligible to pay the tax. At the same time, new tax exemptions for business equity meant that most large bequests became effectively tax exempt, which thus meant that a growing number of taxpayers at the low end of the distribution had to pay the tax, while fewer and fewer at the top had to do so. In addition, there was general consensus that inheritance tax avoidance was widespread, which further undermined the conceived effectiveness of the tax.

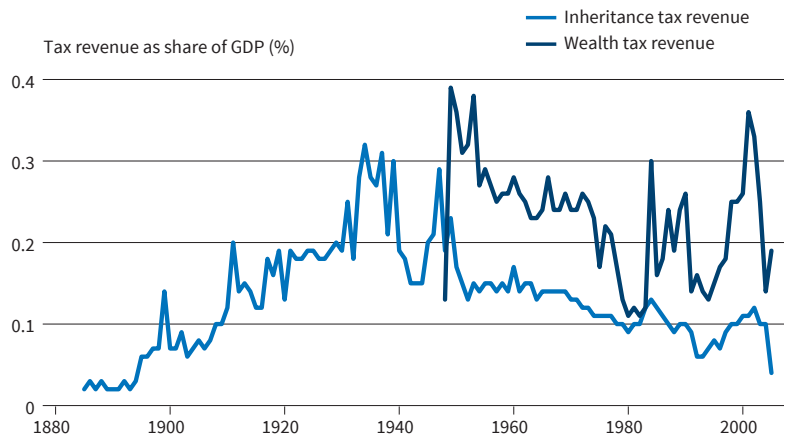
Wealth taxation emerged in Sweden in the beginning of the twentieth century. In the first decades, a fraction of wealth was added to taxable income. In 1948, Sweden got its first separate wealth tax.[5] The evolution of average effective wealth tax rates is shown in Figure 2 for different levels of household wealth. The figure shows that tax rates were low until the 1930s after which they were raised in several steps to reach their historical highs in the 1970s and 1980s of around a tenth of a percent. Concessions for corporate wealth taxation in the 1970s generated a gap between the taxation of closely held business equity wealth and other wealth. After 1950, the wealth tax was between 1% and 3% on large fortunes, and if one assumes a 3% real rate of return on the wealth, this thus represents an equivalent of a tax on capital income between 33% and 100%. However, for lower levels of taxable wealth, the tax was markedly lower.

The abolishment of the wealth tax occurred in 2006, as one of the first decisions made by a new right-wing government. Several factors were behind this move. One recurrent criticism was that the special treatment of business equity had made the tax regressive, taxing middle-class wealth (mainly housing and some financial assets) while exempting the wealthiest individuals who owned large, closely held firms (or dominant positions in listed companies). Another common criticism was that the wealth tax spurred tax avoidance and evasion, especially in the form of capital flight to offshore tax havens. It should be noted that even although the wealth tax was abolished, Sweden taxes both property and various forms of capital income, which means that wealth and its returns are still taxed in Sweden.

Figure 3 presents the evolution of revenues from the taxation of inheritances and gifts (and estates in 1948-1959) and of household net wealth. The inheritance tax revenues represented about 0.1% of GDP during the postwar period, whereas the wealth tax generated about double as much revenue. It is worth noting that the relative size of annual inheritance flows increased in the 1990s and 2000s, connected with a contemporaneous increase in the aggregate wealth to GDP ratio. The fact that tax revenues did not rise in the same manner could be an indication of aggravating problems with inheritance and wealth tax avoidance.

Figure 3

Revenues from Inheritances and Wealth Taxes in Sweden



Source: Du Rietz (2015) [inheritance tax] and Du Rietz and Henrekson (2015) [wealth tax].

[5] Naturally, the wealth tax is not the only tax on household wealth. The *property tax* affects the main non-financial assets of households whereas the *capital income tax* is a tax on cash returns on financial wealth (and actually almost exactly equivalent to a wealth tax on the stock of financial wealth). However, this analysis will only consider the specific net wealth tax.

INHERITED WEALTH AND INEQUALITY

The importance of inherited wealth to the overall economy is not negligible. Recent estimates for Sweden by Ohlsson, Roine and Waldenström (2014) suggest that a substantial share of private wealth, maybe 50%, is in fact inherited, while the rest has been accumulated by individuals over their life cycle. This fraction is relatively close to what is found for other developed economies.[6] The annual flow of inheritances as share of national income has varied over time, but is approximately one-tenth today in Sweden after having been half of that just thirty years ago. In France, results in Piketty (2011) show that inheritance flows are also increasing, but their relative size is greater than in Sweden.

When it comes to the distributional consequences of inherited wealth, they are more difficult to estimate since that requires high-quality microdata on individuals linked across generations. Such data are available for Sweden, and some recent studies address the role of inheritances for different inequality outcomes. For example, Elinder, Erixson and Waldenström (2019) use inheritance tax registers for the 2000s to analyse how inheritances are distributed among heirs. Figure 4 shows one of their main findings, namely that average bequest amounts increase the level of labour income and net wealth of heirs. Heirs thus already tend to have a high economic ability and face beneficial economic circumstances. At the same time, inheritances also matter for poorer heirs, and relative to their pre-inheritance income and wealth, their importance is actually larger than for more wealthy heirs. In other words, while inheritances magnify the absolute economic differences among heirs, they reduce the relative differences between them.[7]

The influence of parental wealth on intergenerational income mobility is studied by Björklund, Roine and Waldenström (2012). Using a large sample of Swedish father-son pairs observed in the 1970s (fathers) and 2000s (sons), they examine the generational correlations for different levels of father income, and whether including capital income into the income measure matters. Figure 5 shows that adding capital incomes increases income transmission, but only among top-income fathers. Among the very top earners, sons' incomes are almost perfectly aligned with those of their fathers according to the estimated intergenerational elasticity of 0.9. Seeking explanations to this pattern, the authors reject the notion that education, non-cognitive or cognitive skills are important influences. By contrast, parental wealth accounts for a great deal of this variation: This, in turn, supports the idea that inherited wealth plays a key role in top income mobility.

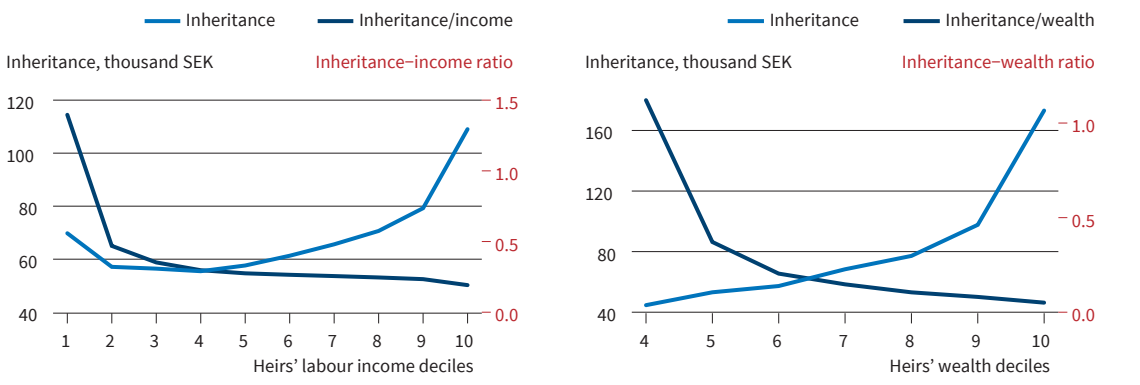
A related question concerns the role of inheritances for the intergenerational mobility of wealth. Adermon, Lindahl and Waldenström (2018) examine another Swedish multigenerational dataset with observations of both wealth and inheritances. They use different methods to estimate the possible relationships, one based on subtracting the value of past bequests from children's wealth, and another based on included bequests as a mediating variable in intergenerational wealth regressions. All methods point in the same direction, namely that a considerable share of recorded wealth mobility - perhaps up to half - can be attributed to inheritance and gifts. Figure 6 shows the result from one of the approaches, namely the alignment between parental and child wealth when children's wealth either includes all inherited wealth or when it does not. There is a clear positive link between the total wealth of parents and their children, but most of it vanishes when the value of inheritances is taken out.

Taken together, these Swedish studies suggest that inherited wealth has clear effects on how important the family background is for a person's economic life chances. Bequests seem to increase generational correlations, especially at the top of the distribution, while mattering relatively more for less wealthy heirs.

[6] See Wolff (2015) and Piketty and Zucman (2015).
[7] This result is not unique for Sweden; it has also been found for the US and Denmark, as discussed by Wolff (2015) and Boserup, Kreiner and Kopczuk (2016).

Figure 4

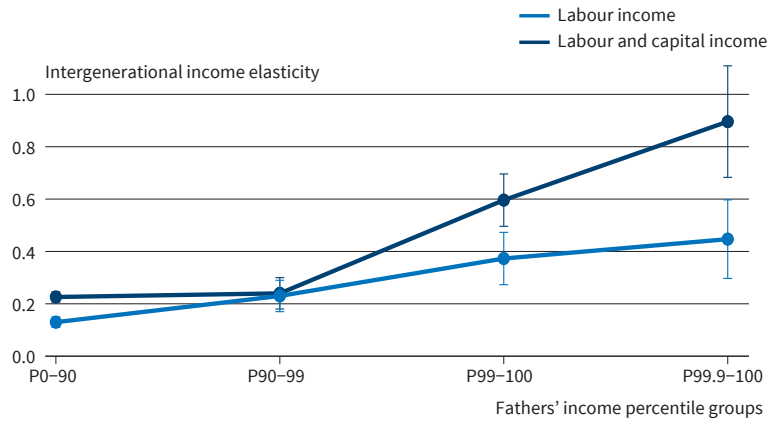
The Distributional Role of Inherited Wealth in Sweden



Note: Observations are averages in the years 2002–2004. Data come from the Swedish Tax Agency and the wealth register at Statistics Sweden.
Source: Elinder, Erixson and Waldenström (2019).

Figure 5

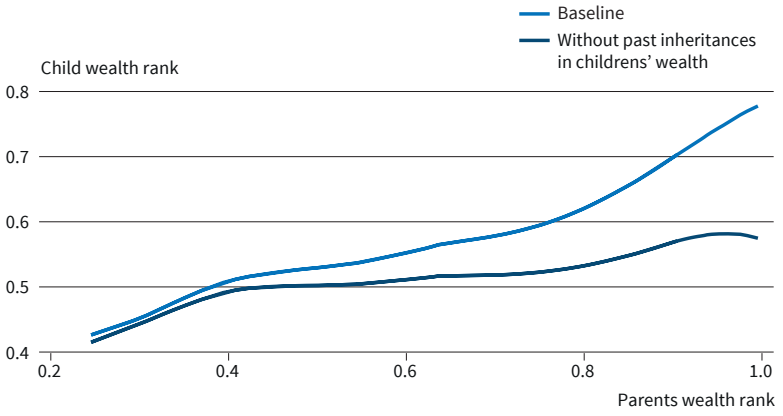
Intergenerational Income Mobility: The Role of Wealth



Note: Data consist of approximately hundreds of thousands of father–son relationships where income is measured in the 40's for both generations.
Source: Björklund, Roine and Waldenström (2012). © ifo Institute

Figure 6

Parent–Child Wealth Correlation: The Role of Inheritances



Note: The figure shows smoothed line fits across wealth ranks of children and their parents in Sweden. Child wealth without past inheritances equals child wealth less the net present value of all past inheritances.
Source: Adermon, Lindahl and Waldenström (2018). © ifo Institute

To the extent that inheritances affect the distribution, taxation will work to counteract these effects.

WEALTH TAXATION, ACCUMULATION AND OFFSHORE CAPITAL

Our knowledge of the role of the Swedish wealth taxes for wealth accumulation and wealth inequality is limited, largely due to a scarcity of detailed microdata on asset ownership. Two recent studies of Nordic wealth tax data attempt to study the effects of wealth taxation on efficiency and avoidance. Jakobsen et al. (2018) analyse wealth taxation in Denmark during the 1980s and 1990s using a relatively rich register database that allows them to examine several aspects of real and avoidance-related effects. They find that the wealth tax had negligible effects on the accumulation behaviour among most groups in society, but the effects were sizeable at the top of the distribution. Seim (2017) analyses a similar elasticity of taxable wealth in Sweden, also using administrative data but over a shorter time period and with smaller asset coverage (especially concerning equity in closely held firms and funded pensions). The main finding is that wealth taxation in Sweden had relatively small effects on wealth accumulation, but notable effects on reporting and avoidance behaviour.

A recurrent question when it comes to the abolition of the Swedish wealth tax in 2006 is whether this had any impact on wealth inequality. Unfortunately, answering this question is obstructed by two circumstances, one being that most of individual wealth data ceased to be collected after the tax repeal, and another being the almost simultaneous occurrence of the financial crisis of 2008-2009. Lundberg and Waldenström (2018) use capital income tax data and property holdings from tax assessments to estimate Swedish wealth inequality before and after the repeal of the wealth tax. Their main finding is that wealth gaps increased towards the end of the 2000s. A possible explanation for this is that the tax repeal was capitalised in asset values, benefitting the relatively rich.[8] Asset decomposition analyses also show that the poor seemed to empty their bank holdings during the crisis, which widened gaps in financial assets.

Tax-driven capital flight to offshore tax havens has been another, lively debated, aspect of Sweden's wealth taxation. The discussion has concerned both its order of magnitude and the distributional profile of the hidden offshore wealth. Recent scholarly efforts have shed some light on both of these questions, but it is fair to say that a lot of uncertainty remains. Roine and Waldenström (2009) used two complementary macro-statistical models, one based on calculating the gap in financial savings between national and financial accounts and the other based on accumulated net errors and omission in the balance of payments. These sources are uncertain by construction, and they have also been shown to be sensitive to adjustments in the computation of the national accounts and the financial

[8] For an individual with a taxable wealth of 10 million SEK, the wealth tax in 2006 was 127,000 SEK. Assuming a lifetime real return of 3%, the net present value of all future wealth-tax payments is 4.25 million SEK (127.000/3%), which thus would imply a mechanical tax-reform effect of an increase by 40% for previously taxed fortunes.

accounts. Their estimate for 2016 is that Swedes hold an equivalent of 130 billion euros in offshore tax havens, which represents about 10% of total domestic financial assets. A study by Alstadsæter, Johannesen and Zucman (2017) makes similar estimates for Sweden, but uses differences in national balance sheets across countries to back out hidden wealth. Their estimate for 2007 is a level of 3% of households' financial assets, which lies in between the other flow-based estimates.

As for the distributional effects of the offshore wealth, Roine and Waldenström (2008) estimated the impact on the income distribution by adding an assumed return from the offshore wealth to the disclosed domestic incomes of the top income percentile. The result was a 25% increase in the top percentile income share Roine and Waldenström (2009) performed a similar exercise, but for the wealth distribution and found that the top wealth percentile share increased by between 25% and 50%. A more recent estimate was made by Alstadsæter et al. (2017) using information on named tax evaders who were linked to administrative wealth registers in Sweden. This showed that the majority of these individuals did indeed belong to the top wealth groups in Sweden; about 80% of them were in the top 0.01 percentile. While showing the distributional impact of the wealth tax, this also suggests that it had a substantial impact on avoidance behaviour among taxpayers who belong to the top wealth groups in society.

CONCLUDING REMARKS

This chapter discusses the Swedish experiences with taxing inheritance and wealth. It focuses on describing the main features of these taxes and their development over time, as well as their implications for economic efficiency and equity. Although these taxes have not constituted large shares of total tax revenues, their levels of effective tax rates have been quite high in certain periods, which had a notable impact on certain groups in society. This article also discusses the role of inheritances on economic inequality, and finds substantial effects especially on income and wealth mobility across generations. However, in the cross-section, inheritances both magnify the absolute dispersion in the population and reduce the relative differences between top and bottom.

The future of inheritance and wealth taxation in developed economies looks uncertain. In recent years, several countries have dismantled their wealth taxes. Most countries still tax inheritances, but their number is decreasing. Recent theoretical and empirical studies point to a distinctive role of inheritance taxation in an optimal tax system with relatively small distortions, while promoting equality of opportunity. Understanding the role of these taxes may therefore not only require insights into their economic desirability, but also into the determinants of their political feasibility. Thus gaining a deeper understanding of the political forces behind capital taxation is a topic worthy of future research.

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Bertrand Garbinti and Jonathan Goupille-Lebret[1]

The Impact of Inheritance and Transfer Taxation on Economic Behaviours and Inequality: A Literature Review for France

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INTRODUCTION

French transfer taxes take the form of an inheritance tax, in which case the tax is computed on the net assets received by each successor. If taxes were imposed only at death, the simplest form of avoidance would be to transfer resources *inter vivos* (during lifetime). Hence the French inheritance tax is complemented by a gift tax.

Intergenerational transfer taxes have unique features that make them different from other types of direct taxation. Firstly, they are infrequent: they occur at death for inheritance and on rare occasions during lifetime for gifts. Such transfers can therefore result from long-term expectations of future tax policy and imply a long horizon of tax planning. These features make empirical identification of the effect of incentives particularly hard. Secondly, they affect the behaviour of both donors and recipients on possibly multiple dimensions. Thirdly, intergenerational transfer taxation applies almost exclusively to a small group of the population, the top wealth-holders, and may therefore play an important role in wealth inequality dynamics and social mobility, both in the short and in the long-term.

The objective of this article is to provide a review of the empirical literature related to intergenerational transfers and their taxation. However, it will only cover the empirical work based on French transfer taxation. A more complete literature review covering all aspects of intergenerational transfer taxation across countries can be found in Kopczuk (2013; 2017). Before going into further details, it is worth emphasising the structure of this review. We will begin in the next section with a brief description of intergeneration transfer taxation in France. Section 3 provides some stylized macroeconomic facts on the long-run evolution of inheritance and the share of inherited wealth in aggregate private wealth. Section 4 presents research related to the impact of inheritance and transfer taxation on inequality. Section 5 begins to review empirical evidence on the effects of transfer taxation and the final section offers some conclusions.

INHERITANCE TAXATION IN FRANCE

French inheritance laws have not changed significantly since the implementation of the Civil Code by Napoleon in 1804. In order to protect children from being disenfranchised, only part of the estate called the disposable portion ("quotité disponible") is freely disposable. The remaining part, called the reserved portion ("réserve héréditaire"), is automatically earmarked for the deceased's children.[2] The amount of reserved portion and the amount freely disposable depend on the number of the deceased's children. For n children, the reserved portion is set to n/n+1 of the estate and the disposable portion to 1/n+1.

Unlike the US, the French transfer taxation takes the form of progressive inheritance and gift taxes based on the net assets received by each recipient. The tax schedule and tax exemptions vary according to the relationship of the recipient to the deceased/donor. Table 1 reports the inheritance tax schedule for children in 2018. Marginal tax rates range from 5% to 45% after an exemption of 100,974 euros per child. Since 2007, surviving spouses have been fully exempted. Table 2 reports the inheritance tax schedule for collateral heirs (from a parallel line of the deceased's family) in 2018. The tax schedule is almost flat, with high tax rates ranging from 35% to 60% and low tax exemptions.

French transfer taxation is nowadays very different than it was at its creation. Until the beginning of the 20th century, gifts and inheritance were both taxed proportionally according to separate schedules. Inheritance taxation became progressive in 1901 and gifts taxation in 1942. From 1942 onwards, gifts and inheritances have been taxed according to a unified schedule. An estate-level tax exemption was created in 1952. It was applied to the overall estate and varied with the number of inheritors in direct line (children and ascendants). From 1960 onwards, tax exemptions were individualized and subject to numerous changes over the years. Figure 1 presents the evolution of the tax exemp-

[1] This paper presents the authors' views and should not be interpreted as reflecting those of their institutions.

[2] The surviving spouse is only considered as protected heir in the absence of children. In this case, the reserved portion accruing to the surviving spouse is equal to 25% of the estate.

Table 1

Inheritance Tax Schedule for Children in 2018

Inheritance brackets (in excess of tax exemptions)		MTR
0 €	8,072 €	5%
8,072 €	12,109 €	10%
12,109 €	15,932 €	15%
15,932 €	552,324 €	20%
552,324 €	902,838 €	30%
902,838 €	1,805,677 €	40%
Above	1,805,677 €	45%
Tax exemption:	100,974 €	

Source: Legifrance (2018).

Table 2

Inheritance Tax Schedule in Collateral Line in 2018

Types of heirs	Inheritance brackets (in excess of exemptions)	Marginal tax rate	Tax exemption
Siblings	Below 24,430 €	35%	15,932 €
	Above 24,430 €	45%	
Nephiews or nieces	Above 0 €	55%	7,967 €
First cousins	Above 0 €	55%	1,594 €
Others	Above 0 €	60%	1,594 €

Source: Legifrance (2018).

tion for children since 1952, both in current euros and in 2016 constant euros. As it happens, the most important increases in tax exemptions have generally been implemented to compensate for inflation and set them back roughly to their real value of 1951.

From 1942 to 1992, *inter vivos* gifts were fully integrated into the inheritance tax in order to achieve complete neutrality between gift and bequest. The same graduated tax schedules applied to both bequests and gifts; most importantly, all *inter vivos* gifts were "recalled" when the donor died and were added to the bequest left at death. As a result, each heir ended up paying taxes on the basis of the total estate that he or she received from the decedent. In 1992, the French government introduced the "ten year rule" whereby gifts made more than ten years before the time of death are no longer recalled in the estate. This rule implies that the tax exemption is no longer a lifetime exemption, but it can be renewed every ten years. This "ten year rule" became a "six year rule" from 2006 to 2011, and then a "fifteen year rule" from 2012 onwards.

EVOLUTION OF INHERITANCE IN THE LONG RUN IN FRANCE

To understand how inheritance and transfer taxation influence wealth inequality dynamics and economic behaviour, a good starting point may be to look at the long-run evolution of inheritance.

In his pioneering work, Piketty (2011) documents that the aggregate inheritance flow has followed a very pronounced U-shaped pattern over the 20th century. Indeed, the annual flow of inheritance expressed as a share of national income was rather stable or, if anything, slightly increased from 1820 to 1910, ranging from 20% in 1820 to 24% in the early 19th century. It subsequently followed a very marked U-shaped pattern. After a steep decline until 1950 (down to 5%), which corresponds to a division by 5 or 6, it multiplied by a factor of 3 or 4 and reached about 15% by 2010. The annual flow of inheritance has thus returned to its 1910 level (Figure 1).

Alvaredo, Garbinti and Piketty (2017) emphasise the fact that this U-shape pattern is common (although more or less marked) to that found in other European countries like Germany, the UK and Sweden. In order to ascertain how this annual inheritance flow transmits into cumulated inheritance stocks, they compute the share of inherited wealth as a fraction of private wealth. Again, they find a clear U-shaped pattern. The share of inherited wealth was as large as 80-90% of aggregate wealth over the 1850-1910 period. It subsequently dropped to as little as 35-45% around 1970, and returned to 65-75% by 2010 (Figure 2).

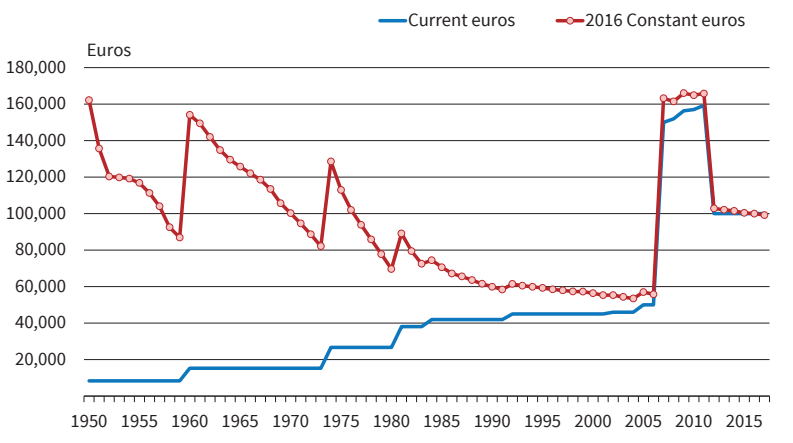
INHERITANCE AND INEQUALITY

The strong U-shaped pattern of both the aggregate flow of inheritance and the share of inherited wealth observed in France over the 20th century may have several implications in terms of inequality and opportunity. In this section, we first present pioneering work on the "dilemma of Rastignac" (i.e., the issue of whether labour income or inheritance lead to the top social positions) and the evolution of the relative importance of inherited wealth versus self-made wealth in France over the 19th and 20th century. We then present research describing the "rentier society" that prevailed in France, and more precisely in Paris, all over the 19th century, jointly with analyses of both how this dynastic society could maintain its position infinitely in the absence of wealth shocks

Figure 1

Inheritance Tax Exemption for Children in France

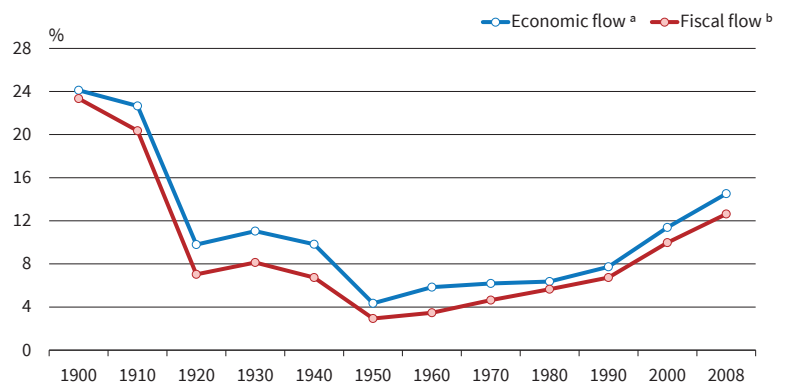
1951–2017



Source: Authors' computations.

Figure 2

Annual Inheritance Flow as a Fraction of National Income in France
1900–2008



a Computed from national wealth estimates, mortality tables and observed age-wealth profiles.
b Computed from observed bequest and gift tax data, incl. tax exempt assets.
Source: Piketty (2011).
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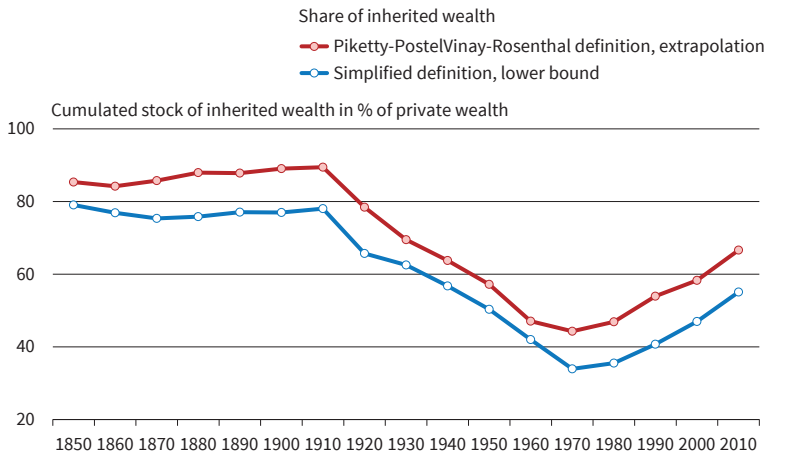
Figure 3

Share of Inherited Wealth as a Fraction of Aggregate Private Wealth in France
1850–2010



Source: Alvaredo, Garbinti and Piketty (2017).
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and how the latter lead to its end in the early 20th century. Finally, to give insights into a more recent period, we present work showing that, inherited wealth played an increasingly important role in granting access to top social positions from the 1970s onwards.

To illustrate the difference between a "meritocratic society" and a "rentier society", Piketty (2010) calibrates a simple model to compute the resources accumulated by the 1% richest inheritors (the top 1 % inheritors) and compares it to resources attained by the 1% richest labour earners (top 1% labour earners) (Figure 3). This illustrates the "dilemma of Rastignac", named after the Balzacian character who has to choose between pursuing a professional career or marrying a rich heiress. Clearly, Figure 3 advocates the second choice for cohorts born in the 19th century. By contrast, it was almost impossible to become rich through inheriting or marrying a rich heir(ess) for cohorts born in the first half of the 20th century. Even the top 1% successors could not afford the lifetime resources that top 1% labour income earners would enjoy. This corresponds to what one would describe as a "meritocratic society", where individuals had to rely mostly on themselves to accumulate wealth. The 19th century was completely different: the top 1% inheritance resources were much higher (up to 2.5-3 times larger) than the top 1% labour earnings. This is what Piketty (2010) describes as a "rentier society". For the recent decades, top 1% inheritors and top 1% labour earners seem both to attain similar positions, although the model predicts a slight increasing trend in favour of inheritors for the future.

To better analyse what a "rentier society" could be, Piketty, Postel-Vinay and Rosenthal (2014) collect data from decedents' estates in Paris from 1872 to 1927. They define inheritors (or rentiers) as those whose assets at death are worth less than the capitalized value of the wealth they inherited, which means they consume more than their labour income. Savers are defined as those whose assets are worth more, which means they save from their labour income. They show that from 1872 to 1927, Paris was more a "city of rentiers" than a "city of opportunity". Inheritors accounted for about 10% of Parisians and owned roughly 70% of the wealth. Rentiers represented half of the "middle rich" (p90-p99) and over 70% of the "very rich" (p99-100). Spending only a part of the return to their inherited wealth allowed them to lead lifestyles far beyond what labour and individual merit alone would have permitted. This "rentier society" turns out to be self-sustaining: rentiers in the top wealth groups left to their heirs enough wealth to enjoy the same living standards as they themselves had experienced (and which represented approximately 90 times the average labour income of the time).

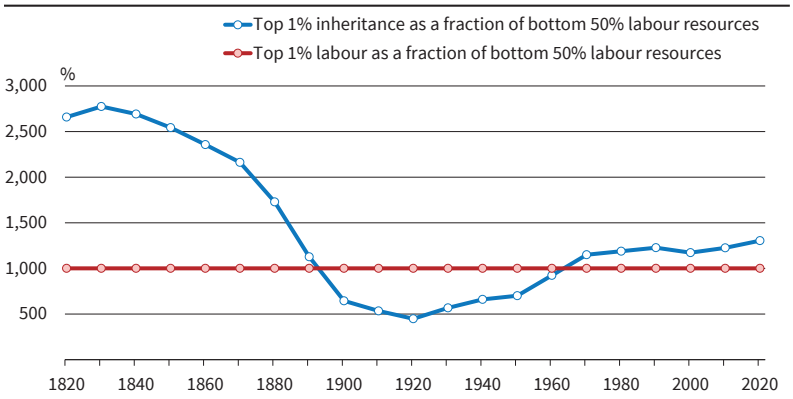
The next step is to better understand the driving forces that explained the transition from a period where inherited wealth was such a strong determinant of material well-being, to another period where high

labour earnings are required to access the top social positions. A recent paper by Piketty, Postel-Vinay and Rosenthal (2018) sheds light on this issue. Over a longer period of analysis than previous studies, they calibrate a dynastic model of saving behaviour from data collected from Paris inheritance archives from 1842 to 1957. They highlight the differences between the two distinct historical periods. On one hand, the period until World War 1 was a period where taxes on income and estate were low, wealth grew rapidly and returns were sufficiently high that modest savings of capital income (about one third) allowed rich dynasties to maintain their consumption potential forever. On the other hand, the following period appears fully different with high taxes and low returns compared to the growth of labour income. These changes reduced the consumption potential of rich rentiers, who earned only one tenth of the income of their 19th century forebears. Negative shocks to wealth, high rates of taxation, and a rapid rise in labour costs seem to drive this huge decline. As expected, inherited wealth also declines, from 75% before World War I to 45% in 1947.[3] The authors show that the high rate of taxation of both estate and income could account for half of the decline in capital income, emphasizing the central role played by progressive taxation at the end of the rentier society.

Nonetheless, since the 1970s, inherited wealth seems to be playing a growing role in social mobility. Using fiscal and survey data, Garbinti, Goupille-Lebret and Piketty (2017) show that the probability of reaching the top wealth group for top labour earners has dramatically decreased since the 1970s. Indeed, while top 0.5% labour earners had a 39% probability to belong to the top 1% wealth group, they have just a 23% probability in 2012. The same holds for the top 1% labour earners whose probability of reaching the top 1% wealth group decreased from 29% to 17%.

Figure 4

Top 1% Successors vs Bottom 50% Labour Income Earners
Cohorts born between 1820-2020



Note: For the top 1% of cohorts born between the 1900s and the 1950s the corresponding lifetime resources were a lot smaller than those one could attain by making the way to the top 1% of the labour income hierarchy.
Source: Piketty (2010).
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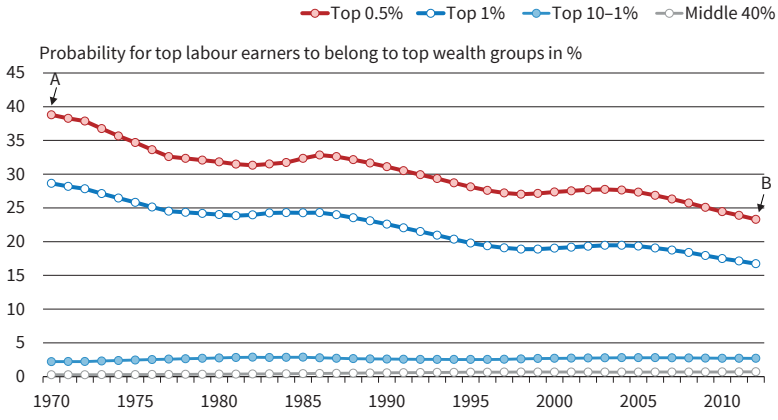
Figure 5

Probability for Top Labour Earners to belong to the Top 1% Wealth Group
1970–2012



Examples A: Top 0.5% labour earners have a 39% probability to belong to top 1% wealth group.
B: Top 0.5% labour earners have a 23% probability to belong to top 1% wealth group.

Note: The figure shows that the probability for top labour earners to belong to top wealth groups has declined regularly since the 1970s.
Source: Garbinti, Goupille-Lebret and Piketty (2016).
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BEHAVIOURAL RESPONSES TO TRANSFER TAXATION

The previous section highlighted how inheritance and transfer taxation may have an important impact on overall wealth inequality and social mobility. Intergenerational transfers and their taxation may also impact the economic incentives of both the recipients and the deceased/donors. In this section, we first present how inheritance taxation may affect the probability of giving and the wealth accumulation behaviour of the deceased during lifetime. We then review empirical work on the impact of receiving a transfer on labour supply, entrepreneurship and homeownership.

An important question regarding behavioural responses to inheritance taxation is its effect on wealth accumulation. Goupille-Lebret and Infante (2017) investigate this issue by exploiting discontinuity in the taxation of life insurance assets trans-

[3] Which is nonetheless still high if we keep in mind the huge wealth shocks that occurred from WW1 to WW2.

mitted at death. Interestingly, these assets benefit from a preferential tax scheme that depends on both the age at which contributions to the life insurance account are made, and (because of changes in the legislation) on the opening date of the account. They show that the French inheritance tax system induces three different behavioural responses: i) inter-temporal shifting responses (people accumulate wealth earlier in time when it is less taxed), ii) shifting among asset portfolio (people invest more in assets that are less taxed) and iii) real responses (people reduce wealth accumulation in order to consume more when it is relatively more taxed). While they document several responses to inheritance taxation, they show that their magnitude is limited. As a result, the impact of inheritance taxation on wealth accumulation turns out to be limited.

Apart from wealth accumulation, inheritance taxation may also influence the probability of giving while alive. France implemented a reform in 1992 that made *inter vivos* gifts partly tax-free (see section 1). This reform provides an incentive to transfer *inter vivos* rather than at death in order to reduce overall tax liabilities. Arrondel and Laferrère (2001) evaluate the impact of this reform and show that the probability of giving is higher for parents whose wealth is taxable. This highlights the fact that donations are not only responsive to gift tax, but also to inheritance tax.

As emphasized by Kopczuk (2013), the effect of receiving an inheritance on the labour supply of recipients is a first order question. Such an effect represents a potential driver of efficiency costs induced by transfer taxation.[4] In France, some papers study the effect of intergenerational transmissions on labour supply and entrepreneurship. Garbinti and Georges-Kot (2016) study the effect of receiving an inheritance on the decision to exit the labour market. Comparing inheritors the year when they receive their bequest with inheritors who will inherit in the next two years, they show that the probability of current retirement is 40% higher among current inheritors. They also document heterogeneity, showing that this effect is stronger for individuals who are the less educated, working part-time or with higher risk-aversion. Arrondel and Masson (2011) and Arrondel, Garbinti and Masson (2014) document a significant increase in the probability of creating a firm after the receipt of a gift, particularly for younger households. Taking a historical perspective from 1945, Bauer, Garbinti and Georges-Kot (2018) also compare current inheritors with future inheritors and show that from 1945 to 1994, salaried men are significantly more likely to become self-employed on the year of receipt of their inheritance than in the preceding five years. As it turns out, this effect decreases over time: while inheritance receipt coincides with an average threefold increase in the rate of entry into self-employment over the years 1945-1964, it only induces an increase of about 80% in this rate over the years 1985-1994. For subsequent periods, the average effect keeps on decreasing and is no longer significant.

Finally, receiving a transfer may also affect homeownership. Spilerman and Wolff (2012) and Arrondel and Masson (2011) investigate this issue. They find that the probability of getting on to the property ladder significantly increases with the receipt of a gift or an inheritance. Arrondel, Garbinti and Masson (2014) confirm this finding, showing a stronger effect on younger households and after the boom in housing prices in the 2000s. Focusing on intra-generational inequality within young households, Bonnet, Garbinti and Grobon (2018) show that transfers such as gifts and inheritances may explain a significant part of the rise in the homeownership rate of the high-income households, while this rate decreases for low-income households whose parents are unlikely to provide them a sufficient financial support, especially after the housing price boom.

[4] For instance, if receiving an inheritance reduces labour supply then a change in inheritance taxation alters labour supply.

CONCLUSION

This article presents a review of the impact of inheritance and transfer taxation on economic behaviour and inequality in France. The major conclusions of this review are that the aggregate flow of inheritance and the share of inherited wealth observed in France over the 20th century have followed a very strong U-shaped pattern. These aggregate dynamics have several implications in terms of inequality and opportunity. During the 19th century, the French society can be characterised as a "rentier society", in which inheritance plays a central role in the perpetuation of wealth inequality. The First World War sees the end of the rentiers and the development of a more meritocratic society. These changes are induced by the conjunction of three main factors: negative shocks to wealth, high rates of taxation, and a rapid rise in labour cost. Since 1970, a new dynamic seems to be at work, with inheritance making a gradual comeback.

Inheritance taxation affects economic behaviour through multiple channels. It impacts the wealth accumulation and giving behaviour of the deceased (while alive), although the magnitude of behavioural responses are limited. The receipt of an inheritance or a gift affects recipients' behaviour through three main channels: labour supply, entrepreneurship and homeownership.

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Marius Brülhart and Kurt Schmidheiny

Taxpayers Seek Strategies to Avoid Wealth Tax[1]

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Did you know that Switzerland is world champion in wealth taxation? Although its wealth tax accounts for just 3.5% of public revenues, Switzerland clearly leads the pack of OECD countries (see Table 1).[2] Switzerland also pretty much bucks the international trend when it comes to this form of taxation, as many industrialised nations – including Germany, Italy and Austria – have abolished the wealth tax in recent decades.

Bucking the general trend along with Switzerland, academics have also rediscovered the wealth tax in recent years. In view of rising income and wealth inequality in most countries, and an ever-growing gap between the "one percent" and the rest of the population, the French economist Thomas Piketty made a prominent plea for higher wealth taxes (Piketty 2014). He advocated a "Holy Trinity" of wealth taxation, consisting of wealth, inheritance and taxes on capital income (Piketty, Saez and Zucman 2013). The latter is not levied in Switzerland.

A central criterion in the evaluation of most types of taxation is how and to what extent they influence taxpayers' behaviour. Simply put, a tax is less desirable if taxpayers react more sensitively ("elastically") to it. Moreover, a particular type of tax is more damaging the more "real" such reactions are, meaning that they affect economic output rather than being only of an accounting nature. In a recent study using Swiss data we examine the reactions triggered by a wealth tax using the Swiss empirical laboratory (Brülhart, Gruber, Krapf and Schmidheiny 2017).

HIGH TAX ELASTICITY OF PRIVATE WEALTH

Our main objective is to estimate how strongly declared private wealth reacts to changes in the wealth tax burden. To this end, we draw on detailed data on taxable wealth and tax rates in the cantons and municipalities.[3] At the cantonal level, we use aggregated data from all cantons for the years 2003 to 2012. At the municipal level, we analyse individual administrative data for taxpayers in the canton of Bern for 2001 to 2011.

The evaluations with both datasets lead to similar estimates: an increase in the wealth tax rate by one tenth of a percent, whether this be at the cantonal or municipal level, reduces the amount of declared wealth by around 3%. This implies that the tax elasticity of wealth is at least twice as large as that of personal income.[4] In other words, wealth reacts more sensitively to taxes. Our estimates also exceed the wealth tax elasticities of other studies, which is presumably due to the higher quality of the data available to us (panel data) (Seim 2017; Zoutman 2015).

AVOIDANCE VERSUS REAL RESPONSES

Through what mechanism does wealth react to differences in taxation? This question is similarly important to assessing wealth taxation as the size of the reaction itself. Responses to changed taxation are most serious for a canton or municipality when they are of a "real" nature. This is the case if people work less or move away due to higher wealth taxes. If reactions are of a purely "accounting" nature, however, wealth taxes may reduce taxable income, but do not effectively lower economic output. Such avoidance strategies could take the form of transfers into tax-free vehicles, gifts or simple non-disclosure.

Individual data from the canton of Bern reveal no signs that the large estimated wealth

[1] This article is a translated version of the article "Steuerzahler suchen bei Vermögenssteuer nach Ausweichstrategien", published in „Die Volkswirtschaft", 2017.
[2] Wealth tax is only levied by the cantons and municipalities. The Swiss federal government has not taxed private wealth since 1959.

Table 1

Wealth Tax Revenues in Selected OECD Countries

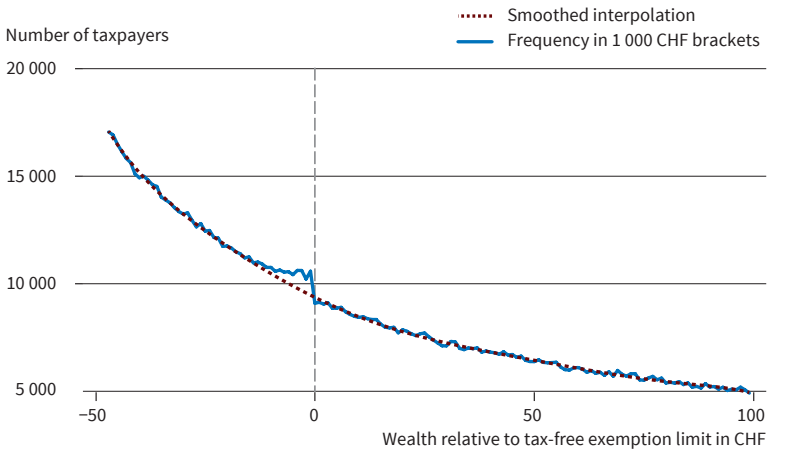
	1995	2000	2005	2010	2015
Switzerland	2.87	3.10	3.40	3.42	3.62
Luxembourg	1.59	1.77	1.45	1.39	2.00
Norway	1.31	1.09	1.02	1.12	1.01
Iceland	1.16	0.00	0.00	0.00	0.00
The Netherlands	0.54	0.50	0.02	0.01	0.00
Spain	0.44	0.55	0.42	0.03	0.32
Sweden	0.41	0.69	0.36	0.00	0.00
Germany	0.26	0.03	0.01	0.00	0.00
France	0.25	0.38	0.40	0.53	0.52
Italy	0.21	0.00	0.00	0.00	0.00
Denmark	0.19	0.00	0.00	0.00	0.00
Finland	0.08	0.28	0.18	0.00	0.00
Austria	0.06	0.00	0.00	0.00	0.00
Greece	0.05	0.00	0.00	0.00	0.00

Note: As a percentage of total tax revenues. The table only features those OECD countries with a wealth tax in 1995.
Source: OECD Revenue Statistics.

[3] The research described here was financed by the Swiss National Fund (see fiscalfederalism.ch). The canton of Bern granted access to anonymised individual data.
[4] Elasticity used in this comparison: "net-of-tax-rate elasticity with respect to wealth returns."

Figure 1

Number of Taxpayers and Wealth Relative to Tax-Free Exemption Limit



Source: Brülhart, Gruber, Krapf and Schmidheiny (2017). © ifo Institute

elasticities are caused by wealthy taxpayers changing residence in search of low wealth taxes. In view of the small area covered by the canton of Bern, this is strong result. It suggests that there may be limited scope for local-level tax competition in the area of wealth tax. However, during the time period in question, there were only minimal changes in the wealth tax rates in the municipalities of Bern. Far bigger changes between Swiss cantons could very well have prompted individuals to change their place of residence. Unfortunately, we currently avail of no data allowing us to observe such movements at the between-canton level.

We furthermore observe that declared *income* reacts relatively weakly to wealth tax differences in the data. Since the lion's share of income in Switzerland is wage income, this means that wealth taxes do not exert any major influence over the real labour supply. Declared *real estate wealth* also reacts relatively weakly to wealth taxes.

Large elasticities in total wealth, by contrast, primarily stem from strong reactions to financial assets, in the short term at least, which account for 43% of total assets in our data.

Our statistics also clearly reveal a "bunching" of wealth just below the tax-free exemption limit: wealth levels that are just below the tax-free exemption limit are declared far more often than the overall distribution would lead one to expect (see Figure 1).[5] Some taxpayers consequently seem to target a taxable income that is just below the tax exemption limit.

Overall, this evidence suggests that the tax sensitivity of declared wealth is based more heavily on consumer decisions and accounting optimisation than on real adjustments in behaviour. Such optimisation is possible, for example, via transfers between corporate and private assets, through payments into tax-free pension plans, or the mere non-declaration of assets. However, a robust estimate of the relative weighting of the various types of reaction is beyond the scope of our available data.

WEALTH VERSUS INHERITANCE TAX

Private wealth is also subject to inheritance tax. It is occasionally suggested that the tax burden should be transferred from wealth tax to inheritance tax.[6] Such suggestions are based on the assumption that the wealth tax limits the incentives to work and to save more heavily than the inheritance tax. Indeed, while the wealth tax has to be paid by savers annually, the inheritance tax is only levied once in a generation, and is paid not by savers themselves, but by their heirs.

A previous study showed that the inheritance tax triggers no statistically significant migration of older, wealthier taxpayers between cantons (Brülhart and Parchet 2014). It therefore seems that neither the inheritance nor the wealth tax exert a major influence over the location decisions of private households in Switzerland.

Our recent study also analyses how the inheritance tax – in addition to wealth and income taxation – impacts on private wealth declared in a given canton (Brülhart et al. 2017). Unlike the earlier study mentioned above, we do find statistically significant effects. This suggests that although inheritance taxes do not have any statistically recognisable effects on the residential choices across cantons, they do influence the volume of assets declared. Indeed, we find that declared wealth reacts at least as strongly to inheritance taxes as it does to wealth taxes.

So, should the tax burden be shifted from annual wealth to bequests? Both types of tax hardly seem to trigger any real reactions, and the avoidance reactions through accounting optimisation and adjustments in consumption seem to be of similar magnitude. However, we do not yet know much on precise response mechanisms. It is for instance conceivable that individuals would try to avoid inheritance tax more strongly through inter vivos gifts, while they respond to taxes in private wealth by retaining earnings in closely held corporations. Such differences would be relevant for the economic assessment of both types of tax, but we know little about this as yet from empirical research.

[5] In the canton of Bern assets worth below 92,000 to 97,000 Swiss francs were not taxed during the period under examination (the threshold value changed over time).

[6] For example, Salvi and Zobrist (2013).

AVOIDANCE STRATEGIES PREVAIL

To summarise, the total volume of declared wealth reacts sensitively to changes in the wealth tax burden. According to the ”Ramsey rule” of optimal taxation one should thus consider transferring the tax burden from wealth to income, the latter representing a less elastic tax base.

However, in addition to the sensitivity to taxes, it is also important to consider the manner in which taxpayers react to taxes. Do they adjust their labour supply, change their place of residence or seek to avoid tax on the same income via optimised accounting, consumption and transfer decisions? Our estimates indicate that pure avoidance reactions, rather than “real” responses in terms of labour supply or residential choice, tend to prevail for both inheritance and wealth taxes. If correct, then our relatively large wealth tax elasticities are more an expression of generous avoidance opportunities than of performance-reducing incentives.

However, our findings on types of behavioural responses are based on data that are either relatively aggregated or somewhat lacking in identifying variation. A more detailed empirical analysis would require more precise and comprehensive data, ideally in the form of merged individual-level tax data covering several cantons.

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The Economic Effects of a Wealth Tax in Germany

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In recent years, the calls for a (re-)introduction of a wealth tax in Germany have become louder for at least two reasons.[1] Firstly, the proponents of a wealth tax emphasise that the share of public revenues from wealth-related taxes collected in Germany is far below the OECD average and that a net wealth tax could create additional fiscal leeway. Secondly, wealth taxes are often claimed to be an effective instrument for fostering equity within societies. Lately, this view has received prominent support from French economist Thomas Piketty, who has turned out to be a fierce opponent to abolishing the wealth tax in France.

In the context of a recent policy report prepared on behalf of the German Federal Ministry for Economic Affairs and Energy (BMWi), we assess the economic and fiscal consequences of the introduction of a wealth tax in Germany. This study represents a shortened version of that report. Special emphasis is placed on the short and long-term impact of a wealth tax on important macroeconomic aggregates, such as Gross Domestic Product (GDP), private investment, employment as well as several other key economic variables. Moreover, we also estimate the expected revenues from a wealth tax, as well as the effect a wealth tax would have on revenues from other taxes, especially the consumption and income tax. Our computations are based on a dynamic computable general equilibrium (CGE) model that depicts the German economy and tax system in detail. In the course of our analysis, we compare the economic and fiscal effects of different wealth tax concepts and wealth tax rates.

DISTRIBUTION OF PRIVATE WEALTH IN GERMANY

Despite being only poorly documented empirically, the distribution of wealth and income in Germany and its development has taken centre stage in the discussions over wealth taxation. The argument has been triggered by recent studies from the *International Monetary Fund* (IMF) (Ostry et al. 2014) as well as the *Organisation for Economic Co-operation and Development* (OECD) (Cingano 2014) who claim to have found a negative link between economic inequality and economic growth – a result that we show to be flawed for advanced economies.

[1] In Germany, a wealth tax was in effect until 1996 when the federal constitutional court declared it to be unconstitutional because of the differences in the valuation practices of real estate property compared to other assets.

Data from the *German Panel on Household Finances* (PHF) – a survey based on 3,500 households that was conducted in 2014 – provided by the German Bundesbank offer a snapshot of wealth distribution in Germany. We summarise several types of wealth that would probably be subject to a wealth tax, including cash, equity, firm and government bonds, real estate holdings and tangible assets such as yachts and art collections, before subtracting the stock of debt in order to obtain a figure for current net household wealth – the relevant tax base for a wealth tax. Average and total net wealth for each net-wealth-decile is depicted in Figure 1. A mere glance at the Figure suggests that private wealth is highly unequally distributed, with the wealthiest individuals holding a significantly larger amount on average than less wealthy households. For example, the wealthiest 10% of households hold an average 1.4 million euros of net-wealth, which is 27 times more than the median household. The share of aggregate wealth in Germany held by the wealthiest decile accounts for over 60% of total net private wealth. By contrast, the least wealthy 10% in Germany tend to have a negative stock of wealth, i.e. their debts exceed their assets.

The distribution of wealth in Germany is often shown to be relatively unequal compared to international standards, judging from various measures such as the Gini-coefficient and ratios of different wealth deciles (Pham-Dao 2016). Important motives for accumulating wealth are to provide for old age, i.e. stabilise consumption levels after retiring, and to insure against several types of unforeseeable life risks, e.g., the loss of employment. Based on cross-country data from the *Household Finance and Consumption Survey* (HFCS), Fessler and Schürz (2015) show that more generous welfare states are generally characterised by higher wealth accumulation by those individuals with only limited or no access to social transfer systems and pension claims. For example, the social insurance scheme in Germany is mostly tailored to 'regularly' employed workers, while self-employed individuals mostly need to provide for risks and retirement on their own. Figure 2 shows that the difference in the average wealth holdings of self-employed and non-self-employed individuals increases with age before peaking at the usual retirement age of 65.

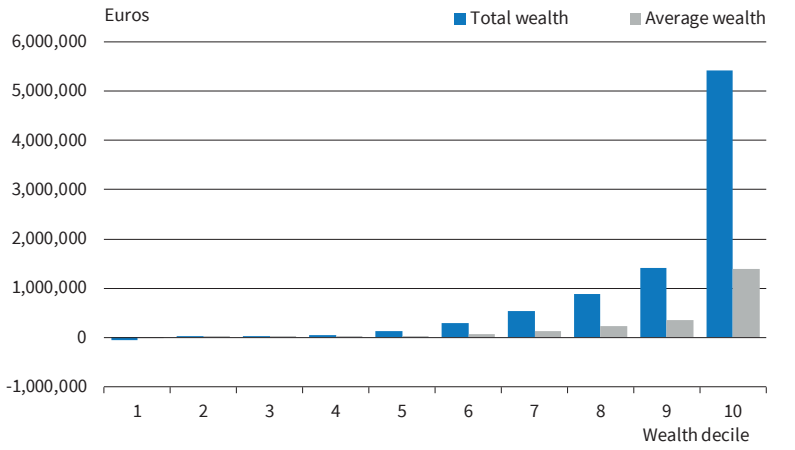
An assessment of the extent of inequality, especially as part of a cross-country comparison, without properly accounting for country-specific rules for accessing social security schemes provides an incomplete picture only and is likely to overstate the inequality that actually exists.

MODELLING A WEALTH TAX: THE CGE MODEL

The economic effects of a tax reform are very complex and include more obvious first-order effects, but also less obvious second-order and feedback effects that can be substantial in size. Computable general equilibrium (CGE) models have proven to be a useful instru-

Figure 1

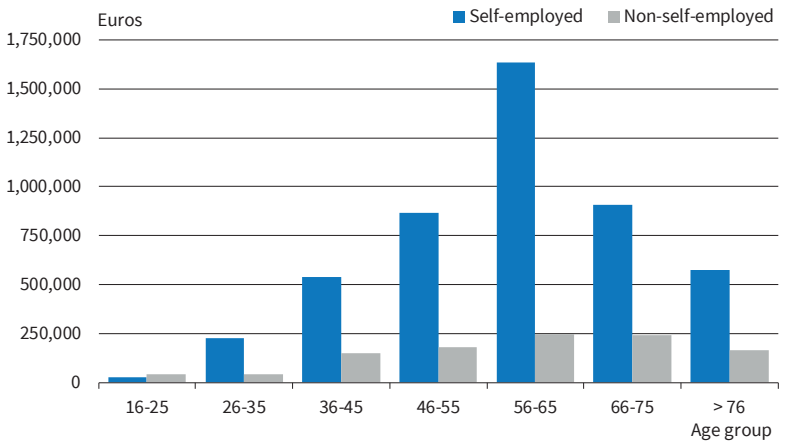
Distribution of Net Wealth in Germany



Source: Bundesbank, 2nd wave of PHD data (2014). © ifo Institute

Figure 2

Comparison of Wealth Holdings among Self-Employed and Non-Self-Employed Workers



Source: Bundesbank, 2nd wave of PHD data (2014). © ifo Institute

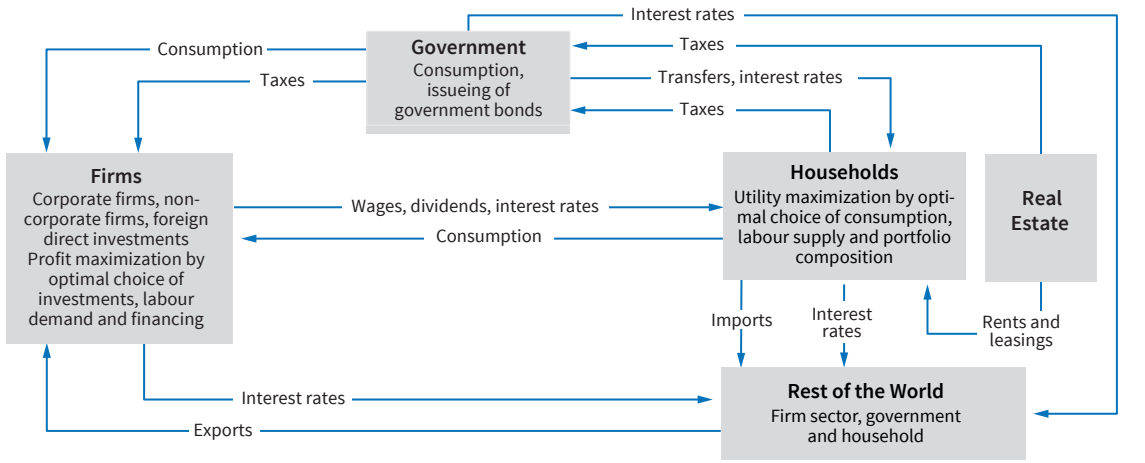
ment to simulate the consequences of counterfactual tax reforms. CGE models make it possible to quantify the economic and fiscal effects of tax reforms taking behavioural responses as well as the interactions and interdependencies between economic agents and sectors into account. Figure 3 illustrates the most important building blocks of the CGE model used in our analysis, which is based on Radulescu and Stimmelmayr (2010).

The CGE model builds on neoclassical growth theory and incorporates several tax sensitive behavioural margins on the firm and household level. In detail, the model incorporates firms with different legal forms, i.e., corporate and non-corporate firms, which differ with regard to their economic characteristics and their legal tax treatment. Each firm faces an inter-temporal investment problem, an optimal financing problem of investments and a labour input problem.

The household is modelled by a representative agent who maximises her life-time utility by choosing the optimal inter-temporal consumption and savings paths and optimal labour supply in the presence of various tax distortions. With regard to the savings decision, the household faces a portfolio choice problem. There are six different types of assets the household can invest in, grouped into three asset classes, namely firm equity/bonds, government bonds, as well as real estate holdings. In the applied model, the wealth tax is levied on these six assets. While the different assets within each class are perfect substitutes, the different asset classes themselves are imperfect substitutes, reflecting, for example, differences in default probabilities. The model also features a government and a foreign sector allowing for links between the domestic economy and the rest of the world. The government consumes, imposes taxes and collects tax revenues and pays transfers to the household sector in a lump-sum fashion. The government's budget is required to be balanced. Like the domestic economy, the foreign economy also comprises a representative firm, a representative household and a government sector. The two economies engage in trade with each other and the model allows for cross-country ownership of the different types of assets.

Overall, the CGE model represents a dynamic, micro-based two-country macroeconomic model, where the foreign economy is relatively large compared to the domestic economy. The dynamic nature of the model makes it possible to study the adjustment process from the initial to the final steady state equilibrium. This is particularly important since investment and savings decisions are, by nature, forward-looking. It is worth noting that the introduction of a wealth tax is effectively equivalent to an increase in the tax rate on the return of those assets that are subject to the wealth tax. If we assume that the (average) return on those assets is 4%, then a wealth tax rate of 1% is equivalent to an increase in the tax rate on asset returns of 25 percentage points. Thus we can expect even seemingly small wealth tax rates to have a significant economic impact.

Figure 3
Stylized Depiction of the CGE-Model



Source: Authors' illustration.

THE ECONOMIC EFFECTS OF A WEALTH TAX IN GERMANY

We consider three different scenarios to study the consequences of different wealth tax concepts and to test the sensitivity of the estimated effects with regard to different tax rates. In the *baseline scenario*, we model a comprehensive wealth tax with a uniform tax rate on all assets. In the *policy scenario*, we assume that the tax burden on corporate equity is lower than for the other assets. This scenario better reflects the actual proposals made by some German political parties. Most of these proposals foresee lower taxes on corporate assets to protect jobs. In the CGE model, we account for the lower tax burden on firm equity by applying a lower wealth tax rate. In a third scenario, we move from a synthetic to what we call a *dual wealth tax* and let the tax rate vary across assets according to their degree of mobility or tax elasticity, respectively. That way, the welfare loss associated with the introduction of a wealth tax can be reduced. In this instance, we apply a relatively lower tax rate to financial assets and firm equity; and a relatively higher tax rate to real estate property. In our simulation exercise, we set the wealth tax rate equal to 0.8% in the baseline scenario. In the policy scenario, the tax rate is 0.4% for firm equity and 1.0% for all other assets. For the dual wealth tax, the tax rate is 0.4% on financial assets and firm equity and 1% for real estate property. The tax rates are chosen so that the (gross) revenues from the wealth tax are roughly equal across the scenarios. In all three scenarios, we assume a tax-free amount of 1 million euros for singles and 2 million euros for married couples. Thus, the wealth tax concepts considered in our analysis would only target the 2-3% wealthiest households in Germany.

Table 1 shows the results of the simulations. It is important to note that caution is required when interpreting the estimates. The numbers indicate the relative deviation (measured in percent) between the realisation of a variable when accounting for the introduction of a wealth tax and a reference value that is computed based on the assumption the status quo is maintained. Furthermore, the figures refer to the long-run effects of a wealth tax after economic agents have fully adjusted to the new situation. In this respect, we assume that without the introduction of a wealth tax, potential GDP in Germany would grow at an annual rate of 1.25% (Bundesbank 2012). The estimates set out in Table 1 make clear that the introduction of a wealth tax – no matter what form it takes – would have a noticeable adverse effect on economic activity in Germany. In the case of a comprehensive wealth tax with a uniform tax rate on all assets (baseline scenario), long-run GDP is expected to be roughly 5% lower than without a wealth tax. Assuming that half of the adjustment process is completed after eight years (Cummins et al. 1996), this implies that the annual growth rate of potential GDP declines by about 0.33 percentage points in response to the introduction of a wealth tax. On the firm side, we observe a significant decline in production by over 5% and investments by over 10%. The reason for this is that the wealth tax dampens the rate of return on investments, as the introduction of the wealth tax is equivalent to a substantial increase in the income tax. The effect is particularly pronounced among foreign investors, since they find it easier to withdraw capital from Germany in order to avoid being subject to the wealth tax. Similarly, turning to the financing of projects within firms, we can see an increase in the debt ratio of around three percentage points, as firms can avoid paying the wealth tax when they use borrowed capital instead of their own retained wealth to finance investments. The slump in production and investment has important implications for the labour market, too. The estimated long term drop in employment due to the introduction of a wealth tax is about 2%.

Turning to the household sector, we find a drop in the stock of wealth by almost 25% and aggregate sav-

ings by over 40%. The reason for this finding is twofold: firstly, the adverse effect of the wealth tax on economic activity is associated with a decline in income per capita, involving lower savings. Secondly, as the wealth tax reduces the income from wealth, the incentives to save part of their income and accumulate wealth decreases. Instead, households tend to consume a larger share of their income, which is why the effect of the wealth tax on consumption is rather modest.

The estimates presented in Table 1 also reveal that the economic costs associated with the introduction of a wealth tax are somewhat lower in the policy scenario, as well as in the case of a dual wealth tax. The reason for this is that the tax burden on firm equity (policy scenario), as well as on financial wealth (dual wealth tax), is lower than in the baseline scenario. Both firm equity and financial wealth are particularly sensitive to taxation and important for production. The adverse effect on economic activity is nevertheless still notable. The estimated long-run decline in GDP is about 4.5% in the policy scenario and 4% in the case of a dual wealth tax. Assuming again that half of the adjustment process is completed after eight years, this implies a reduction in the annual growth rate of potential GDP of about 0.29 (policy scenario) and 0.25 percentage points (dual wealth tax), respectively. The adverse effect of the two alternative wealth tax concepts on the other macroeconomic aggregates is smaller as well.

Table 1

Economic Implications of a Wealth Tax in Germany

Variable (in %)	Baseline Scenario Uniform wealth tax = 0.8%	Policy Scenario Wealth tax = 1.0% Tax on firm equity = 0.4%	Dual Wealth Tax Wealth tax = 1.0% Favoured wealth tax = 0.4%
Gross Domestic Product (GDP)	−5.14	−4.49	−3.96
Firm Sector			
Production	−5.16	−4.50	−3.95
Domestic Firms	−4.30	−4.94	−4.20
Foreign Firms	−11.99	−0.98	−1.95
Investments	−10.25	−8.82	−7.79
Domestic Firms	−9.22	−9.47	−8.18
Foreign Direct Investments	−16.97	−4.59	−5.24
Employment	−2.08	−1.86	−1.63
Debt Ratio (in % points)	+3.81	+3.17	+2.89
Real Estate Sector			
Property & Housing	−1.27	−1.46	−1.32
Household Sector			
Consumption of Households	−4.07	−4.24	−3.50
Savings of Households	−41.33	−39.48	−31.26
Wealth of Households	−24.65	−26.92	−23.28

Source: Authors' computations.

Table 2

Fiscal Consequences of a Wealth Tax in Germany

Variable (in bn. €)	Baseline Scenario Uniform wealth tax = 0.8%	Policy Scenario Wealth tax = 1.0% Tax on firm equity = 0.4%	Dual Wealth Tax Wealth tax = 1.0% Favoured wealth tax = 0.4%
Wealth tax revenues (short-run)	+18.12	+17.90	+15.85
Wealth tax revenues (long-run)	+14.74	+14.04	+13.11
Revenues from other taxes	−46.10	−43.55	−37.26
Labour income tax	−22.13	−19.84	−17.36
Value added tax (incl. indirect taxes)	−12.76	−13.29	−10.98
Corporate taxes	−6.78	−5.26	−4.59
Capital gains taxes	−4.39	−5.13	−4.29
Net (long-run)	**−31.36**	**−29.52**	**−24.14**

Source: Authors' computations.

TAX REVENUES FROM WEALTH TAXATION

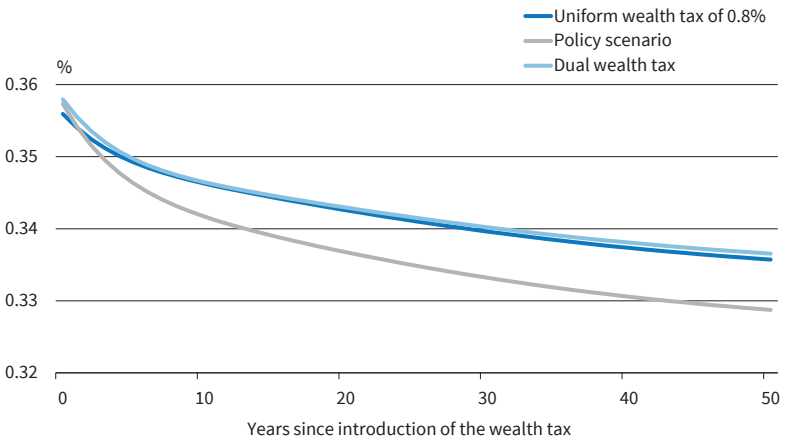
Does the wealth tax pay off in fiscal terms, as often suggested in the current debate? Considering the wealth tax in isolation, we can see that is does indeed have a substantial revenue potential (Table 2). The (gross) annual wealth tax revenues vary across the three scenarios between 16 and 18 billion euros in the short-run and 13 to 15 billion euros in the long-run. At the same time, though, we find that the public revenue increase stemming from the wealth tax is more than offset by a decline in revenues from other taxes. The drop in revenues from the labour income tax and the sales tax in particular are substantial. As a result, the overall fiscal effect of introducing a wealth tax is expected to be negative, generating a loss of around 24 billion to 31 billion euros annually, depending on the wealth tax concept. The main reason for this is that, while the wealth tax revenue itself is generated only by a small number of taxpayers – only around 2-3% of the German population have wealth holdings that are higher than the tax-free allowance of 1 million or 2 million euros, respectively – its burden is carried by virtually everyone, as indicated by the decline in GDP, investment, and employment. It is important to note that the administrative costs, as well as the compliance costs associated with a wealth tax, are not included in our estimates.

RE-DISTRIBUTIONAL EFFECTS OF THE WEALTH TAX

Our analysis also sheds light on the redistributive effects of a wealth tax in the sense that it allows us to assess how introducing a wealth tax affects the ratio between capital and labour income. Since the wealthiest households typically mostly receive income from capital rents and business profits, the capital/labour income ratio tells us how effective the wealth tax is in pro-

Figure 4

Functional Distribution of Income after the Introduction of a Wealth Tax
(Firm profits + interest income) / labour income



Source: Authors' computations. © ifo Institute

moting economic inequality. Figure 4 illustrates the development of the ratio between capital income – or, more precisely, corporate profits and capital rents – and labour income. The ratio decreases in all three scenarios, indicating that the gap between capital and labour income diminishes over time. A smaller ratio can be explained by the fact that capital income growth is reduced more than labour income growth – it does not reflect a re-distributive effect of the wealth tax in the strictest sense of the term. To put it bluntly, instead of giving wage earners a larger piece of a given cake, the cake becomes smaller and wage earners lose a smaller piece than capital earners. It is interesting to note that this effect is most pronounced in the policy scenario, despite the reduced wealth tax rate for firm equity.

SUMMARY AND CONCLUDING REMARKS

Taxing wealth in order to alleviate economic inequality and to generate additional public revenues is a recurrent theme in the political debate. However, our analysis demonstrates that a wealth tax can have a notable adverse impact on economic activity, reducing economic growth, investment and employment. As a result, the burden of a wealth tax is practically borne by every citizen, even if the wealth tax is designed to target only the wealthiest individuals in society, via high tax-free allowances, for instance. Moreover, the introduction of a wealth tax in the form considered in our analysis would actually lead to a decline in total tax revenue, as the revenue gains from a wealth tax are notably lower than the decline in revenues from other taxes, especially the labour income tax and the sales tax. Thus, a wealth tax fails to significantly promote economic equality or create additional fiscal leeway.

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Martina Lawless and Donal Lynch

Scenarios and Distributional Implications of a Household Wealth Tax in Ireland[1]

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INTRODUCTION

Designing a broad tax base that provides stable and sustainable sources of revenue with minimal economic distortion is a central policy objective of tax authorities worldwide. The examination of ways to improve the resilience of tax revenue streams to economic fluctuations has led to a discussion of the feasibility and desirability of including household wealth in the tax base in some way. For example, wealth taxes were re-introduced in response to the financial crisis in Spain and introduced on a temporary basis in Iceland. These initiatives were followed by broader debates on the potential for one-off capital levies in highly-indebted European countries (Deutsche Bundesbank 2014) and the inclusion of an analysis of regular taxation of wealth in the wide-ranging report on the UK tax system (Mirrlees et al. 2011).

This paper looks at a range of different wealth tax structures and their potential impact in terms of population coverage and tax yield using household level data on wealth in Ireland. We calculate a number of scenarios based on stylised examples of wealth tax structures similar to those in existence in other European countries. Our results give a wide range of possible scenarios; applying other country models shows how variations in the exemptions and thresholds can result in less than 1% to almost 50% of households being liable to a wealth tax. The scenarios we investigate show that varying the level of the threshold is the key determinant of the number of households that will be affected, which is in keeping with the concentration of wealth at the upper end of the wealth distribution. Given the numbers of households affected, the treatment of the household's main residence (which is the largest asset for almost all households, apart from the very wealthiest) is an important factor in the level of average tax payment and hence total revenues raised.

Looking at the composition of households under the different tax scenarios, we find that even with a narrow base and high threshold, some households in low income deciles are affected. This is because of the imperfect correlation between income and wealth.

PATTERNS OF IRISH HOUSEHOLD WEALTH

In order to undertake this analysis of the extent of the revenue base for a wealth tax and how many households it would affect depending on threshold levels and exemptions, detailed information on the asset and liability structure of Irish households was required. This data is available in the Household Finance and Consumption Survey (HFCS), which was carried out by the Central Statistics Office in 2013 in coordination with the Central Bank of Ireland (CSO 2015 and Lawless, Lydon and McIndoe-Calder 2015). The survey covered over 5,000 households across the country and included an over-sampling of households in more affluent areas to maximise the detail on asset holdings of wealthier households, where financial structures might be expected to be more complex.

As has been commonly found across countries, wealth is very unevenly distributed across Irish households – the median net wealth is 102,600 euros and the mean is over double this amount at 218,700 euros. The wealthiest 10% of households hold close to 54% of total household wealth and the top three deciles own close to 85% of the wealth. The picture is somewhat more evenly distributed by income decile, with the top 10% of households by income owning one-quarter of total wealth.

In terms of the components of wealth, we find that the household's main residence (HMR) accounts for just under half of the value of total gross assets (i.e., not adjusted for debt) of Irish households. Farms make up a further 20% of asset values and other residential property 9%. Overall, Irish households hold almost all of their wealth in the form of real assets, with just 12% accounted for by financial assets. The largest debts are also those associated with property, with outstanding mortgages on the household main residence representing 18% of total gross asset values, while other property debts account for another 6%.

CONSTRUCTING SCENARIOS FOR A WEALTH TAX DESIGN

We present a range of hypothetical scenarios loosely based on the structure of existing wealth taxes across European countries (specifically France, Spain, Iceland, Netherlands, Norway and three Swiss cantons). This approach allows us to explore the trade-offs from adjusting thresholds and asset exemptions. These hypothetical tax designs start from broadest possible tax base and a low threshold, thereby casting a wide tax net, and then examine the impact of applying exemptions to specific assets (especially the HMR) and

[1] This work was carried out as part of the joint ESRI-Department of Finance/Revenue Commissioners research programme on Taxation and the Macro-economy. The Household Finance and Consumption Survey used in this analysis was collected by the Central Statistics Office in coordination with the Central Bank of Ireland and anonymised micro-data made available under the terms of the Statistics Act, 1993. The authors would like to thank Paul M. Crowley and Gerry Reilly of the CSO for their help with the data. We would also like to thank Alan Ahearne, Kieran McQuinn, David Hegarty, Gary Tobin, Edgar Morgenroth, Kevin Nolan, Pat Leahy, Seamus McGuinness, Keith Walsh and attendees at seminars in the Department of Finance and in the ESRI for their useful comments. The views expressed in the paper are the authors' own and not necessarily those of the Department of Finance or ESRI.

Table 1

Thresholds and Exemptions for Liability to Wealth Tax by Wealth Tax Scenario

	Personal Threshold (euros)	Exclusions and Deductions
High Threshold – Large Exemptions	1m (double if married) 500,000 per child	Excl. HMR, Farms, Business, & Pension
No Threshold – Large Exemptions	None	Excl. HMR, Farms, Business, & Pension
High Threshold – No Exemptions	1m (double if married) 250,000 per child	None
Middle Threshold – No Exemptions	500,000 (double if married) 125,000 per child	None
Low Threshold – 50% Deduction	125,000 (double if married) 30,000 per child	Excl. Pension Assets Ded. 50% from HMR, Farms & Business
No Threshold – HMR Exempt	None	Excl. Household Main Residence
Low Threshold - Large Exemptions	125,000 (double if married) No child allowance	Excl. HMR, Farms, Business, & Pension
Low Threshold – No Exemptions	125,000 (double if married) No child allowance	None
All Net Assets	None	None

Source: Authors' illustrations.

increasing the qualifying threshold. For all of these different scenarios, we calculate the size of the tax base, the percentage of households that would be liable, the average tax payment and resulting revenues, as well as the distribution of the tax across household types.

The broadness of the wealth tax base is largely determined by two main parameters; the application of exemptions from, or reductions to, wealth tax liability for particular asset types e.g., the household main residence; and varying the level of individual thresholds of wealth before entering the wealth tax net. In the hypothetical wealth tax scenarios presented here, these two parameters are combined in varying extents to generate a variety of theoretical wealth bases. Each of these scenarios is labelled primarily in reference to these two parameters. The higher the individual thresholds, the narrower the base and the more assets are exempted or reduced in value, the narrower the base too.

Table 1 shows the main features of each of our alternative scenarios. At one extreme, a combination of the narrowest of asset bases and the largest individual thresholds can be conceived of, similar to the existing wealth tax structure in France. In this "High Threshold – Large Exemptions" scenario, exemptions[2] for the household main residence, farms, business assets and voluntary pensions (almost three quarters [73.6%] of gross assets) are combined with high individual thresholds of 1 million euros (double if married) and 500,000 euros per child.

At the opposite extreme, bringing together the broadest of asset bases and the smallest of individual thresholds yields a scenario whereby all positive net assets would be liable. In the "All Net Assets" scenario, all asset types are included in the base at their full valuation and there is no individual threshold, which would reduce individual wealth tax liabilities. In this scenario, any household with net assets greater than zero would incur a wealth tax liability. The full range of scenarios is set out in Table 1, with each scenario varying as the combination of personal threshold and exclusions and deductions. For ease of comparison, each of these scenarios will be assigned a tax rate of 1%.

The final critical determinant of potential revenue yields is, of course, the rate applied. In the results presented here we show the outcome of having a 1% rate applied to all qualifying wealth above the specified threshold. As this is a simple proportional rate, the revenue from alternative rates would be a multiple of the number reported – a 0.5% rate would half our revenue estimates, or a 2% rate would double them, for example. The effects of introducing multiple rates would be more complex, but their upper and lower bounds can be set by these single proportional rate estimates.

TAX BASE, HOUSEHOLD LIABILITY AND REVENUE ESTIMATES

Table 2 shows the extent of the coverage of each wealth tax scenario and potential total revenues. To begin with the highly unrealistic scenario of taxing all positive wealth at 1%, this would raise an estimated 3,781 million euros and affect 86% of all households. To achieve this yield, however, would require taxing lots of people who have very little net wealth and possibly low incomes. In addition, applying a wealth tax to all households would present a very large administrative burden. All of the existing wealth tax designs in other countries apply a minimum wealth threshold for this reason. Looking at the results, we see a stark contrast in terms of the size of the tax base and the number of households liable between the very broad-based systems and the more narrowly-targeted systems, highlighting a distinction between taxing (almost all) wealth and taxing the upper part of the distribution of wealthy households.

The narrowest tax base that we look at in Table 2 – the high-threshold, large exemptions case - is relatively similar to a simplified version of the structure of the French wealth tax system. It applies a high personal allowance threshold, including increases for children, and exempts a range of assets such as the main residence, farms, business and pension wealth. This results

[2] When particular assets are exempted from liability to wealth tax, the debt associated with those assets is still deducted from the remaining assets to arrive at net wealth. For example, when the household main residence (HMR) is exempted from liability to wealth tax, mortgage debt associated with the HMR is still deducted from the remaining gross assets to arrive at net wealth.

Table 2

Tax Base, Household Liability and Revenue

	Tax base (million euros)	% Wealth Liable	Liable Hhds (thousands)	% Liable Households	Revenue (million euros)
High Threshold – Large Exemptions	5,297	1.4%	4	0.25%	53
No Threshold – Large Exemptions	82,257	22%	1,075	64%	823
High Threshold – No Exemptions	24,753	6%	26	1.5%	248
Middle Threshold – No Exemptions	62,178	16%	95	6%	622
Low Threshold – 50% Deduction	87,151	23%	296	18%	872
No Threshold – HMR Exempt	204,099	54%	1,140	67%	2,041
Low Threshold – Large Exemptions	32,968	9%	96	6%	329
Low Threshold – No Exemptions	205,429	54%	548	32%	2,054
1% tax on all net assets	378,120	100%	1,459	86%	3,781

Source: Authors' calculations.

in just 1.4% of wealth liable for taxation. The 4,288 liable households would pay over 12,000 euros each in this scenario (Table 3 gives the tax payment estimates for liable households) and, in total, this scenario would raise 53 million euros in revenue. Keeping the asset exemptions in place but removing the personal allowances completely (the no threshold, large exemptions scenario) brings 64% of households into the tax net, although as the largest assets have been excluded, the amount of total wealth liable for taxation is just under 22%. Many more households are liable to be taxed under this scenario, albeit at a considerably lower average amount (765 euros), resulting in a revenue yield of 823 million euros.

The effect of taking the opposite course and removing all asset exemptions, but restoring the personal allowances is the basis of the next two scenarios presented – high and middle thresholds, both with no exemptions. This experiment demonstrates that the threshold largely drives the number of households liable, even when no specific asset exemptions are included. Unlike the previous example where excluding many assets but having no threshold for remaining wealth still resulted in the majority of households facing some level of wealth tax, both of these scenarios would have the wealth tax apply to not much more than 5% of households. The average tax payment is lower in the middle threshold scenario as households with lower levels of wealth are included; notwithstanding this, the revenue is 2.5 times higher because of the larger number of taxpayers.

Table 3

Estimated Tax Amounts for Irish Households

	Mean payment (euros)
High Threshold – Large Exemptions	12,353
No Threshold – Large Exemptions	765
High Threshold – No Exemptions	9,590
Middle Threshold – No Exemptions	6,565
Low Threshold – 50% Deduction	2,945
No Threshold – HMR Exempt	1,790
Low Threshold – Large Exemptions	3,418
Low Threshold – No Exemptions	3,746
All Net assets	2,592

Source: Authors' calculations.

In practice most specific country systems take a balance of some form between the asset exemption and allowance approaches. We therefore take an intermediate approach for the next scenario – low threshold, 50% deduction - with a lower threshold (125,000 euros for an individual, double if married and an additional 30,000 euros per child) applied and specific assets are provided with an offset of half their value (specifically the main residence, farms and businesses, while pensions are exempted completely). This scenario brings 18% of households into the scope of a wealth tax, with an average tax bill of just under 3,000 euros per household.

Given the high share of household wealth in Ireland accounted for by the household's main residence, we include a scenario of exempting this particular asset only with no other allowances or exemptions applied (no threshold, HMR exempt). The lack of personal allowance in this scenario means that it would bring a significant proportion of households into the tax net, but by exempting the main asset that most households possess, the average payment would be lower than in all but one of the other scenarios presented (1,790 euros).

The final new scenario reduces the threshold once again (low threshold, no exemptions): this time applying to all wealth above 125,000 euros (doubled for married couples but no additional child allowance), perhaps the broadest feasible base. This threshold reduction brings considerably more households into the tax net, increasing the percentage liable to almost one-third compared to the 6% in the middle threshold, no exemptions scenario. This reflects the highly non-linear distribution of wealth across households.

DISTRIBUTION OF LIABILITY

The calculations in the previous section showed the percentage of households that would be liable for a wealth tax under a range of scenarios. This section

looks at where these households sit in the income distribution. Although income and wealth are positively correlated, there are a number of reasons why this correlation is not perfect. Kaplan, Violante and Weidner (2014) identify the "wealthy hand-to-mouth" as households with valuable assets – typically property or pension funds – but low incomes. For example, households may have acquired assets through inheritance, or assets they purchased in the past may have had varying degrees of capital appreciation (or indeed depreciation in the case of households with negative equity properties). Some farming households may have assets of high value that generate modest income streams and older households may own mortgage-free property, but now be living on a pension income that is considerably lower than their prior employment earnings. At the other end of the age distribution, high-income young families with recent house purchases may have apparently low net wealth relative to their income, as they are at a life-cycle stage where asset accumulation has only just begun.

In Table 4, we divide households into ten income buckets with an equal number of households in each grouping and calculate the percentage of the wealth tax that would be paid by each group. The immediately striking result from this analysis is that, with the exception of the very narrowly focused high threshold/high exemption scenario, all of the other wealth tax designs would affect at least some households in all of the income bands. Although we find that the bulk of the tax revenues would be raised from higher income households under all hypothetical tax designs, some households at all points in the income distribution would find they are liable for some payment in all but the first case that combines a high threshold with large exemptions. The scenarios where there is no threshold at all results in a fairly even spread of liable households all across the income distribution, even in cases where considerable assets are exempted (such as the "no threshold, large exemptions" and "no threshold, HMR exempt" cases).

In order to mitigate against an excessive burden of taxation, some systems of wealth taxes (such as those in place in France and Spain) have schemes that cap the combined (income and wealth) tax payable at 75% and 60% of income respectively. We experiment with the impact of capping wealth taxes alone at 33% of household income for each of the alternative scenarios presented earlier.[3] For a 1% rate of wealth tax, this is equivalent to removing from liability household assets that are worth more than 300 times household income. A maximum payment cap has an immediate direct impact on reducing the revenue associated with each scenario, which is largest when middle or high thresholds are combined with no asset exemptions (revenue reductions of between -18% and -26%). In the other scenarios, the proportionate reductions tend to be slightly larger where the initial wealth tax revenue is greater.

As the purpose of a maximum payment cap is to address concerns regarding the ability to pay for high wealth – low income households, it follows that the beneficiaries of an income cap on wealth tax payments are likely to be those in the highest wealth deciles. Broadly speaking, the reduction in tax due to income capping would be distributed in much the same proportion as initial burden of wealth tax with, 90% plus of the reduction typically benefitting the top wealth decile. By contrast, the maximum payment cap would benefit households at the lower end of the income distribution to a much greater extent than the initial wealth tax burden on these households. There is a U-shaped distribution of benefit of the income cap by income decile in that households at either end of the income distribution are expected to benefit from the reduction in wealth tax. The income cap has a larger burden reducing effect among lower income decile households when there is a low threshold, or none at all.

[3] Results are presented in detail in the working paper version of this article, available at http://www.esri.ie/pubs/WP549.pdf

Table 4

Wealth Tax Payment as a Proportion of Gross Income by Income Decile

Decile	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	Top	All Deciles
High Threshold – Large Exemptions					2.4%			4.4%	10.1%	4.8%	5.4%
No Threshold – Large Exemptions	3.3%	1.4%	0.9%	1.4%	1.3%	1.3%	1.3%	1.5%	1.9%	1.7%	1.6%
High Threshold – No Exemptions	16.4%	27.4%	3.5%	4.4%	17.0%	17.1%	8.3%	10.7%	7.5%	5.8%	6.9%
Middle Threshold – No Exemptions	40.4%	20.8%	12.2%	8.4%	12.9%	10.4%	9.5%	7.8%	8.4%	4.5%	6.3%
Low Threshold – 50% Deduction	17.2%	8.7%	5.7%	6.1%	5.7%	5.1%	4.1%	3.9%	4.0%	3.0%	3.9%
No Threshold – HMR Exempt	6.1%	4.8%	3.0%	3.5%	3.0%	3.5%	3.3%	3.7%	3.7%	3.4%	3.5%
Low Threshold – Large Exemption	15.5%	5.5%	6.6%	9.9%	5.2%	5.5%	3.6%	3.7%	4.2%	2.3%	3.2%
Low Threshold – No Exemptions	19.6%	12.2%	9.7%	9.4%	7.7%	7.0%	6.2%	5.4%	5.3%	3.8%	5.4%
All Net Assets	15.7%	9.2%	6.3%	6.1%	5.1%	5.5%	4.5%	4.4%	3.9%	3.7%	4.7%

Source: Authors' calculations.

CONCLUSIONS

This paper aims to provide as comprehensive an analysis as possible of the wealth holdings of Irish households and the potential implications that a wealth tax could have, if applied to the existing structure of assets and household composition. To provide a broad range of estimates and to illustrate the different effects of adjusting threshold levels and including or exempting specific assets, we calculated our wealth tax revenues and households liable using two different approaches. The first approach took the existing wealth tax structures of a number of European countries and applied them to the Irish household structure. The second used a range of hypothetical combinations of threshold level and asset exemptions to go more deeply into their respective impacts on the revenues and numbers of households that would be liable under different tax designs.

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Massimo Bordignon and Angelo Baglioni

The Future of Fiscal Policy in the Euro Area

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INTRODUCTION

The European monetary union (EMU) is a largely incomplete currency union. The Euro founding fathers were very aware of this issue but, because of political constraints, they chose a "minimalistic" solution (Constancio 2018). The optimistic view of the time was that even an incomplete currency union would be enough to induce greater political and economic convergence among member countries, making it easier to adopt further reforms of the EMU architecture when, and only if, needed. Thus a common currency and a fiscal brake, in the form of the Stability and Growth Pact (SGP), represented the only two blocks of the original EMU. There was no perception that, in order to support the currency union, a common financial supervision for banks and a crisis management mechanism for member countries might also be needed.

As far as fiscal policy is concerned, the compromise reflected the leading macro-economic theories of the time. Discretionary "fine tuning" fiscal policy should be avoided to support the cycle, leaving that task to automatic stabilizers instead. Asymmetric shocks could be dealt at national level, using the fiscal buffer guaranteed by the respect of SGP in good times. Monetary policy could take care of symmetric shocks and, if needed, soft cooperation among national fiscal policies would go far enough. Indeed, the same notion of an aggregated fiscal policy for the Eurozone was absent from the debate.

The international crisis of 2008–09, and the Eurozone crisis of 2011-13 to an even greater extent, proved most of these ideas, and particularly the easy optimism of the founders, wrong. The financial crisis showed that recessions of such amplitude may exist that monetary policy could be stretched to a limit; and that fiscal policy may be called upon to play a more active role, beyond the role of automatic stabilizer. The spread of contagion between financially interconnected Euro area countries and the overlapping crises, hitting both the bank and the sovereign sectors, showed the importance of a centralized supervision of banks (Draghi 2018). The risk of a break-up of the Eurozone led the ECB to resume a role of lender of last resort, at least under specific circumstances. On economic grounds, the crisis also stopped the process of economic convergence across Eurozone members, giving rise to increased divergence that only very recently seemed to start receding (see Figure 1).

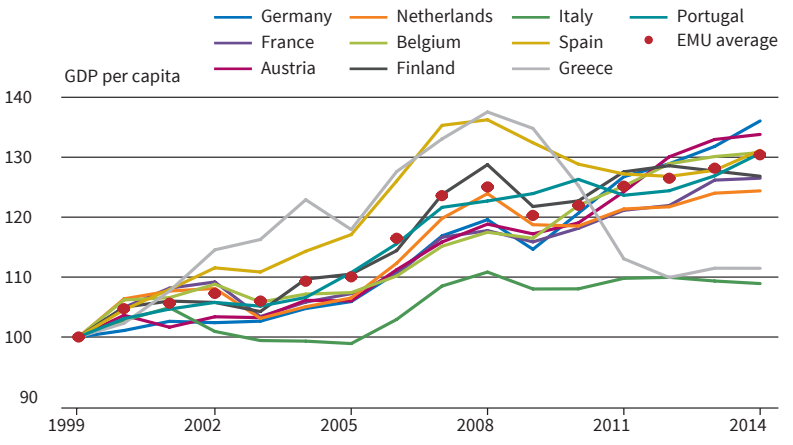
THE LIMITS OF THE EUROPEAN FISCAL FRAMEWORK

The Eurozone took several steps to address these pitfalls. The most important progress has been made in the banking sector, where a single supervisory mechanism and a common resolution system have been introduced. However, it should be stressed that these steps are still largely incomplete. The lack of a common fiscal backstop for the banking sector and of a common deposit insurance system still creates a real risk of bank runs and capital flight if a new financial crisis were to occur, challenging the integrity of the Euro area. The proposal to establish a more comprehensive Capital Markets Union is still in its infancy.

As far as fiscal policy goes, the progress made so far is even more limited. The main innovation has been a further strengthening of fiscal rules, with the introduction of an international treaty, signed by all Euro area countries, the Fiscal Compact, and the revision of the SGP, strengthening the role of the European Commission in enforcing the rules. A second innovation has been the introduction of the European Stability Mechanism (ESM), as the result of another international treaty across the Eurozone countries. The ESM provides financial support to Euro countries in trouble, in exchange for strict conditionality. However, the ESM is not a tool for macro-fiscal management, but a fund of last resort. It can only intervene under very specific circumstances, namely when a member country has lost access to financial markets, after a technical judgement by the

Figure 1

Evolution of GDP per Capita in the Euro Area, 1999–2014



Note: Selected countries. Base year = 1999.
Source: Penn World Table – version 9.0 (2015).

Commission and the ECB on the sustainability of its debt, and with decision rules that require the unanimity of lenders[1]. Financial assistance takes the form of a loan (not a grant) at favourable interest rates and reimbursable over a long period[2].

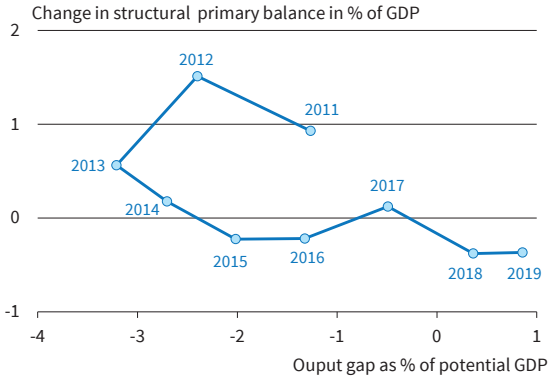
The strengthening of the SGP finds little justification in the crisis itself, in the sense that it would be difficult to argue that lack of discipline in controlling public finances were the main cause of the Euro crisis. With the exception of Greece, lack of control of the banking sector, the emergence of private debts and the accumulation of internal and external imbalances are much more obvious culprits (Baldwin and Giavazzi 2015). Indeed, some of the countries more damaged by the crisis posted the best results in terms of their public finances just before the Euro crisis hit. In 2007, for example, public debt to GDP was 65% in Portugal, 36% in Spain and 25% in Ireland respectively. In other words, these figures were well below the Euro average. Even Italy, another high debt country, had managed to bring debt over GDP down to 103% just before the crisis hit.

The revision and strengthening of the fiscal rules have been accompanied by some attempts to improve coordination of fiscal and economic policies. The European semester was introduced in order to increase coordination of fiscal policies, and a new Macro-Economic Procedure was set up to avoid the formation of imbalances and to increase the convergence of economic policies. But both tools have no real teeth. The macro-imbalance procedure is difficult to enforce because, unlike fiscal budget aggregates, it is harder to pinpoint the specific responsibility of a country on several macro indicators. The Commission's Country Specific Recommendations, when touching upon issues outside the fiscal area, are just suggestions and they are treated as such by member countries. Finally, the SGP is a fiscal brake, not a tool for aggregate fiscal management. It contains several provisions to shape the fiscal adjustment required for a country, taking into account its position in the economic cycle; however, it only looks at each country in isolation, discarding the potential fiscal spill-over effects across countries. Thus, no country, when deciding its own fiscal policy, takes into account the effects of its choices on the other countries, leading to potentially sub-optimal Nash equilibria, particularly in those situations in which fiscal spill-overs are important.

These problems were made painfully clear during the 2011–13 recession. A more coordinated fiscal response would probably have alleviated the hardship of the recession in the crisis-hit countries; but simultaneous fiscal consolidation in all countries, including those that did not need it, made things worse. Figure 2 illustrates this point. The Figure plots the aggregate fiscal stance of the Eurozone (defined as the sum of the variations in structural primary fiscal balances of Euro countries) against the difference between potential and actual output for the area. The Figure illustrates how fiscal policy was strongly pro-cyclical in those years, aggravating the general recession in the area. Indeed, according to estimates by Veld (2013) and Rannenberg et al. (2015), fiscal consolidation in 2011-13 caused a loss in Euro area GDP of between 8% and 20% with respect to a baseline scenario, depending on the countries considered.

Figure 2

Fiscal Stance in the Euro Area



Source: European Fiscal Board (2018). © ifo Institute

These macro-economic failures become even more worrying when one considers the mechanisms in place to cushion economic shocks in the Euro area. The Euro area lacks, or only has to a limited extent, a number of mechanisms that - in other currency unions - smooth the impact of region-specific shocks, reducing consumption less than the fall in GDP, such as: intergovernmental transfers, federal income taxes and private sector risk sharing[3]. Indeed, a number of studies (like Alcidi and Thirion, 2017), that compare the Euro area with the US document that, in the latter, risk sharing is both higher and is accomplished with different means than in the former. Surveying this literature, Milano and Reichlin (2017) conclude that country specific GDP shocks are smoothed by 57% in the USA, but only by 29% in the Eurozone[4]. Not only, but while capital income from cross border asset ownership provides most insurance in the US, in the Eurozone this channel is far more limited (62% versus 24% respectively, according to an old report by the European Commission (2007)). The bulk of insurance in the Euro area comes from the domestic public sector, so it follows that when this is fiscally constrained, insurance can only be limited. Completing the Banking Union and establishing a Capital Market Union will certainly increase the importance of the private sector channel

[1] Except in exceptional cases.

[2] So far, 5 countries have had access to ESM programs, Greece, Ireland, Spain, Portugal and more recently Cyprus.

[3] Even labour mobility across Euro countries, an admittedly long run insurance mechanism, it is much lower – although increasing – in the Eurozone than in other currency unions.

[4] Approximately, this is the ratio of the covariance between growth rates of country-specific consumptions and GDP to the sample variance of GDP growth rates.

in the Euro area. However, this process might take several years. Moreover, some evidence (Furceri and Zdzienicka 2015) suggests that this channel is less effective during severe downturns, when credit markets are constrained. Private sector risk sharing can also turn pro-cyclical in downturns and it is more effective in conjunction with public sector risk sharing (Kalemli-Ozcan et al. 2014).

WHY WE NEED A COMMON FISCAL CAPACITY

Those are the main reasons why, starting with the Five Presidents' Report (2015), academic experts, some Eurozone member governments, the European Commission and many international organizations have all argued in favour of the introduction of a "common fiscal capacity", or a macroeconomic stabilization mechanism for the Euro area. The mechanism should be able to provide fiscal ammunition to support monetary policy in case of large symmetric shocks and provide insurance to member countries in case of asymmetric shocks. The fact that monetary policy is already constrained by the "zero lower bound" in the Eurozone, and it is likely to remain so for a long time, adds some urgency to the proposal.

A question, over which there is still debate between economists and member countries[5] related to the introduction of a "common fiscal capacity", is how important are business cycle shocks for the Euro area and what is the degree of synchronization of member countries' economies. The 2008–09 crisis was certainly exceptional and one could argue that if "normal" shocks in the Euro areas were limited, there was little point in introducing another fiscal instrument beyond what national governments and common monetary policy can already achieve. However, data analysis does not seem to confirm this rosy view (EFB 2018). Since early 2000s, the average magnitude of output gap fluctuations in the Euro area has been close to 2% of GDP; and in several cases it has exceeded 3% of GDP. Moreover, aggregate volatility is smaller than fluctuations at a national level. Disparities between member states' output gaps exceeded 2% of GDP in normal times and almost doubled during the crisis. Bilateral cross-country correlation of output gaps is on average close to 60%, but with a great deal of heterogeneity, ranging from zero to 90%, depending on the countries under consideration.

This suggests quite substantial economic reasons for supporting the introduction of a common fiscal capacity in the Euro area. However, there are also political reasons. We live in democracies. Shocks of the magnitude experienced by several Euro countries in the periphery during the recent crisis are bound to create anxiety and revolt in public opinion, in addition to leaving long term scares in these economies. The European Union and the Euro are easy scapegoats for politicians relying on this discontent. Political backlash and reform reversal become a possibility, threatening the survival of the Euro project. Indeed, there is some evidence to show that while Euro countries kept converging, in spite of the crisis, on economic grounds (for example, in the liberalisation of markets and in the quality of their key services), they strongly diverged in citizens' perception of the quality of government and trust in national and European institutions (Bordignon et al. 2018). Some form of European fiscal insurance, reducing the extent of the economic pain of citizens during a heavy crisis, and thus showing that Europe "cares", could be very helpful in reversing these feelings.

SEVERAL PROPOSALS ON THE TABLE

However, even assuming that a common fiscal capacity is desirable, there is still the question of how to introduce it, taking into account all legal, technical and political difficulties, including the need to avoid permanent transfers and potential moral hazard problems. In national countries, fiscal insurance to sub-national governments is provided somewhat automatically by the national budget, through progressive income taxation, national expenditure on public goods and explicit intergovernmental transfer mechanisms. The EU budget cannot play the same role. It is too small, it is not financed by its own fiscal resources, which also implies that it cannot borrow and raise debt to address large shocks, and it is also based on procedural rules that limit flexibility in the use of resources. Finally, it is the budget of the European Union, not of the Euro area. It is not obvious that an EU budget should be used to address a specific problem of the Euro countries, namely the impossibility of devaluating their currency to address asymmetric shocks.

None of these characteristics is likely to change in the near future. The bulk of public expenditure in national countries is accounted for by their social welfare systems, where national political preferences are still too diverse to imagine a larger devolution of competences. This, of course, does not mean that the EU budget should not and could not be revised. On the contrary, there are strong economic arguments for returning some competences to member countries, with the European budget focused more heavily on truly European "public goods"[6]. And relatively large expenditure programmes on some general topics of interest for EU countries (such as infrastructure or digital economy) could provide some form of insurance. But size still matters.

An example is the recent proposal by the EU Commission (May 2018) to use the EU budget to provide some insurance for Euro member countries. The Com-

[5] See Campos et al. (2018) for a recent meta-analysis that summarises the macroeconomic literature on the synchronisation of shocks in the Euro area.

[6] The proposal of the EU Commission for the Multiannual Financial Perspectives in 2020–27 makes some timid steps in this direction, marginally reducing the share of the EU budget going to agriculture and cohesion funds and increasing instead expenditures on security, border controls and defense.

mission advocates the introduction of a European Investment Stabilisation Fund, making loans to support public investments in Euro countries hit by a large crisis, coupled by a grant in the form of interest rate subsidies, which can cover the entire interest payment. But leaving aside other details, the size of the envisaged programme is too small to provide any meaningful support, 30 billion for all Euro countries[7] for the entire period. Loans to countries are also capped, so back of the envelope computations suggest that actual support would probably be less than 0.1% of GDP in the entire period. Clearly, this is not enough.

Several authors (Ubide 2015, Tabellini 2017, Corsetti et al. 2016) have discussed ways to tackle this problem, namely how to build up a relatively large Euro fiscal capacity without a large Euro Budget. In the present context, these ideas sound as political science fiction, but it is worth recalling that a solution could be found if there were enough political will. The general idea is to set up a system where countries commit to transfer part of their fiscal resources (like 1% of GDP[8]) for a long period of time (such as 50 years) to a Euro Fiscal Authority (the Euro Minister of Treasury? A reformed ESM?). Out of these committed future payments, the Fiscal Authority would issue bonds (generally called stability bonds). In normal times, these bonds would just be given back to member countries in proportion to their payments and could be used by countries to substitute national bonds. In exceptional times, the Fiscal Authority could use these stability bonds to support the economy of the Euro area through general expenditure programs; or to help countries hit by particularly strong negative shocks. Of course, the Fiscal Authority should be governed by Euro member countries, with rules less stringent than unanimity, and being made accountable to the Euro-Parliament to maintain democratic legitimacy.

This proposal would kill several birds with one stone. Once a sufficient amount of stability bonds had been issued, they would become the "safe-bond" that is generally argued is needed to anchor the Eurozone financial systems and complete both the Banking and Capital Markets Unions. National banks and other financial institutions would hold them and the ECB could use them for its open market operations. This would ease the "doom loop" problem, the excess holdings of domestic public debt by national banks. Lacking the potential support of the ECB, national debt would also become riskier, imposing a higher marginal cost on high debt countries, thus strengthening market discipline.

The problem with this proposal is that in order to eliminate moral hazard effects, the Fiscal Authority would need more incisive powers over the budget choices of member countries. The Fiscal authority should not only be in charge of fiscal surveillance of member countries, implementing the SGP, but it should also have the power to veto ex ante the budget law of a member country if the latter violates the EU rules. This would ensure the more financially sound countries that the risk sharing that they implicitly provide, would not be wasted by the irresponsible behaviour of other member countries. However, no Euro country seems to be willing to consider this passage: sovereignty in fiscal matters is still perceived as too central for the national authorities' role, to give it up to a federal body. More generally, this refusal reflects the fundamental problem of the EMU: the lack of a political union, or of a federal body with sufficient resources and democratic legitimacy to back the monetary union when needed.

Given this political deadlock, the other solutions on the table are just pale versions of the proposal discussed above and are very probably less effective. A widely discussed option is to enlarge the tasks of the ESM, allowing it to intervene even before a country has lost access to financial markets[9]. As is the case with the International Monetary Fund, the ESM could provide precautionary credit lines and short-term loans based on ex ante (but not ex post) conditionality to countries that have temporary difficulties in accessing financial markets. This may prevent a full-blown financial crisis from occurring; and improve financial integration across Euro member countries as a result. Ex ante conditionality (such as the respect of the SGP) would also provide better incentives for policy setting by governments. However, the effectiveness of this proposal depends heavily on its design. The experience of the IMF with similar programmes is not very encouraging. Countries typically do not apply to these programmes, because they are afraid that applying might send a negative signal to markets, precipitating rather than averting a crisis. Moreover, enlarging the role of the ESM would probably require a deep reform of its governance system, overcoming the unanimity rule. While several proposals are on the table, including one by the Commission itself[10], the positions of member countries differ too substantially on this issue to predict a rapid solution.

A second set of proposals (not necessarily alternative to the first one) focus instead on the idea of setting up a "rainy day fund". In normal times, Euro countries would transfer resources to a European body (the ESM? The EU budget? Another specific budget for the Euro area?); and in bad times, the fund would support countries in difficulty. The annual payment by each country to the fund would be very low (depending on the proposal, about 0.1-0.3% of GDP) and contributions from the fund (or at least, in some proposals, the part in excess of the cumulated contribution by each single

7 Plus Denmark, although it is no clear why.

8 Some suggest these fiscal resources could come from the seignorage that is paid by the Eurosystem to national treasuries.

9 This hypothesis is usually associated with the proposal of transforming the ESM into a European Monetary Fund, but it is not obvious why. In fact, the ESM already has two of these types of facilities, the precautionary conditioned credit line and the enhanced condition credit line, none of which has ever been used by member countries. The proposals typically suggest revising these two tools and making them more user-friendly in order to incentivize their use.

10 See the December 2017 proposal of the Commission (2017).

country) would be conditional to the respect of fiscal rules (that is, there would be ex ante conditionality). Total payments to the fund could also be capped at some level, that is: the fund might not receive further contributions, when they reach some predetermined level of Euro countries' GDP. To avoid moral hazard and the transformation of support from the fund into permanent contributions from other countries, one might also think of other mechanisms, such as a cap on the maximal level a country can receive from the fund, increased contributions by countries that more often receive resources from the fund. The general idea is that the fund should provide some insurance against large shocks and, at the same time, give the correct incentives to member countries. These would come from ex ante conditionality (the respect of fiscal rules), but also by the fact that financing the fund in good times means forcing fiscal policy to be less pro-cyclical than it usually is in these periods, as some money would be subtracted from a country treasury.

The many proposals on the table (like, for instance, EU Commission 2017, Beblavý and Karolien 2017, Bénassy-Quéré et al. 2018, Arnold et al. 2018, Carnot et. al. 2017) differ greatly from each other along several dimensions. 1) In terms of the expected size of the fund. 2) In terms of the "trigger" mechanism allowing access to the fund, and specifically whether it would be automatically activated on the basis of economic indicators, or based on some technical assessment and discretionary decision. 3) In terms of whether the fund should aim to cover only asymmetric or also symmetric shocks. 4) In terms of whether the fund could borrow (out of expected future payments) in cases where it had not yet accumulated enough resources to play its role once a crisis hit. 5) In terms of whether the fund should aim to cover only large shocks or relatively smaller ones. 6) Finally, they differ in terms of whether the fund's resources could be freely used by a country; or only used to finance some particular type of expenditure (such as unemployment benefits or infrastructures). All of these issues would require a lengthy discussion; indeed an entire chapter of the June 2018 Report (EFB 2018) of the European Fiscal Board (to which one of the authors of this paper contributed) is devoted to these questions. Let us briefly summarise the report's main conclusions.

Firstly, size is important. The IMF (see Arnold et al. 2018) estimates that somewhere between 1 to 2% of the GDP of a country hit by a large recession (as witnessed during the recent financial crisis) would be needed to provide relief ex post and proper incentives ex ante. As yearly contributions to the fund are supposed to be very small (for both political and practical reasons, as they are not returned to countries in normal times), this implies that, if the fund is not allowed to borrow, it would take a very long time to accumulate enough resources for it to be of any use. Secondly, as the main important shocks in the Euro area are symmetric, and we already had evidence of sub-optimal fiscal policy in the presence of a large symmetric shock, it would not make much sense to limit the fund to just addressing asymmetrical shocks. Thirdly, as there are already several lines of defence at the national level against a downturn, the fund should really only be activated in the presence of a relatively large shock. Fourthly, automaticity has its merits, both for a timely response and on political grounds. But the long list of criteria that have been proposed in the literature as potential trigger mechanisms for the activation of the fund (variations of GDP and/or unemployment with respect to a trend, output gap measures, current balances, etc.) all have their limits, given the well-known difficulty of assessing the condition of an economy in real time. It is difficult to avoid the conclusion that some kind of in-depth technical analysis is needed to establish if the conditions for triggering the fund are satisfied, leaving it to politics to take the final decision. Fifthly, ex ante conditionality, in terms of respecting the rules, it is hard to establish with the present overly complex system of fiscal surveillance. A simplification of the rules (as proposed by several bodies, including the Commission and the EFB itself) would make it much easier to enforce the mechanism and induce correct incentives on governments. Sixthly, there are strong arguments for conditioning resources from the fund to finance only some specific components of public expenditure. There is an over-whelming body of evidence showing that during a crisis, fiscal consolidation is typically obtained by sacrificing mostly investment and capital expenditure. Indeed, public investments in the Euro area have been slashed dramatically as a result of the crisis and are still way below their pre-crisis level. This was a bad move, both because fiscal multipliers are typically higher for capital expenditure than current expenditure, and because cutting capital expenditure means reducing future growth.

CONCLUDING REMARKS

The European monetary union needs some urgent reforms to thrive. Completing the Banking Union and starting with a Capital Markets Union are surely priority projects. But fiscal policy also deserves consideration. Fiscal brakes are important, particularly in a currency union, but they are not a tool for macroeconomic management; and coordination of the fiscal policies of otherwise completely autonomous countries has proved to be a chimera. Some centrally-managed macro-economic mechanism is needed to increase risk resilience in an otherwise poorly-equipped monetary union. Large mechanisms that would make the EMU more similar to other monetary unions and national states are technically possible, but probably unrealistic at the current political juncture. But some intermediate mechanisms, such as a common fiscal capacity, could be introduced. If correctly managed, such a mechanism would also provide strong incentives for risk reduction, strengthening the monetary union.

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David R. Agrawal and Dirk Foremny

Fiscal Decentralisation and Mobility: Evidence from Spain's Income Tax System[1]

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INTRODUCTION

In recent decades, many countries around the world have become more fiscally decentralised. Spain provides a unique case study given it has relatively quickly transitioned from a highly centralised country to a much more decentralised country, although formally not a federation. As part of this decentralisation, autonomy over individual income tax rates and brackets was recently granted to the regions (Autonomous Communities), which are similar to states or provinces in other countries. In the early 2000s, individual income tax brackets and rates were the purview of the central government. Only recently were the Spanish regions granted the authority to levy their own individual income tax rates on a portion of the personal income tax base. Once granted this authority, marginal tax rates diverged substantially at the top of the income distribution, resulting in substantial tax differentials across various regions within Spain. This article reviews the economic consequences of Spanish fiscal decentralisation with a particular focus on the impact on the mobility of high-income individuals and the implications of migration decisions for public finances.

Fiscal decentralisations around the world have occurred against the backdrop of widening income inequality in many countries. In the Spanish case, recent trends in income inequality have been strongly countercyclical, with inequality increasing substantially in the recent recession (Bonhomme and Hospido 2017). These increases in income inequality raise policy relevant questions concerning the appropriate level of government to engage in redistribution and the optimal degree of progressivity of individual income taxation. Indeed, in the presence of decentralisation, different regional governments may reach different policy conclusions due to different ideological or philosophical viewpoints. Most fiscally decentralised countries – including Canada and the United States – vary in the progressivity of the tax codes across regions due to some regions selecting relatively flat tax systems, while others adopt progressive systems with high marginal tax rates on top income earners.

Spain's fiscal decentralisation of the tax system raises important issues long debated in economics. In the Fiscal Decentralisation Theorem, Oates (1972) outlines sufficient conditions for the decentralised provision of public expenditures to be superior to a centralised determination of public spending. However, Musgrave (1959) argues that redistributive policy should remain squarely in the domain of the central government. One critical factor determining which of these views is dominant relates to how mobile individuals are across sub-national jurisdictions in response to the spending and tax policies set by those jurisdictions. Put differently, do the rich flee from high tax states, or are they drawn to them based on the public services and amenities provided? Or are taxes irrelevant to residential decisions?

In this article, we review recent reforms in Spain and the relevant institutions concerning Spain's recent decentralisation of individual income taxes. As a part of this exercise, we document the degree to which various regions reduce earnings inequality due to the heterogeneous patterns of tax changes that emerged following fiscal decentralisation. We then summarise the empirical evidence of the migration response of high-income taxpayers documented in Agrawal and Foremny (2018). In particular, although many factors matter to where individuals decide to live, taxes appear to be an important determinant. However, the gain in tax revenue resulting from the mobility response of individuals due to a region lowering its tax burden, at least in the short run, is much smaller than the loss in revenue from lowering taxes on those individuals that elect to stay. We provide new simulations in this paper that show how large the tax revenue response is, following a region raising or lowering top marginal tax rates by one percentage point; regions raising taxes see a substantial increase in revenue, even in the presence of a net outflow of individuals from their region.

SUB-NATIONAL INCOME TAXATION AROUND THE WORLD

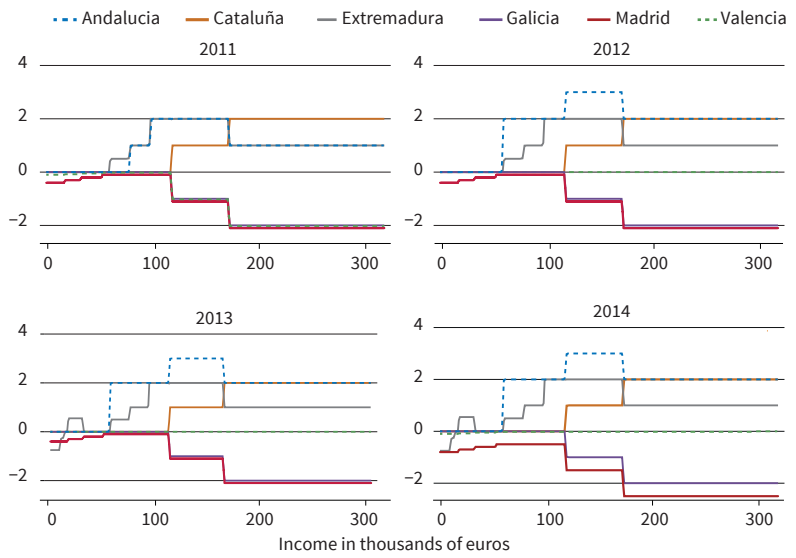
Only some countries have decentralised portions of the personal income tax. Taxation of the personal income tax base is a means of generating revenues that many central governments reserve for themselves. However, even in cases where personal income tax revenues are shared with sub-national jurisdictions through redistributive grants, such as personal income taxation in Germany with the Länder, most countries reserve the right to set important parameters such as tax rates and tax brackets to the central government. The personal income tax is also a tool for governments to intervene with respect to the income distribution, but the mobility of individuals might constitute a constraint on the ability of sub-national jurisdictions to engage in progressive redistribution. Countries that allow for local

[1] This article discusses the relevant intuitions, summarises some of the key results in "Relocation of the Rich: Migration in Response to Top Tax Rate Changes from Spanish Reforms" (Agrawal and Foremny 2018), and presents new results on mobility and inequality. We thank Montse Bassols Santamaria and Antoni Castells i Oliveres for helpful discussions. Foremny acknowledges funding from Fundación Ramón Areces for this paper and the original research summarized in this article.

income taxation at the municipal level tend to permit only a local surcharge in the form of a flat tax that is not progressive. This, among others, is the prevailing system in Nordic Countries such as Denmark, Norway, Sweden and Finland. The autonomy to set progressive region- or state-level taxes is mostly reserved to federations, such as Switzerland, the United States and Canada[2]; and even then, some states in these countries elect to levy flat or relatively flat marginal tax rate schemes. However, de-jure not being a federation, Spain has recently implemented a similar system granting substantial autonomy to the regions. The share of taxes, as a fraction of total revenue, over which regions have a direct impact by setting their own tax rates increased from 3% in 1995 to around 30% in 2012.

Figure 1

Regional MTR
Mtr relative to central mtr in percentage points (2011-2014)



Note: This figure shows regional tax rate changes for a selection of Autonomous Communities relative to the central government tax rate.
Source: Authors' calculations.

INSTITUTIONAL DETAILS OF RECENT SPANISH REFORMS

Since the ratification of the Spanish Constitution in 1978, Spain has been divided into seventeen regions, the Autonomous Communities (Comunidades Autónomas). The regions have a substantial degree of heterogeneity with respect to culture, history and language. To account for those differences, Spain opted for a system of asymmetric fiscal decentralisation. This implies that autonomy over spending and revenues varies across different regions. Historically, on the revenue side, an important difference is between País Vasco (Basque Country or Euskadi in Basque language) and Navarra (Navarre or Nafarroa) and the remaining regions. Those two regions have almost complete tax autonomy to levy taxes within their territory, while for the remaining 15 regions, taxes were initially much more centralised. Until recently, marginal income tax rates and tax brackets were determined by the central government. Partial autonomy was granted to the regions in 1997, but the regions mainly had focused on setting specific tax credits (Durán and Esteller 2005; Durán and Esteller 2006). In the 2000s, however, several waves of decentralisation granted growing autonomy over income taxes to the regions. The most important of these fiscal decentralisations occurred in 2009-2010, with the laws going into effect in the fiscal year 2011. As a result of this, regions can autonomously tax 50% of the personal income tax base.

Immediately following this reform, the personal income tax became an important tax instrument for the regions, as it generated 23% of total regional revenues in 2011. This was partially due to the reforms, allowing the regions to keep the revenues collected from half of the entire tax base in their territory. In addition, regions were also given the right to introduce new tax brackets on top of those implemented by the central government over which they could select their own regional marginal tax rates on income. Thus, as of today, regions have the ability to set tax brackets and marginal tax rates on their half of the personal income tax base in addition to levying region-specific credits. A diverse picture of different tax schedules across regions emerged immediately in 2011: several regions increased marginal tax rates substantially, while others lowered them relative to the central government benchmark.

Three reasons, which probably interact with each other, drive the divergence of tax rates across Autonomous Communities. Firstly, generating additional revenues was one of the main reasons for some regions to increase tax rates. This was an important driver for Autonomous Communities in which budgets were hit substantially by the Great Recession around the time of the reform. Rising deficits forced those regions to intervene and regional governments used the personal income tax (along with the inheritance and wealth tax[3]) to increase revenues. Secondly, political motives were at force. These motives are two dimensional. Some regions enacted strategic policies such as lower tax rates to become attractive places in terms of the business environment. Furthermore, ideology plays an important role here. Simple correlations indicate that

2 Canada recently allowed provinces to set marginal tax rates and brackets following reforms (Milligan and Smart 2017).

3 Regions recently also received partial autonomy over wealth and inheritance taxes.

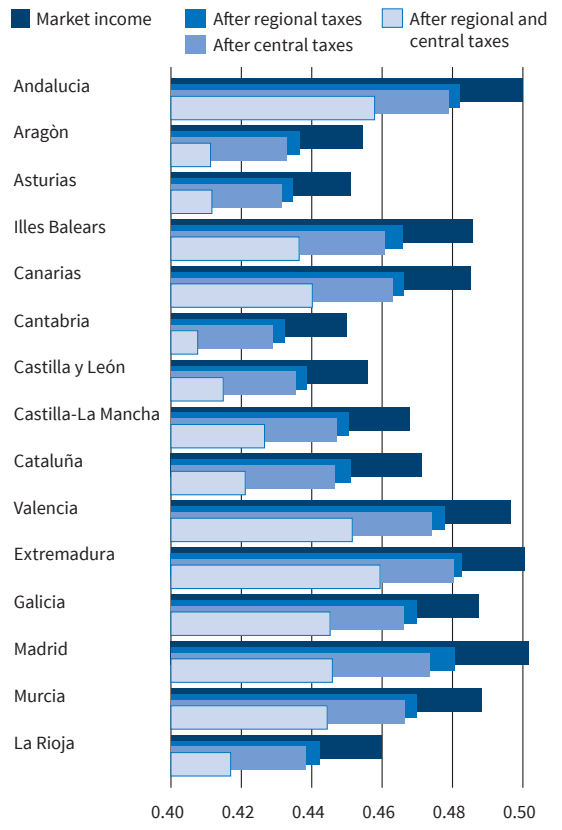
right-of-center governments are more likely to set lower tax rates than left-of-center governments. Thirdly, macro-economic objectives such as redistribution and fiscal policy played a role.

Figure 1 shows the difference between regional marginal tax rates and the central government tax rate at various points of the income distribution (on the horizontal axis) across regions (different lines) and across time (in the different sub-figures).[4] Thus, zero indicates that the region set the same tax rate as the central government, while positive [negative] values indicate the region raised [lowered] tax rates relative to the central government. The red vertical line indicates the top percentile of the income distribution in each year. Several interesting stylised facts can be observed from this figure. Firstly, the Comunidad de Madrid and Cataluña (Catalonia or Catalunya in Catalan) are the regions with the lowest and highest top marginal tax rate throughout this period, but this tax rate only applied to a very small fraction of taxpayers at the very top of the income distribution range. This can be well explained by the arguments presented above. Madrid was governed by the conservative party and faced less budgetary problems compared to the left-of-center governed region of Cataluña. The difference in top marginal tax rates between those two regions was 4% points in 2011 and increased subsequently. Secondly, we observe that the picture generally shows more regional variation over time, indicating that more regions decided to deviate from the central tax schedule and by larger amounts. Thirdly, the figure shows that changes at the beginning of the period were almost exclusively focused on the top of the income distribution. Later, some regions also increased tax rates in the middle of the distribution and, in 2013, regions also started to lower tax rates for the lowest parts of the income distribution, which might have been driven by distributional motives. While the top changes may have been politically motivated to increase revenues, the changes in the lower part of the income distribution may have helped to reduce inequality.

Figure 2 uses individual tax returns released by the Ministry of Finance. These data make it possible to break down the effect of the personal income tax on inequality in 2014. We compute the Gini coefficient – which when zero corresponds to perfect equality and when one corresponds to maximum inequality – at the regional level and compare between market income (before any kind of intervention), net income after regional taxation, net income after central taxation, and net income after both central and regional taxes. These data allow us to do the exact calculations as tax returns are provided. The data include the tax base and exact tax liabilities separated for both layers of government, which accounts for the tax rate schedule and tax credits and deductions applying at the central and regional level. We ignore transfers (such as unemployment benefits and other social programmes) to highlight the distributive effect of the tax system. The Gini based on market income varies from 0.50 in Madrid and Andalucía to 0.45 in more equal regions such as Cantabria. The following two bars indicate the extent to which the Gini is reduced due to regional or national taxation. We observe two important facts. Firstly, the central level intervention always reduces the Gini more than regional level taxation. This is due to deductions and tax credits, which mostly focus on the lower part of the income distribution. While both levels of government can implement deductions, the central government is more generous with them. This partially offsets the potentially more progressive effect of regional marginal tax rates. Secondly, we observe that the difference between the effect of the two levels of government varies across regions. Most interestingly, the regions that also implemented changes in the lower part of the income distribution, such as Andalusia and Extremadura, have a larger impact on the reduction in inequality. However, on average these reductions in inequality by regional tax systems are rather limited; and it seems that the focus of tax changes was politically motivated and driven by budgetary pressure. The Catalan government, for example, increased tax rates with the objective of increasing revenues from this

Figure 2

Inequality Pre-Tax and Post-Tax



Note: This figure shows the Gini for market income before taxes and after taxes by region.
Source: Authors' calculations based on Muestra IRPF IEF–AEAT (Declarantes) 2014.

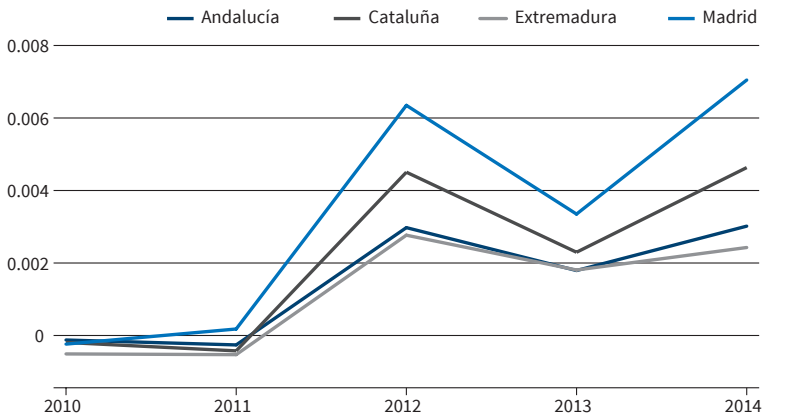
[4] For simplicity, we only show a selected sample of the regions in the figure. See Agrawal and Foremny (2018) for a figure with all regions.

source after regional budgets were under fiscal pressure in the aftermath of the crisis.

Given that marginal tax rates diverged differentially at the top and bottom of the income distribution, it is interesting to look at the previous result over time. To do so, Figure 3 shows the difference in the after-tax Gini accounting for regional taxes and the after-tax Gini accounting for central government taxes between 2010 and 2014 (i.e. the difference between the second and third bar of the previous graph). For simplicity's sake, we present four regions, Madrid and Cataluña and Andalusia and Extremadura because two of those regions had the largest variation at the lower part of the income distribution. Following the reforms, the Gini is higher after accounting for regional taxes than after accounting for central taxes only. However, variation across the regions widens marginally over time and indicates the different roles of progressive taxation. Compared to the effect of central government taxes on the Gini, Madrid, which lowered its tax rates, has a regional tax system that reduces inequality less than Cataluña, which raised its tax rates. The other two regions in this graph are those that implemented interesting changes in the middle and the bottom of the income distribution (see Figure 1). Figure 3 shows that the regional impact of those two regions has been larger than in the other ones, pushing the regional Gini closer to the central government. However, these changes remain relatively small. For example, by 2014, the difference in Extremadura was 0.5% of the after-tax Gini while in Madrid it was 1.5% of the after-tax Gini. These differences in the regional effect on the Gini coefficient depend on the tax rates selected by the regions, the credits and deductions adopted by the regions, and the initial distribution of income.

Figure 3

Difference in Inequality After Regional and Central Government Taxes



Note: This figure shows the Gini for income after regional taxes minus the Gini after central government taxes for four regions.
Source: Authors' calculations based on Muestra IRPF IEF–AEAT (Declarantes) 2010-2014. © ifo Institute

POTENTIAL REVENUE EFFECTS OF SPANISH DECENTRALISATION

As mentioned previously, one reason why some regions opted for higher or lower tax rates was the Great Recession and increasing revenue needs. Fiscal decentralisation of taxation authority may result in numerous potential responses, which eventually affect tax revenues. Firstly, regions raising taxes see higher revenues on their existing tax base. This effect is potentially offset by behavioural responses. In regions increasing marginal tax rates, individuals may reduce labour supply or find more creative ways to engage in tax avoidance. Thus, given the large body of literature on taxable income responses, we would expect these regions to see declines in reported taxable income. A final response involves the location of individuals following decentralised tax changes. All else equal, an increase in the tax rate in one region might spur migration from high-tax tax regions to relatively low-tax regions. This response, combined with taxable income responses, suggests that the tax base will shrink in regions that raise their taxes relative to those regions that lower their taxes. Ignoring fiscal externalities and effects of tax competition, following Piketty and Saez (2013), we can decompose the effect of changes in taxes into these three components:

1. **A mechanical effect.** This is the change in tax revenue that would occur on the existing tax base if there were no behavioural responses (changes in earnings or residences) in response to the tax change.
2. **A taxable income effect.** This is the change in tax revenue resulting from distortions to the amount of taxable income individuals declare, which, for example, could change as a result of earnings (labour supply) responses.
3. **A migration effect.** This is the change in tax revenue realised by any one region because of a switch in the residential location decisions of taxpayers from one region to another.

It is worth noting that the last two effects may include real and non-real responses. By this we mean, for example, that some individuals may not actually move across regions, but rather might "falsely" declare a primary residence as a second home in order to reduce tax liability. Taxable income responses may also capture avoidance or evasion opportunities.

It follows that if the mechanical effect dominates the two behavioural effects, governments can increase revenue from raising taxes. The last two effects depend critically on the elasticity of taxable income and the elasticity of the stock of the population, respectively. In

the absence of migration effects, only the elasticity of taxable income is relevant. The empirical evidence, although varying substantially, suggests that taxable income effects are relatively small (Saez, Slemrod and Giertz 2012), which allows governments to sustain potentially high top marginal tax rates. However, it remains an open question: How large are migration effects in Spain when taxes are decentralized and what are the implications for tax revenue?

EVIDENCE ON MIGRATION

Against that backdrop, Agrawal and Foremny (2018) document the migration responses of individuals in the top 1% of the income distribution in response to the fiscal decentralisation of part of the personal income tax base to the regions. The effects of such a massive decentralisation remain unknown as yet, given that much of the prior literature on migration has focused on cross-country tax variation for a selected group of industries or occupations (Kleven, Landais and Saez 2013; Akcigit, Baslandze, and Stantcheva 2016) and the effect of changes to already existing state taxes on migration (Young and Varner 2011; Young, Varner, Lurie and Prisinzano 2016; Moretti and Wilson 2017). Some of these state tax systems have partially employment-based taxation rather than residence-based taxation, so that mobility, especially within a local metropolitan area, may occur through employment rather than residence shifts (Agrawal and Hoyt 2018). Spain's tax system is entirely residence-based, facilitating identification of any migration elasticity.

To study migration of high-income households, Agrawal and Foremny (2018) use administrative data from Social Security and tax records from Spain's Continuous Sample of Employment Histories (Muestra Continua de Vidas Laborales), which contains information on income, residential location, and industry and occupation. These income data are then inputs to a tax calculator to determine the average and marginal tax rate each individual would face for all regions within Spain. Using this information, Agrawal and Foremny (2018) show that a 1% increase in the net-of-average-tax rate for a region relative to others increases the probability of moving to that region by 1.7 percentage points. This implies, for example, that when Madrid cut taxes by 0.4 percentage points for top earners, the probability of moving to Madrid increased by 1.1 percentage points. The elasticity of the stock of top taxpayers in a given region is approximately 0.85. Using these estimates, Agrawal and Foremny (2018) show that, under certain assumptions, the mean tax change on top earners in each region results in a mechanical effect that is larger than both behavioural effects combined (taxable income and mobility). The revenue simulations in Agrawal and Foremny (2018) have different revenue changes for different regions partly because the sizes of the tax changes are different.

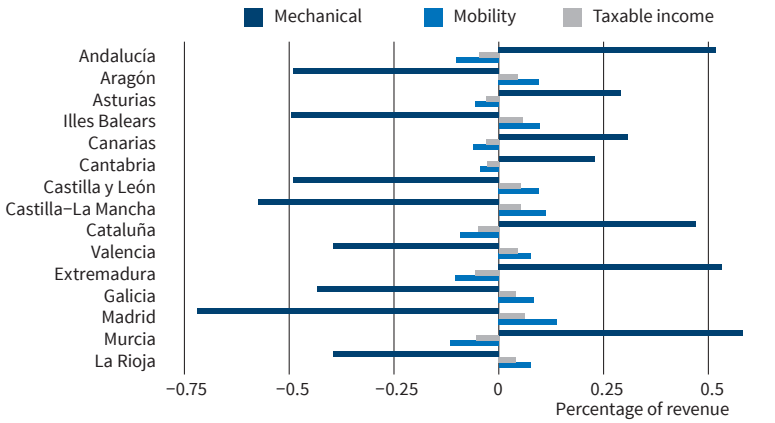
Here we extend this analysis to focus on the case where all regions change their tax rates on top earners by the same magnitude, but in opposite directions. In particular, we focus on a one percentage point change in the marginal tax rate on income above 90,000 euros. For the purpose of these simulations, we assume that the seven regions that raised their tax rates relative to the central government by 2014 only raised the marginal tax rate on income above 90,000 euros by one percentage point. On the other hand, we assume that the seven regions that lowered or maintained[5] their tax rates by 2014 relative to the central government, only lowered the marginal tax rate on income above 90,000 euros by one percentage point. Given the magnitudes of the tax changes are identical in all of the regions, the mechanical effect will differ because the existing stock of top taxpayers and the average amount of income above this bracket threshold vary by region. The taxable income response additionally depends on the elasticity of taxable income and the shape of the distribution of income (the Pareto parameter). The mobility response depends on the estimates of the stock elasticity, as well as those factors in the mechanical effect.

Figure 4 presents the simulation results for a one percentage point change in the marginal tax rate on income above 90,000 euros. Consider the case of Madrid. Madrid lowered its tax rates, so we consider a one percentage point decline in their top marginal rates. Using the random sample of Social Security data,

5 Valencia was the one region that mimicked the central government tax rates in the years immediately following the reform.

Figure 4

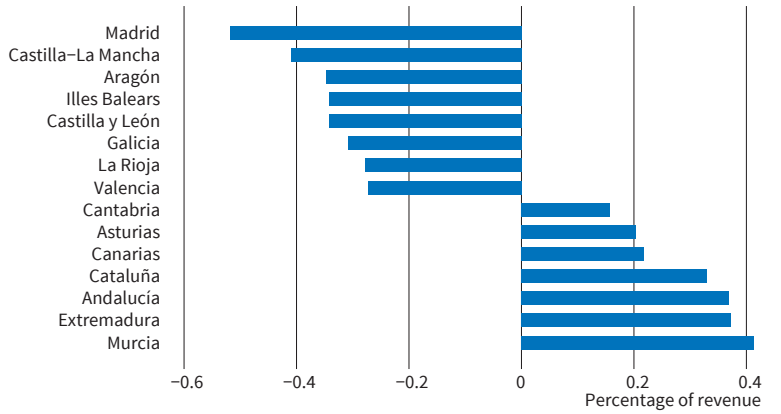
Simulated Changes in Tax Revenue by Mechanism



Note: We show the mechanical, taxable income and mobility responses, as a percentage of total personal income tax revenue, for a percentage point change in tax rates above 90,000 euros. Regions with positive mechanical effects are assumed to have increased taxes, while regions with negative mechanical effects are assumed to have decreased taxes.
Source: Authors' calculations.

Figure 5

Simulated Total Change in Tax Revenue



Note: We show the total revenue change, as a percentage of total personal income tax revenue, for a percentage point change in tax rates above 90,000 euros. Regions Madrid to Valencia are assumed to have decreased taxes, while regions Cantabria to Murcia are assumed to have increased taxes.
Source: Authors' calculations.

we can determine that there are approximately 75,000 individuals in the top 1% residing in Madrid with an average income of 171,000 euros (therefore, with 81,000 euros subject to our simulated reform). This yields a mechanical decrease – assuming no individuals change their behaviour – in taxes of approximately 61 million euros. Relative to 8.4 billion euros raised from the personal income tax in Madrid, this is a 0.72% change in revenue, as shown in the Figure. To calculate the taxable income response, we use an elasticity of taxable income slightly below the midpoint in the literature (Saez, Slemrod and Giertz 2012), accounting for the fact that we only study the tax on labour income and not capital income. That, combined with an estimate Pareto parameter of 2.1 and the information above, yields an increase in taxable income, due to, for example, increases in labour supply from the lower tax rates, of five million euros or 0.06% of revenue. The migration response relies on the above information plus the estimates of the stock elasticity in Agrawal and Foremny (2018). This implies a 12 million euro increase in revenue due to the net inflow of top taxpayers to Madrid due to lower tax rates, or 0.14% of tax revenue. As can be seen, the net effect of summing all three effects yields a net revenue loss of approximately 0.5% of total income tax revenues for the region of Madrid from this lower tax rate on top incomes. The total change in revenue as a percentage of income tax revenue is depicted in Figure 5.

In the opposite direction, consider Cataluña, which increased its taxes. Using the same magnitude tax change on income above 90,000 euros as Madrid, but instead increasing taxes, we can compare the revenue effects to Madrid. Cataluña has a smaller number of individuals – approximately 60,000 – in the top 1% and a lower mean income of 152,000 euros for this group (therefore, with 61,000 euros subject to our simulated reform). This yields a mechanical decrease in taxes of approximately 37 million euros. Relative to 7.5 billion euros raised from the personal income tax, this is a 0.48% change in revenue shown in the Figure. The pareto parameter is higher in Cataluña, but the size of the tax base is smaller, and implies a 0.05% decrease (3.7 million euros) in revenue due to declines in reported taxable income. The net outflow of migration due to higher taxes implies a 0.08% decrease in revenue (6.8 million euros). The total increase in revenue due to higher taxes is 0.33%.

As can be seen from these two examples, tax increases result in increases in revenue, while tax decreases result in declines in revenue – even in the presence of mobility. Fiscal decentralisation does not, at least in the short run, appear to pose a threat to revenue-raising capabilities given the magnitudes of these tax changes. The magnitudes of the revenue changes depend upon the elasticity of the population stock, the elasticity of taxable income, as well as characteristics of region size along with its distribution of income.

POLICY IMPLICATIONS AND CONCLUSIONS

Our tax revenue simulations, combined with evidence on inequality after taxes, suggest that regions adjusting their tax rates in the presence of mobility need not threaten progressive redistribution in the short run. Indeed, fiscal decentralisation gives regions the autonomy to shape a tax system consistent with their political ideology and revenue needs. This heterogeneity may be especially important in a country with heterogeneous cultures, languages, and ideologies such as Spain. Furthermore, it helps to reduce fiscal imbalances between central and regional governments, which may have a positive impact on fiscal discipline.

However, this comes with several caveats. Firstly, the asymmetric fiscal decentralisation and higher autonomy in some regions (Basque Country and Navarra) than others create political tensions which, among many others, might be one of the reasons for regions pushing for more autonomy. More regional autonomy through further fiscal decentralisation might be feasible to implement, as migration responses remain moderate. At the same time, this might intensify tax competition between the regions, which even in the existing system created the word "fiscal dumping", for which Madrid in particular was accused. Tax competition may, in turn, place additional constraints on governments, resulting in tax rates that may be inefficiently low. Indeed, the inequality measures presented here suggest that inequality is higher after regional

taxes than after central government taxes; and this may be a result of mobility.

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Wealth and Inheritance Taxation: An Overview and Country Comparison

Although having attracted more attention in recent years, wealth and wealth distributions still play a minor role compared to income distributions in discussions concerning inequalities within and across countries (see, for example, sustainable development goals from the UN[2]; OECD 2015). This article provides an overview of existing data on wealth and wealth taxes around the globe. Firstly, we present data on wealth levels for selected OECD countries and discuss the general difficulties in measuring wealth. Secondly, we investigate the existing net wealth taxation regimes in selected OECD countries. Thirdly, we compare inheritance and gift taxation regimes across the same sample of OECD countries and illustrate that tax regimes differ vastly from one another.

MEASUREMENT DIFFICULTIES

In contrast to income, wealth has proven difficult to be measured for several reasons. Firstly, these data are often well protected, and their usage is restricted to administrative purposes. Secondly, because there is a clear incentive for individuals to record minimised values to reduce tax payments, the data are unable to fully capture tax avoidance and sheltering. Thirdly, some data sources might not be updated regularly. As a result of these inherent difficulties to gather accurate data, annual wealth data can often only rely on estimates (see e.g., Global Wealth Databook 2017; Kopczuk 2015).

Kopczuk (2015) summarizes four approaches to measure the wealth distribution in the case of the US: the capitalization method, household surveys, the estate tax multiplier method, and listings of the wealthiest (e.g., the Forbes 400 list). These approaches differ vastly from each other in terms of data collection method, data sources, and time of introduction. None of these approaches were found to be the ultimate measure to account for wealth levels perfectly. On the contrary, different measures yield diverging wealth estimates (especially from 1980 onwards), and each approach brings along its own set of drawbacks that requires reconciliation. Some of the measures, for instance, do not capture the entire population and may therefore under- or overestimate the underlying wealth stock. Furthermore, the worth of assets that do not generate taxable returns, such as artwork or jewellery, is difficult to value. Sceptics of the survey-based method relegate on the low response rate and the possibility of misreporting. In addition to the drawbacks mentioned by Kopczuk (2015), other factors complicate the measurement of wealth. For one, heterogeneous definitions of wealth consequently impede comparisons World Inequality Report (2018). Moreover, most valuations of wealth include private pension funds while excluding public ones (Global Wealth Report 2017). Therefore, an individual with a privately funded pension system appears statistically wealthier than an individual with comparable pension claims in a country that relies more heavily on a public pension system. The fact that tax avoidances and tax sheltering usually go unrecorded complicates the assessment of true wealth stocks even further – Zucman (2013) and Alstadsæter et al. (2017) suggest that up to 8-10% of households' financial wealth is held in tax havens. Finally, most definitions of wealth exclude non-material assets such as human capital.[3] All these drawbacks suggest that the best results to accurately measure wealth can only be obtained by matching available administrative or national account data while combining multiple data collection approaches.

WEALTH LEVELS

The OECD defines household wealth as the ownership of economic capital. The definition is further classified into "financial assets, non-financial assets and liabilities" (OECD 2015). Financial assets are intangible and include stocks, bonds, bank deposits, and cash. By contrast, non-financial assets, like property or vehicles, are of physical worth. The OECD measures are mainly obtained by combining data from national surveys and statistical records. However, so far not all countries have fully adopted the OECD guidelines to report wealth levels, thus making the OECD wealth data unavailable for certain countries and years.[4]

Following the OECD definition for wealth, the Research Institute of Credit Suisse provides data on worldwide aggregate wealth levels and individual country-level wealth estimates for 171 countries since 2000.[5] Figure 1 shows the annual percentage change in total global wealth from 2001 to 2017. Although global wealth has grown on average by 5.5% per year since 2000, the wealth growth rate has fluctuated considerably. From the early to mid-2000s, global wealth has experienced a sharp uplift due to both strong financial and non-financial (mostly housing) wealth compo-

[1] ifo Institute (all)

[2] See http://www.un.org/sustainabledevelopment/wp-content/uploads/2018/01/16-00055j_Why-it-Matters_Goal10_Equality_new-icon.pdf

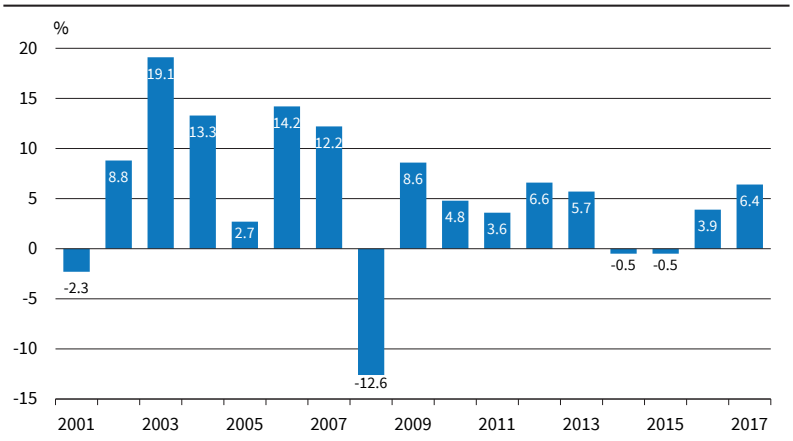
[3] A World Bank analysis suggests that human capital constituted a 64% share of total wealth per capita in 2014 (Worldbank Group 2018).

[4] For more details, see a set of 'Guidelines' for micro statistics on household wealth issued by OECD (OECD 2013).

[5] Data are collected through surveys. In addition, wealth levels are estimated for countries with scarce information. For more details, see: Global Wealth Databook (2017).

Figure 1

Annual Percentage Change in Total Global Wealth, 2001–2017



Source: Credit Suisse Global Wealth Databook (2017). © ifo Institute

nents. The year 2008, however, stands out with a large decline in total global wealth during the financial crisis. After 2008, the world economy gradually recovered, but wealth growth remained below the pre-financial-crisis growth rate. Total global wealth grew by 6.4% from 2016 to mid-2017, amounting to 280 trillion US dollars in mid-2017.

Table 1 shows the increase in total wealth and wealth per adult from 2016 to mid- 2017 for a selected number of OECD countries. Given the size of its wealth stock, the US is the most significant contributor to the rise in total global wealth from 2016 to mid-2017. Europe and China registered growth rates similar to the global figure of 6.4%. In Europe Bulgaria, the Czech Republic, Poland, and Sweden in particular showed notable wealth growth rates. Wealth has also increased in Latin America, but still lagged behind compared to the other regions (3.9%). At less than 1%, wealth grew least in the Asia-pacific region and Africa[6] (Global Wealth Report 2017). Wealth levels decreased in a few countries like Japan, Turkey, Ukraine, and the United Kingdom, showing negative growth rates. Yet the overall wealth increase is mainly driven by financial assets that make up 54% of total global wealth. However, non-financial assets also contribute to recent wealth growth rates to a large extent.[7] When looking at the data on wealth per adult, Switzerland had the wealthiest residents in 2017 with approximately 537,599 US dollars held by an average adult, followed by Australia (402,603 US dollars per adult) and the United States (388,585 US dollars per adult) (Global Wealth Report 2017; World Inequality Report 2018).

WEALTH INEQUALITY

Given the difficulties of measuring wealth, it is hard to estimate precisely the extent to which wealth is distributed within a country. However, studies agree that regardless of the method used, wealth is generally more unequally distributed than income (e.g., Kopczuk 2015 among others). Table 2 illus-

6 Excluding India and China.

7 For a variety of reasons this is even more the case in lower income countries, such as Indonesia and India, where non-financial assets account for more than 80% of the wealth share (Global Wealth Databook 2017). One explanation would be that household wealth mainly comprises assets like the household's home and other belongings rather than financial wealth.

Table 1

Country Comparison of Total Wealth Levels and Wealth per Adult

	Total Wealth in USD bn (mid-2017)	Total Wealth Growth 2016 – mid-2017 (%)	Wealth per Adult in USD (mid-2017)	Wealth per Adult Growth (2016 – mid-2017, %)
Australia	7,329	11.0	402,603	9.5
Austria	1,562	8.2	221,456	7.6
Belgium	2,453	7.3	278,139	6.6
Bulgaria	101	11.0	17,394	11.7
Canada	7,407	8.0	259,271	6.8
Czech Republic	440	11.1	51,472	11.0
Denmark	1,245	9.1	281,542	8.3
Finland	686	9.4	159,098	8.9
France	12,969	8.2	263,399	7.7
Germany	13,714	8.3	203,946	7.9
Ireland	853	8.4	248,466	7.8
Italy	10,853	7.0	223,572	7.0
Japan	23,682	-6.2	225,057	-6.1
Luxembourg	141	7.6	313,687	6.6
Netherlands	2,692	2.0	204,045	1.5
New Zealand	1,162	12.8	337,441	11.4
Norway	1,286	6.2	320,475	4.9
Poland	859	18.0	28,057	17.9
Portugal	750	7.0	89,437	7.1
Spain	4,845	8.7	129,578	8.7
Sweden	1,994	12.7	260,667	11.9
Switzerland	3,630	4.0	537,599	3.0
Turkey	1,068	-6.0	20,061	-7.9
Ukraine	43	-4.4	1,224	-2.6
United Kingdom	14,073	-0.2	278,038	-0.9
United States	93,560	10.1	388,585	9.0

Source: Authors' calculations based on World Inequality Report (2017).

Table 2

Wealth Shares across Countries, 2017

Country	Wealth decile										Top
	1	2	3	4	5	6	7	8	9	10	1%
Wealth shares (%)											
Australia	0.2	0.8	1.6	2.8	4.1	5.8	7.8	10.2	14.5	52.3	22.9
Austria	-0.6	0.1	0.4	0.8	1.8	3.7	5.9	8.7	13.6	65.7	31.1
Belgium	-0.1	0.2	1.2	3.1	5	6.7	8.8	11.5	16.3	47.2	17.5
Canada	-0.2	0.1	0.5	1.4	2.7	4.5	6.9	10.1	15.6	58.5	26.1
Czech Republic	1	1.8	2.5	3.1	4.1	4.9	5.9	7.6	11.6	57.6	30.6
Denmark	-1.9	-0.1	0.4	1.2	2.5	3.8	5.5	8	12.5	68.3	33.2
Finland	-0.8	0	0.3	1.2	2.8	4.5	6.4	9.1	13.9	62.7	31.3
France	-0.2	0.1	0.4	1.3	3.4	5.8	8.2	11.1	16.2	53.7	21.6
Germany	-0.5	0.1	0.3	0.8	1.7	3.2	5.5	9.2	14.6	65.2	32.3
Ireland	-2.5	-0.1	0.2	0.9	2.6	4.2	6.1	8.5	14.3	65.8	33.1
Italy	-0.1	0.2	0.8	2.8	4.8	6.4	8.2	10.6	15.2	51.2	21.5
Japan	0.3	0.8	1.7	3	4.7	6.4	8.8	11.7	17.5	45.2	14.6
Netherlands	-2.6	0.1	0.7	1.9	3.7	5.7	8.4	11.5	16.4	54.3	22.3
New Zealand	-0.9	0	0.9	1.7	3.4	5.1	6.8	10.2	16.3	56.5	23.8
Norway	-3.6	-0.3	0.2	1.4	3.1	5.1	7.1	9.8	14.4	62.9	30.6
Poland	0.6	1.3	1.8	2.5	3.2	4	5	6.6	10.1	65	39.2
Portugal	-0.2	0.2	1.1	2.4	3.6	5	6.7	9.3	13.4	58.5	28.2
Spain	0.1	0.4	1.8	3.6	4.4	5.6	7.3	9.5	13.6	53.8	25.1
Sweden	0.1	0.3	0.6	1	1.4	2.1	3.2	4.9	8.7	77.8	41.9
Switzerland	-0.2	0.9	1.7	2.6	3.5	5.2	6.7	8.4	12.7	58.7	28.9
United Kingdom	-0.8	0.2	0.6	1.4	2.8	4.7	7	10.5	16.4	57.2	24.3
United States	-0.4	-0.2	0.2	0.5	1	2	3.4	5.7	11.2	76.7	38.3

Source: Global Wealth Databook (2017).

trates the unequal distribution of wealth by showing wealth shares held by each wealth decile. In terms of wealth, the world's poorest 10% hold on average -0.4% of the global wealth stock, meaning that liabilities exceed the value of assets of the households concerned. The bottom 90% of the world's wealth holders owns on average a total of 12.2% of the total wealth stock versus an average of 87.8% held by the top 10%. However, in the sample of OECD countries presented, wealth is less unequally distributed. In addition, Table 2 reveals that inequality is higher in some countries than in others. For instance, the top 10% in the US hold 76.7% of US wealth stock. In Canada, on the other hand, the wealthiest 10% only hold 58,5% of Canadian wealth. The distribution of wealth is most equal in Japan (followed by Belgium) in which the top 10% hold less than 50% and the remaining 90% of the population hold 54.9% of the country's total wealth stock.

In most Western countries, wealth inequality fell during the first half of the last century until the 1980s (Alstadsæter et al. 2017). The reasons for the decline are manifold, including the Great Depression, the destruction of capital in the World Wars, capital taxation and changes in rent policies that led to fewer incentives to accumulate wealth, among other things. However, the downward trend stopped in the 1980s and wealth inequality levels have risen again ever since (World Inequality Report 2018; Zucman 2017). Nonetheless, the current levels are still lower than the wealth inequality levels at the beginning of the 20th century (Piketty and Zucman 2014; Jones 2015).

NET WEALTH TAXATION

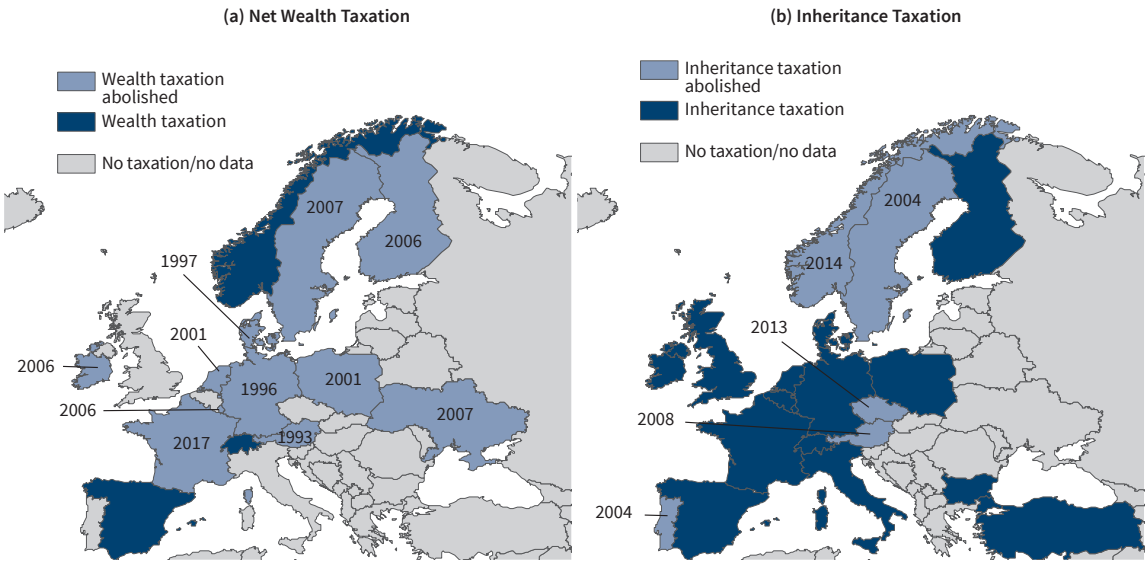
The following section presents selected OECD countries that have net wealth taxes or some measures to tax net wealth in place and countries that abolished their wealth tax regime recently. Net wealth –– or net worth –– refers to the total value of equity of a person (household), a company or a government.[8] Wealth taxes differ in how often they are levied and whether they occur on the holding, transfer, or appreciation of financial and non-financial assets. While taxes on net wealth accrue periodically (usually annually), transfer taxes are levied when a gift transfer occurs – or as in the case of inheritance taxes just once in a generation (Brülhart 2016). Like income taxes, wealth taxes can be progressive with the tax rate increasing along with the amount to be taxed.

The current worldwide trend leans towards abolishing net wealth taxes. While 15 years ago, ten of the 26 OECD economies mentioned in this article incorporated net wealth taxes, there are only three of them doing so nowadays: Switzerland, Norway, and Spain. In a recent tax reform, France abolished net wealth taxation from its taxation spectrum. Meanwhile, Italy and the Netherlands have some elements in their tax system that go beyond income or inheritance taxation, but do not tax an entity's net wealth per se. Around half of the OECD

[8] This article focuses individual net wealth taxes only.

Figure 2

Net Wealth and Inheritance Taxation in Europe, 2017/2018



Note: The year marks the date of abolition of the tax.
Source: Authors' compilation of various sources (2018).

countries have never implemented net wealth taxation, and 13 countries in total abolished it in the past three decades.

Among the countries employing a levy on net wealth (Switzerland, Spain, Norway), the share derived from net wealth taxes in 2016 was largest in Switzerland with 3.7% of total tax revenue (OECD Revenue Statistics 2018). In Switzerland, the taxation system is organised de-centrally and hence enables tax competition between cantons. Worldwide assets of private individuals are subject to the tax, and taxes are levied in the canton or commune in which the individual's tax residence lies. The tax-free threshold ranges, depending on the canton, from 50,000 Swiss francs to 250,000 Swiss francs (around 59,110 euros to 295,550 euros) for married households without children. The remaining wealth stock is then taxed progressively at between 0.03% to 1.09% of its value (Eidgenössische Steuerverwaltung (ESTV) 2016).

In Norway, the share from net wealth taxation made up 1.1% of total tax revenue in 2016 (OECD Revenue Statistics 2018). The same tax rates apply throughout the country, but are allocated to different authorities: the majority (0.7%) of the tax is payable to the respective municipality and 0.15% to the central government. Assets subject to taxation include financial assets and housing. The latter constitutes 65% of net wealth according to Statistitcs Norway (2012). The Norwegian net wealth tax rate is linear. Wealth stocks exceeding the tax-free threshold of 1,480,000NK (around 154,000 euros) are taxed at 0.85%.

In Spain, 0.5% of total tax revenues is realized through net wealth taxation (OECD Revenue Statistics 2018). An asset is subject to taxation if an economic value can be attributed to it. As in Switzerland, autonomous regions in Spain hold some authority over both tax allowances and tax rates. The wealth tax is progressive with marginal tax rates ranging from 0.2% to 2.5%. In Spain, net wealth of up to 700,000 euros plus an additional 300,000 euros for housing are tax-exempt. Out of the three countries presented, Spain applies the highest tax-free exemptions. In 2009, the Spanish Government abolished taxes on net wealth, but reinstated this form of taxation on an annual basis from 2011 to 2017. So far, the extension has not been carried out for the year 2018 (El Pais 2018).

Next to the three countries mentioned, other countries have tax regimes in place that tax a part of an individual's or household's wealth stock respectively. France put forward a reform for its wealth taxation that would come into effect in January 2018. While all net worldwide assets above 1.3 million euros were subject

Table 3

Comparison of Net Wealth Taxation across Countries, 2018

Country	Tax regime	Tax-free exemption limit	Tax rate
Switzerland	Progressive	50,000CHF (59,110€) –250,000CHF (295,550€) for married households without children	0.03% to 1.09%
Norway	Linear	1,480,000NK (157,658€)	0.7% to municipality and 0.15% to central government
Spain	Progressive	700,000€ on worldwide assets + 300,000€ on housing	0.2% to 2.5%

Note: Any currency exchanges were conducted using the exchange rate as of the 16th of May 2018.
Source: Authors' compilation of various sources (2018).

to net wealth taxation prior to the reform, the taxation now applies solely to immovable property above the same threshold. Effectively the net wealth tax was replaced by a tax on real property.[9] Additionally, a 30% flat tax on capital income was introduced, replacing prevailing progressive tax rates (service-public.fr 2018). Italy is another example in this context. Until now, Italy does not apply a net wealth tax, but taxes financial assets at 0.2% and properties held abroad at 0.76% (taxing.it 2017). The Netherlands abolished net wealth taxation in 2001 and reformed its prevailing income tax as well. Unlike other countries, the Dutch authorities assume that certain assets will generate an annual yield (1.63% to 5.5%), which is taxed at 30% instead of taxing the effectively realised returns (orangetax.com 2016). Income from savings and investments (excluding liabilities) that exceed a certain tax-free amount (25,000 euros in 2017) is subject to taxation (Belastingdienst.nl 2018). In addition, many exemptions apply, such as when the immovable property is considered an owner-occupied home.

In a number of countries, net wealth taxes have been abolished altogether over time for various reasons (see Figure 2a). Austria, for example, abolished the wealth tax in 1993 mainly due to the high administrative costs that accrued in the data collection process and because of the economic burden the wealth tax meant to Austrian enterprises.[10] Denmark used to apply some of the highest marginal tax rates, but the country abolished the tax scheme in the 1990s after gradually reducing it in the preceding years (Jakobsen et al. 2018). Germany abolished its net wealth tax in 1997 after it was deemed unconstitutional by the Federal Constitutional Court in 1995. The Court ruled the tax's discrimination of property and financial assets to be an infringement against the fiscal principle of tax equality (BVerfG 1995). The wealth tax was soon abolished altogether. One evident reason was the comparatively small tax revenue that it yielded (only 0.8% of total tax revenues) and the weak enforcement given the high administrative costs of implementing it (Gruener 1996).

INHERITANCE TAXATION

Taxation of inheritance is more widely regarded as a more popular mechanism to reduce wealth inequality in industrialized countries. While taxes on net wealth accrue periodically (usually annually), transfer taxes are levied when a gift transfer occurs – or as in the case of inheritance taxes just once in a generation (Brülhart 2016). Transfer taxes are assessed on transferred taxable assets from one person to another (Rudnick and Gordon 1996) and can be further distinguished by whether they are levied on the receiver or the benefactor.[11] As shown in Figure 2b, 17 of the 26 OECD countries studied in this article tax inheritances, while only nine do not (Australia, Austria, Canada, Czech Republic, New Zealand, Norway, Portugal, Sweden, Ukraine and United States). In the following, we compare the inheritance tax regimes of the 17 OECD countries that tax inheritance.

Table 4

Estate, Inheritance and Gift Tax Revenue as well as Total Tax Revenue as % of GDP, 2016

Country	Tax revenue as % of GDP: Net wealth	Tax revenue as % of GDP: Estate, inheritance and gift taxes	Total tax revenue as % of GDP
Australia		0.0	28.2
Austria		0.0	42.7
Belgium		0.7	44.2
Canada		0.0	31.7
Czech Republic		0.0	34.0
Denmark		0.2	45.9
Finland		0.2	44.1
France	(0.2)*	0.6	45.3
Germany		0.2	37.6
Ireland		0.2	23.0
Italy		0.0	42.9
Japan		0.4	30.7
Luxembourg		0.2	37.1
Netherlands		0.3	38.8
New Zealand		0.0	32.1
Norway	0.4	0.0	38.0
Poland		0.0	33.6
Portugal		0.0	34.4
Spain	0.2	0.2	33.5
Sweden		0.0	44.1
Switzerland	1	0.2	27.8
Turkey		0.0	25.5
United Kingdom		0.3	33.2
United States		0.1	26.0

Note: * Net wealth taxation was abolished in 2017/2018.
Source: OECD Revenue Statistics (2018); 4210 for net wealth tax and 4300 for estate, inheritance and gift tax.

The revenue from inheritance and gift taxation as a share of GDP (%) is shown in Table 4. In general, revenue from inheritance taxation only accounts for a small portion of the total tax revenues. The total tax revenue as a share of GDP ranges between 26.0% in the US and 45.9% in Denmark. Estate, inheritance, and gift tax combined only made up a maximum of 0.7% of GDP in Belgium. On average, among OECD countries, these joint taxes make up 0.1% of GDP, while total tax revenue accounts for 34.3%.

Within the group of countries taxing inheritance, differences between taxation systems can be categorized according to the following characteristics: the tax regime (fixed or progressive), the different tax classes (distance to heir), the marginal tax rates, and the levels of exemptions. Table 5 gives an overview of the current

[9] There are a number of OECD countries taxing property and/or other forms of estate, such as land and vehicles (e.g., Ukraine, some states in the US, Denmark, Turkey). However, such tax mechanisms go beyond the scope of this article and are therefore not mentioned in greater detail.

[10] For more details, see "Vermögenssteuer" - report by Wirtschaftskammer Österreich (Eberhartinger, Past and Morozov 2013).

[11] The descriptive summary of the international tax regimes focuses on inheritance taxation. Hence, in countries where inheritances and gifts are taxed differently gift taxation is not examined in detail.

Table 5

Comparison of Inheritance Taxation in Selected OECD Countries 2017/2018

Inheritance Taxation (Marginal Tax Rates in %)

Country	Tax regime	Tax classes	€ 50,000	€ 100,000	€ 250,000	€ 500,000	€ 1,000,000	€ 5,000,000	€ 30,000,000	(Personal) Exemptions
Belgium (Brussels, Flemish region, Walloon region)	Double progressive	Spouse, children, parents	3.0	8.0	18.0	24.0	30.0			€15,000
			3.0	9.0	9.0	27.0				
			5.0	7.0	18.0	24.0	30.0			€12,500
		Siblings	30.0	40.0	60.0	65.0				€1,250
			30.0	55.0	65.0					
			35.0	50.0	65.0					€620
		Uncles/ aunts, nieces/ nephews	35.0	50.0	70.0					€1,250
			40.0	55.0	70.0					€620
		Others	40.0	65.0	80.0					€1,250
			45.0	55.0	65.0					
			60.0	80.0						€620
Bulgaria	Progressive relationship (rate depends on municipality)	Siblings, nieces/ nephews	0.4 - 0.8 per inheritance share above €128,000							
		Others	3.3 - 6.6 per inheritance share above €128,000							
Denmark	Progressive relationship	Children, grandchildren, children-in-law, parents, divorced spouse	15.0							€37,942 (>€372,814): ordinary income and capital gains tax, excluding the residence of the deceased
		Others	36.3							
Finland	Double progressive	Spouses, children, grandchildren, fiancé	10.0	13.0	16.0			19.0		
		Others	25.0	29.0	31.0	31.0	31.0	33.0	33.0	
France	Double progressive	Children	20.0				40.0	45.0		€100,000
		Siblings	45.0							€15,932
		Blood relatives up to the fourth degree	55.0/60.0							
Germany	Double progressive	Spouse, children, grandchildren, parents (inheritance)	7.0	11.0		15.0	19.0		30.0	Spouse: €500,000; children and grandchildren: €200,000-€400,000; others €100,000
		Parents (gifts), stepparents, siblings, nephews/ nieces, in-laws, divorced spouse	15.0	20.0		25.0	30.0		43.0	€20,000
		Others	30.0						50.0	Inheritances: €20,000, Gifts: €80,724 for spouses, €31,865 for grandchildren, €5,310 for great-grandchildren
Ireland	Progressive relationship	Child, grandchild, partner of predeceased child, parents	33.0							€310,000
		Siblings, niece/ nephew, sibling-in-law								€32,500
		Others								€16,250
Italy	Progressive relationship	Spouse, linear relatives	4.0							€1,000,000
		Siblings	6.0							€100,000
		Other relatives and certain relatives by marriage								
		Others	8.0							
		Persons with disablement	The rate depends on the relationship of heir and deceased.							€1,500,000
Japan	Progressive rates		10.0	15.0	20.0	30.0	40.0	55.0		€229,221 + €45,844* number of statutory heirs. Minor heirs: € 764 * (20 – age), Handicapped heirs: €764/€1,528* (85 – age)

Inheritance Taxation (Marginal Tax Rates in %)

Country	Tax regime	Tax classes	€ 50,000	€ 100,000	€ 250,000	€ 500,000	€ 1,000,000	€ 5,000,000	€ 30,000,000	(Personal) Exemptions
Luxembourg	Double progressive	Children	Exceeding the statutory share: 2.5-5.0							
		Spouses	With children: 0; without children: 5.0							Spouse with children: €38,000
		Siblings	Statutory share: 6.0; exceeding the statutory share: 15.0							
		Uncles/ aunts, nieces/ nephews, adopted children	Statutory share: 9.0; exceeding the statutory share: 15.0							
		Great-uncles/aunts, great-nieces/ nephews, descendants of adopted children	Statutory share: 10.0; exceeding the statutory share: 15.0							
		Others	Statutory share and exceeding: 15.0							
Netherlands	Double progressive	Partner, children	10.0	Up to 20.0 for inheritances above €122,269						Inheritances: Partner: min. €164,842-€638,089; sick and disabled children: €60,621, children: €20,209; Gifts: €2,129-€5,320, depending on relationship
		Grandchildren	18.0	Up to 36.0 for inheritances above €122,269						€20,209
		Others	30.0	Up to 40.0 for inheritances above €122,269						Parents: €47,859, others: €2,129
Poland	Double progressive	Tax on lower threshold €, rate on remainder (X-lower threshold) %								
		Spouse, children, grandchildren, siblings, parents, grandparents, in-laws	<€2,246	€2,246–€2,396		€2,396–€4,790		>€4,790		€2,246
			€0 / 0%	€0 / 3%		€72 / 5%		€192 / 7%		
		Nieces/ nephews, uncles/aunts, siblings-in-law	<€1,696	€1,696–€2,396		€2,396–€4,790		>€4,790		€1,695
			€0 / 0%	€0 / 7%		€168 / 9%		€383 / 12%		
		Others	<€1,142	€1,142–€2,396		€2,396–€4,790		>€4,790		€ 1,142
			€0 / 0%	€0 / 0%		€287 /2%		€6 / 7%		
Spain	Double progressive	Rate increases with relationship and prior wealth of acquirer (max. rate: 81.60%).	13.6	18.7	29.8	34.0				Spouse, children and parents: €15,956-€47,858; in case of disabled heir €47,858-€150,253; others: €7,993. Dwelling: 95% of the real estate value (up to €122,606)
Switzerland	Progressive relationship	Spouses	No tax in all cantons							Allowances and free limits depend on canton
		Children and grandchildren	Max. rate of 3.5 in Appenzell I. Rh., Lucerne, Neuchâtel, Vaud							
		Parents	Taxes (max. 15.0) except for Aargau, Appenzell I. Rh., Basel Land, Fribourg, Geneva, Nidwalden, Obwalden, Solothurn, Schwyz, Ticino, Uri, Valais, Zug							
		Siblings	Max. rate of 23.0; except: Obwalden, Schwyz							
		Others	Max. rate of 49.5; except: Obwalden, Schwyz							
Turkey	Progressive rates		1.0	3.0 (>€ 50,000)	5.0 (>€ 100,000)	7.0 (>€ 250,000)	10.0			€33,665 per share for both child and spouse, if no children: €67,381 for spouse
UK	Fixed		40.0							€369,395
USA (estate and gift tax)	Progressive rate		24.0	28.0	32.0	34.0	39.0	40.0		€4,657,807

Note:Any currency conversions were conducted using the exchange rate as of the 16th of May 2018.
Source: EY (2017).

inheritance tax structures in selected countries according to these four characteristics.

Gifts are a potential means of avoiding inheritance taxation, and therefore their taxation is generally instrumented to prevent inheritance tax through gifts during lifetime. There are two types of countries listed in Table 5 — ones that differentiate gifts and inheritances, and the others that use united taxation systems to cover both cases. In France, Germany, Ireland, the Netherlands, Poland, Spain, and the USA, inheritances and gifts are taxed using united systems (greyly shaded in Table 5). In Belgium, Bulgaria, Denmark, Finland, Japan, Luxembourg, Switzerland, Turkey, and the United Kingdom, separate systems for inheritance and gifts are implemented.

Tax Regime

Tax regimes can be classified as progressive or non-progressive. A non-progressive tax regime applies either a fixed tax rate or a fixed chargeable amount independent of the value bequeathed. By contrast, some progressive tax regimes are considered "double-progressive" since not only does the tax rate increase with the amount bequeathed, but also with the tax classes of the heirs (i.e., the more distant the family relation, the higher is the tax rate). The most common tax regime is a double-progressive regime, which is applied in eight of the 17 countries – Belgium, Finland, France, Germany, Luxembourg, Netherlands, Poland, and Spain. Alternatively, a tax regime can be progressive in only one regard, namely either the tax class or the amount inherited. The progressive "tax class" regime is found in Bulgaria, Denmark, Ireland, Italy, and Switzerland. Ireland is an exceptional case, because it is not the marginal tax rate that increases with closeness of the relationship, but rather the exemptions that end up increasing, while all individuals and all amounts are taxed at a 33% rate, and only the exemption rules follow a progressive "tax class" regime. The progressive "tax rate" regime is found in Japan, Turkey, and the US. While the marginal tax rates in Turkey are at the lower end of the distribution, ranging from 1%-10%, Japan applies rates ranging from 10%-55%, and the US taxes between 24% and 40% of the amount bequeathed. In the United Kingdom, a fixed tax regime is followed, which means that all tax classes and all tax amounts are under the same marginal tax rate of 40%.

Tax Classes

While the fixed and progressive "tax rate" regimes do not distinguish between different tax classes, the closeness of relationship of the inheritance receiver and the deceased plays a role in determining the marginal tax rate under the double progressive or progressive "tax class" regimes. Bulgaria, Denmark, and Finland only distinguish between two tax classes, namely the close relatives and others. The tax class "others" includes distant relatives and unrelated beneficiaries and is found in all countries except France. France, Germany, Ireland, the Netherlands, and Poland apply three categories; Belgium uses four; Italy and Switzerland apply five; and Luxembourg leads with six distinct tax classes. While countries with fewer tax classes often combine various degrees of blood relatives such as children, parents, and spouses, countries with more categories distinguish among these. In Luxemburg, there is a special category for children, spouses, siblings, and uncles/aunts each. On the other hand, in Poland, for example, children spouses, grandchildren, siblings, parents, grand-parents, and in-laws are all summarized and joined into the first tax class. Italy also applies a special category for persons with disablement.

Marginal Tax Rate

When comparing the marginal tax rates among the countries, it becomes evident that Belgium has both one of the lowest and highest marginal tax rates. Belgium applies a marginal tax rate of 80% for the group "others" and an amount bequeathed above 100,000 euros. For spouses, children, and parents and for bequests above 50,000 euros, Belgium applies 3%. Among the countries studied, only Luxembourg with 2.5% (for any bequests to children) and Turkey with 1% (for all tax classes and bequests above 50,000 euros) apply lower tax rates. Interestingly enough, Table 5 also shows that Belgium is the country where the revenue achieved from taxing gifts and inheritance generates the highest revenue among the countries. Children face the highest tax rate in Ireland with 33%, but it is also important to point out that this high rate should be analysed with respect to the exemption levels, which are particularly high at 310,000 euros for children, for example. Poland also follows a unique calculation to determine the amount to be paid in tax. For example, if the inherited amount to a child is 3,509 euros: the beneficiary must pay a fixed amount of 72 euros since the 3,509 euros falls in the range of 2,396-4,790 euros as well as a variable amount. The variable amount is calculated by applying a tax rate, specific for the recipient group and amount (in this case 5%) to the amount left once subtracting the tax-free threshold from the total inherited amount. For this recipient group the threshold is 2,246 euros, therefore the remaining 1,263 euros (3,509-2,246) are multiplied with the 5%, giving an additional 63,15 euros to be paid in taxes.

Exemptions

As previously pointed out, marginal tax rates must be examined together with the personal exemptions. In Italy, for example, the tax rate for bequests above 50,000 euros is 4%. This rate becomes 3% in Belgium (Brussels). Nonetheless, while Italy applies a 1,000,000-euro exemption for spouses, Belgium (Brussels) only

offers 15,000 euros. Other countries consider disablement as a special case when determining personal exemptions. Italy has the highest personal exemption set at 1,000,000 euros for spouses and linear relatives. It is followed by Germany with an exemption of 500,000 for spouses. In Japan, the exemptions are calculated based on a base amount and the specific situation of either dependent on the number of statutory heirs or on the age of the recipient for both minor or handicapped recipients.

Abolition of Inheritance Taxation

Of those countries that do not currently levy an inheritance tax, some abolished it in the past, whereas the tax was never introduced in the others. This situation in Europe is summarized in Figure 2b. The US is a mixed case and falls into neither category, where no inheritance tax is imposed at the federal level, yet a minority of states independently maintain inheritance tax regimes.

Taxes on bequests were abolished in Austria, Czech Republic, New Zealand, Norway, Portugal, and Sweden. The most recent abolition of the inheritance tax took place in Norway in 2014, where arguments about the fairness with respect to middle-class individuals dominated the debate over abolition. Moreover, it was pointed out that the inheritance tax impeded the transfer of family businesses to the next generation because of the resulting burden of liquidity that must be available to pay the due taxes. Finally, the inheritance tax regime was considered complicated and caused high administrative costs (Sand 2015).

In New Zealand, the gift tax and the inheritance tax were both abolished, although at different times. Inheritance taxation was abolished in 1992 mainly because of increasing tax avoidance (Littlewood 2014). The gift tax was first placed under review and finally abolished in 2011 mainly due to high compliance costs affecting the private sector and the low tax revenues arising from it. While historically, the gift tax was considered an instrument to prevent income tax avoidance and fraud with social security benefits, the review revealed that this mechanism of protection did not fulfil the efficiency criteria (Inland Revenue's Policy and Strategy Group 2011).

In the case of Sweden, inheritance taxation was abolished in 2004 by the Social-Democratic minority government in cooperation with the Left Party. As in Norway, the decisive argument was that the rich managed to avoid inheritance and gift taxation while increasing inheritance tax rates led to a financial burden for middle-class individuals. Moreover, the tax revenue from inheritance taxation was so low that the redistributive purpose and the effectiveness of the tax were questioned. Therefore, the inheritance tax regime was considered unfair and ineffective and was finally repealed (Henrekson and Waldenström 2016).

While Norway, New Zealand, and Sweden simply abolished the tax on inheritance, Austria, Czech Republic, and Portugal incorporated inheritances as taxable grounds into other tax regimes after abolishing a direct tax on bequests. In the Czech Republic, inheritances and gifts were subject to income taxation after the abolition of the inheritance and gift tax regime. Alternatively, in the case of Portugal, inheritances and gifts became subject to stamp tax, which is due on documents and acts among other things (PwC 2017). In Austria, inheritance and gift taxation was declared unconstitutional in 2007 as financial assets and real estates were treated unequally by the regulations of the tax regime. The Austrian government therefore decided against a revision of the tax regime within the processing period prescribed by the Austrian constitutional court. However, the Austrian administration included inheritances of real estates into the tax regime for the land transfer tax (finanz.at 2018).

By contrast, Australia, Canada, and Ukraine never implemented an official inheritance and gift tax regime. In Ukraine, a tax on inheritance never existed, although bequests are considered by the income tax regime. In Italy, the inheritance tax was temporarily abolished but reintroduced in 2006.

SUMMARY

The distribution of wealth and underlying wealth stocks have proven difficult to be measured. Available data suggests that wealth is generally more unequally distributed than income and therefore tends to be concentrated at the top. In the public debate, taxing wealth is often portrayed as a means to combat inequality through redistributing wealth. This article compared the net wealth taxation schemes of the three OECD countries currently applying levies on net wealth. Unlike net wealth taxes, inheritance taxes are found in most of the OECD countries presented. It is apparent that wealth and especially inheritance and gift taxation systems vary vastly from one country to another. The revenue shares that the two tax types yield, however, are relatively low.

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New at DICE Database

RECENT ENTRIES TO THE DICE DATABASE

In the second quarter of 2018, the DICE Database received a number of new entries, consisting partly of new topics and partly of updates. The list below features some of these new entries:

- Wealth Shares (Country Overview 2017)
- Inheritance Taxation (Country Overview 2017)
- Wealth Taxation (Country Overview 2017)
- Country Comparison of Total Wealth Levels and Wealth per Adult (2016/2017)

Forthcoming Conferences

CESifo Area Conference on the Economics of Education

31 August–1 September 2018, Munich

The 2018 CESifo Area Conference on the Economics of Education, organised by Eric A. Hanushek (Stanford University, Area Director) and Ludger Woessmann (ifo Institute), aims to bring together official CESifo network members to discuss their recent research and to encourage broader interactions, particularly on both sides of the Atlantic. All CESifo research network members are invited to submit their papers, which may deal with any topic within the broad domain of the economics of education. The Jacobs Foundation Lecture will be delivered by Robert J. Barro (Harvard University).
Scientific organisers: Eric A. Hanushek, Ludger Woessmann

8th ifo Dresden Workshop on Regional Economics

20–21 September 2018, Dresden

ifo Dresden announces the 8th ifo Dresden Workshop on Regional Economics. The workshop aims to facilitate the networking of young scientists and promote the exchange of their latest research results in the fields of regional structural change, the causes of persistency in regional inequality, and place-based policies. Policy relevant contributions, both theoretical and applied, are highly welcome. We specifically encourage PhD students and post-doctoral researchers to submit their latest research. Each paper will be allocated 45 minutes, to be divided between the presentation, a short discussion by an assigned workshop participant and a general discussion.
Scientific organisers: Christian Ochsner, Christian Lessmann

CESifo Area Conference on Energy and Climate Economics

12–13 October 2018, Munich

The purpose of this conference is to bring together the members of the CESifo Research network to present and discuss their ongoing research, and to stimulate interaction and co-operation between them. All CESifo research network members are invited to submit their papers. The keynote lecture will be delivered by John Hassler (Stockholm University).
Scientific organiser: Michael Olaf Hoel

CESifo Area Conference on Behavioural Economics

26–27 October 2018, Munich

The eighth CESifo Area Conference of the Behavioural Economics area will once again be organised jointly with the Collaborative Research Center „Rationality and Competition“. The purpose of the conference is to bring together CESifo and CRC members to present and discuss their ongoing research, and to stimulate interaction and co-operation between them. All CESifo Research Network members and all CRC members are invited to submit their papers, which may deal with any topic within the broad domain of behavioural and experimental economics and applications to other fields. The keynote lectures will be delivered by Xavier Gabaix (Harvard University) and Pietro Ortoleva (Princeton University).
Scientific organisers: Ernst Fehr, Klaus Schmidt

CESifo Economic Studies Conference on New Perspectives on Tax Administration Research

2–3 November 2018, Munich

The aim of this conference is to bring together research that addresses issues related to tax administration. Submissions in all areas of tax administration are invited from any perspective. The keynote lecture will be delivered by Brian Erard (B. Erard & Associates).
Scientific organiser: Christos Kotsogiannis

New Books on Institutions

Unelected Power – The Quest for Legitimacy in Central Banking and the Regulatory State

Paul Tucker
Princeton University Press, 2018

The Gift of Global Talent – How Migration Shapes Business, Economy & Society

William Kerr
Stanford University Press, 2018 (forthcoming)

Self-Regulation and Human Progress – How Society Gains when we Govern Less

Evan Osborne
Stanford University Press, 2018

THE DATABASE FOR INSTITUTIONAL COMPARISONS IN EUROPE

The Database for Institutional Comparisons in Europe – DICE – was created to stimulate the political and academic discussion of institutional and economic policy reforms. DICE is a unique database offering comparative information on national institutions, regulations and economic policy. Although DICE is not a statistical database, it also contains data on the outputs (economic effects) of institutions and regulations where relevant.

DICE covers a broad range of institutional themes: Banking and Financial Markets, Business, Education and Innovation, Energy, Resources, Natural Environment, Infrastructure, Labour Market, Migration, Public Sector, Social Policy, Values and Country Characteristics.

The information is presented in tables (text or data), graphics (interactive application Visual Storytelling), and reports. In most cases, all EU countries are covered as well as some other major OECD countries. Users can choose between current comparisons and time series that show developments over time.

DICE combines systematic information from a wide range of sources, presenting a convenient one-stop service for your data needs.

DICE is a free-access database.

Feedback is always welcome. Please address your suggestions/comments to:

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