WEALTH DISTRIBUTION AND TAXATION IN EU MEMBERS

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After a short overview of the distribution of private wealth and asset-based taxation in EU Members, this paper provides a range of economic arguments to make the case for asset-based taxation. Thereafter, aspects of design and implementation of specific asset-based taxes, notably housing, net wealth, and gifts and inheritances, are discussed from a distributional perspective. Finally, the possible role of the EU level of policy making in the adoption of such tax instruments is addressed.

1 Introduction

Calls for the taxation of wealth have become more vocal recently, underpinned by different objectives. The possibility to raise Treasury revenue from wealth has received increased interest in light of the struggle of EMU Members with high public debt. The IMF (2013) established for 15 euro area countries that that a net wealth levy of about 10 per cent could reduce public debt to the levels of 2007, but highlighted the experience of limited success due to implementation delays. In the same vein, the Bundesbank (2014) contemplated a wealth levy as a pre-condition to foreign public debt relief to affected countries. Wealth taxes are also increasingly seen as an instrument to foster equity. This view has received prominent support by Piketty's (2014) historical analysis of wealth distributions in industrialized countries. The argument goes that wealth tends to concentrate due to higher returns to capital than growth, which is particularly acute in ageing societies. A tax on wealth is expected to counteract both widening wealth inequality within populations and its transmission to next generations. Finally, more tax revenue from specific assets, residential property, is seen to improve the growth-friendliness of taxation systems. Recurrent taxes on land and residential buildings have received support by the OECD (2010)'s analysis on taxation and growth, based on the assertion that such taxes affect labour supply, investment, human capital investment, and innovation decisions to a lesser degree than other taxes, and are more difficult to evade.

The renewed interest in wealth taxation has also been echoed by analysis and public debate within EU Members, typically driven by concerns about equity. In Austria, in late 2013, a broad platform of economists and social scientist launched a call to re-introduce a tax on gifts and inheritances that was abolished in 2008.[1] In Germany, the taxation of wealth has been put on hold since 1997 but its reactivation has been picked up by public debate lately (Bräuninger, 2012); besides, an investigation by the Constitutional Court is ongoing on the privileges to private assets offered by the gift and inheritance taxation rules applied to business assets. In Spain, a net wealth tax had been effectively abolished in 2008 but re-introduced in 2011. In the UK, the debate has been ongoing, with analytical contributions made e.g., by IPPR, one of the country's leading think-tanks, extending micro-simulation over household assets. In France, a "solidarity tax on wealth" has been levied since 1982. After a reduction in the overall burden in 2012, most recently again higher rates of up 1.5 per cent on assets over EUR 10 mn are being applied. In Belgium, public

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[1] See the website www.erbschaften-besteuern.at

debate on the possibility to tax wealth to the benefit of decreasing the high tax burdens on labour has also become more vocal recently. On the other hand, in Italy, hostility against wealth taxes – in particular against those on residential property, that had been introduced in 2011 but abolished for non-luxury dwellings later – is wide-spread and appears consistent with high and broadly spread levels of net household wealth against the highly indebted state.

This paper contributes to the dissemination of information for policy choices considering taxes on wealth in EU Members. In the EU policy framework so far, the recurrent taxation of immovably property in particular has been in the focus of the tax policy recommendations for the EU Members, backed by the growth-friendliness of this instrument. However, a comprehensive assessment of different approaches to the taxation of assets with regard to different objectives has not yet been undertaken. This paper intends to fill this gap by discussing the rationale, design choices, and scope of action at the EU level with regard to asset based taxation. We first describe household wealth distributions in euro area Member States derived from the Eurosystem Household Finance and Consumption Survey, and provide a sketch of wealth taxation in EU Members applied at present (Section 3). Next we review basic arguments for and against the taxation of wealth (Section 3). Thereafter we discuss specific design aspects, relating to the choice of the base, and the timing resp. frequency of levies, as well as some implementation challenges (Section 4). Finally we explain what role could possibly be assumed by policy making at the EU level (Section 5).

2 The distribution and taxation of wealth in EU Members

2.1 The distribution of wealth in euro area Members

The Eurosystem Household Finance and Consumption Survey (HFCS) provides comparative information on the distribution and composition of household wealth in more than half of the EU Members as of 2010. The HFCS survey was conducted in 2010 and the data were released in spring 2013. For all members of the euro area as of 2010 but Ireland and Estonia, it contains ex ante harmonized information on real and financial assets, liabilities, and expenses of private households. The country samples are established on the grounds of complex survey design, aiming at allowing for statistical inference that is representative of the population. Among others, item non-response is dealt with by multiple imputation.[2] In spite of the ambitious survey design and the explicit oversampling of the wealthy by some but not all participating countries (Eurosystem Household Finance and Consumption Network, 2013), the caveat holds that the top tail of the wealth distribution is heavily under-estimated, as suggested by comparison with rich lists compiled by journalists (Vermeulen, 2014). Therefore, conclusions on the wealthiest fractions of the households should be understood as based on lower bound estimates of their wealth.

Descriptive analysis derived from the Eurosystem HFCS[3] shows the following (see also the tables in the Annex).

- **Net household wealth is relatively highly concentrated across households in EU Members, but considerable country differences exist (Fig. 1; Table A2 in the Annex).** By the share of the net wealth holdings of the top decile of households in the net wealth distribution, net wealth

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[2] This technique helps preserve observations on which responses on some items are missing. The missing values are predicted by a regression including a residual to reflect uncertainty. With multiple imputation, several imputed values are created from different random draws for each missing variable. This procedure allows preserve the characteristics of the distribution of the variables and consider uncertainty. For a detailed description, see Eurosystem Household Finance and Consumption Network (2013), pp. 46ff.

[3] The reported results have been obtained using the multiple imputation structure of the data and the estimation weights provided by the data providers.

Table 1

Correlation Between Gross Income, Gross Wealth and Net Wealth of Households in 15 Euro Area Countries

Country	Gross Income		Gross Wealth
	Gross Wealth	Net Wealth	Net Wealth
Austria	0.28	0.27	1.00
Belgium	0.19	0.18	0.99
Cyprus	0.44	0.42	1.00
Germany	0.39	0.36	0.99
Greece	0.44	0.42	0.99
Spain	0.26	0.25	1.00
Finland	0.65	0.59	0.98
France	0.46	0.44	1.00
Italy	0.49	0.48	1.00
Luxembourg	0.48	0.47	1.00
Malta	0.19	0.19	1.00
Netherlands	0.33	0.25	0.88
Portugal	0.49	0.48	1.00
Slovenia	0.39	0.38	1.00
Slovakia	0.29	0.28	0.99

Source: HFCS, own calculations.

is most concentrated in Austria, Germany, and Cyprus, where the wealthiest households hold about 57-61 per cent of total net household wealth. Countries with comparatively little concentration of net household wealth are the Slovak Republic, Slovenia, Greece, and the Netherlands, where the top decile of households holds about 33-40 per cent of net household wealth. For Belgium, Italy, Finland, Malta, France, Luxembourg, and Portugal, the top decile's share is between 44 and 53 per cent of total net wealth.

- **Across households, gross and net wealth is highly correlated, but wealth and income is less so (Table 1).** Lower correlations among gross and net wealth are characteristic of the Netherlands, reflecting the effect of mortgage debt. Highest correlations among gross income of wealth (net or gross) can be seen in Finland (with correlation coefficients around 0.6); these correlations are more moderate in Italy, Luxembourg, Portugal, France, Cyprus, and Greece (correlation coefficients around 0.45), and relatively low in Austria, Slovakia, Belgium, and Malta (correlation coefficients below 0.3). By decile of net wealth, in most of the countries considered, households' gross income is below or around average up to the 7th decile; gross incomes are somewhat higher in the first decile where low net wealth might reflect high stocks of debt than in the second. Average incomes moderately increase in the eighth and ninth decile up to 115 to 160 per cent of the average (in the Netherlands and Slovenia respectively), and are about 130 to 225 per cent of the average in the tenth decile (in the Netherlands and Portugal and France, respectively). Information on post-tax household income is unavailable from the HFCS dataset but tax-benefit systems can be expected to attenuate differences of household income across net wealth deciles. As a second caveat, as suggested by a growing literature, top incomes are likely to be underestimated.

- **Net wealth constituted by the household main residence (HMR) net of outstanding HMR mortgages is less concentrated across households than overall net wealth.** The top net wealth decile of households possesses 22 to 42 per cent of overall household wealth constituted by the household residence net of mortgages. Particularly high shares of the top decile are found in Austria and Germany, two countries with broad rental housing markets, but also in the Netherlands, which has high levels of households' mortgage debt with downward adjusting home values. Countries with a relatively low concentration of overall net wealth, where the top 10 per cent of households hold about a quarter of total net HMR wealth, are Belgium, Spain, Greece, Malta, and Slovenia (see Table 7 in the Appendix).
- **In nearly all countries considered, households in the fifth to ninth decile of net wealth hold relatively more HMR net wealth than net assets overall.** The comparison of the distribution of overall net wealth and net HMR wealth across households show that HMR wealth plays a considerably lesser role in the portfolio of households in the tenth decile in all countries but the Netherlands. Households in the first four net wealth deciles tend to hold relatively more overall net wealth then HMR net wealth, but the difference in the shares of these deciles' net HMR wealth and overall wealth in total household net wealth is relatively small, in most cases less than one percentage point (see Table 4).

2.2 Taxation of capital and wealth: main characteristics of EU Countries

Ernst and Young carried out for the European Commission a cross-country overview of taxes on wealth and transfers of wealth (ibid., 2014). The study provides information on taxes in place and on revenue raised from these taxes. Taxes on assets and their transfers are classified in three categories: inheritance and gift, real estate and land, and net wealth. On the prevalence of such taxes the following is found (see Figure 1).

- Inheritance is taxed in all EU Members except Sweden, Latvia, Estonia, the Czech Republic, Austria, Romania, Bulgaria, Cyprus, and Malta. Two further Members – the Czech Republic and Portugal – have a provision on inheritance taxation in other tax schedules. Although bases are normally broad and rates can be high, spouses and children are largely exempt. Typically, the tax is charged upon the beneficiaries (not donors) and is based on the fair market value of the assets. Inheritance taxes favor close relatives up to total exemption; they are progressive in 14 Members. Inheritance tax rates vary from complete exemption in the most favored group (e.g., in Greece, Luxembourg, Slovenia, Finland, and the UK) to up to 80 per cent for the most heavily taxed group (e.g., in Brussels and the Walloon region in Belgium). Family businesses enjoy exemptions up to 100 per cent (the Netherlands up to a ceiling, and Germany) in 12 EU Members applying a tax on inheritances; Bulgaria, Denmark, Croatia, Lithuania, Luxembourg, and Slovenia have no such exemption.
- In most countries the approach to inheritance and gift taxation is similar, except for Belgium (that applies a moderate registration duty on gifts, in comparison with the taxation of inheritances that is among the highest in the EU), and Latvia and Lithuania respectively (that have a provision for gifts in the personal income tax schedule). Exemptions of close relatives and differential rates depending on the relation between donor and done apply for gift taxes as well as.

Table 2

Average Gross Household Income Across Deciles of Net Household Wealt, 2010
(percent of the overall average in 15 euro area countries)

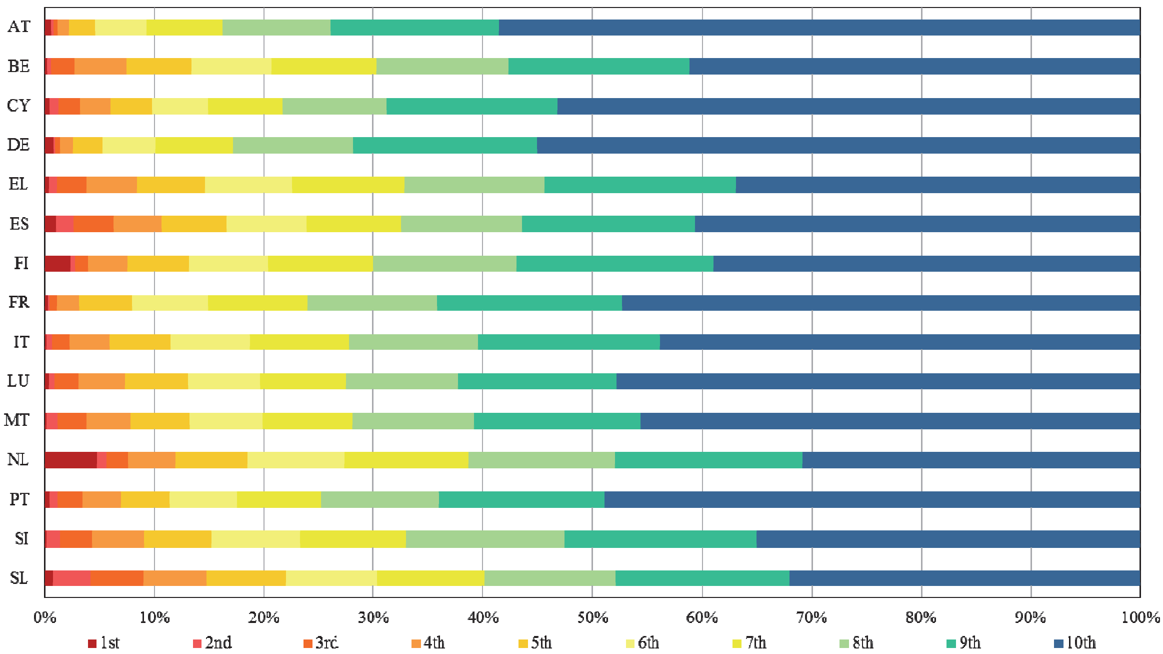
Country/decile	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
AT	0.55	0.54	0.64	0.83	0.87	0.90	1.06	1.14	1.43	2.04
BE	0.58	0.52	0.68	0.99	0.94	0.94	1.10	1.23	1.30	1.71
CY	0.49	0.60	0.59	0.72	0.87	1.05	1.01	1.18	1.33	2.16
DE	0.52	0.42	0.59	0.76	0.92	1.02	1.05	1.20	1.36	2.17
EL	0.56	0.80	0.78	0.72	0.80	0.91	1.05	1.18	1.37	1.83
ES	0.65	0.72	0.68	0.71	0.77	0.89	1.02	1.09	1.33	2.15
FI	0.86	0.48	0.64	0.87	0.85	0.88	1.00	1.17	1.26	1.99
FR	0.59	0.53	0.68	0.81	0.85	0.89	0.98	1.08	1.32	2.26
IT	0.45	0.62	0.81	0.75	0.82	0.86	1.00	1.14	1.42	2.13
LU	0.40	0.55	0.70	0.85	0.89	0.87	1.04	1.26	1.46	1.97
MT	0.58	0.78	0.77	0.82	0.93	0.99	1.05	1.30	1.13	1.63
NL	1.01	0.74	0.87	0.89	0.97	0.97	0.97	1.08	1.15	1.35
PT	0.53	0.70	0.72	0.70	0.77	0.88	0.96	1.08	1.41	2.25
SI	0.41	0.80	0.73	0.91	0.85	0.87	0.99	0.91	1.57	1.97
SK	0.65	0.84	0.83	0.86	1.11	0.98	0.92	1.06	1.17	1.57

Source: HFCS, own calculations.

- Taxes on real estate and land are in place in nearly all EU Members. All Member States except Slovenia and Malta tax the possession of real estate, while all but Slovenia, France, and Romania levy taxes on real estate transfers.
- Recurring taxes on net wealth are in use in about one third of the Member States: in seven cases, this involves vehicles and is mainly motivated by environmental policy concerns. In one case, Italy, there is a tax on bank accounts and financial assets with a genuine aim to tax wealth. General net-wealth taxes are in place in Spain and France, while the Netherlands has a provision practically providing for wealth taxation in its income tax regime.

Figure 1

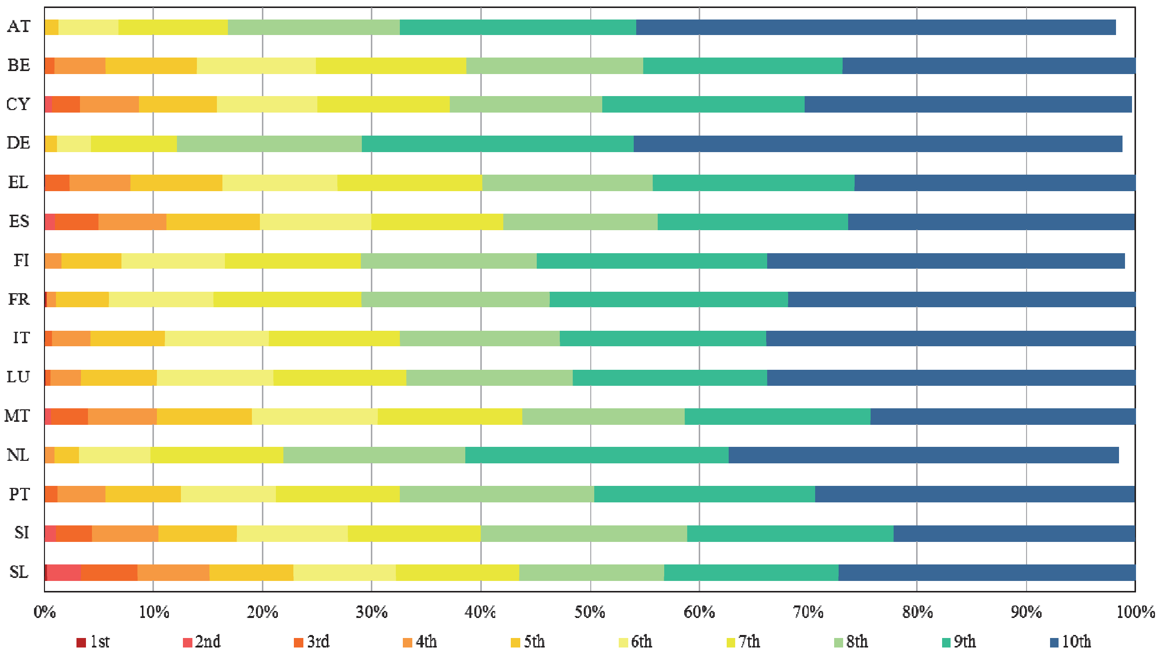
Distribution of Net Wealth of Households in 15 Euro Area Countries Across Deciles, 2010



Source: HFCS, own calculations.

Figure 2

Distribution of HMR Wealth Net of Outstanding HMR Mortgage of Households in 15 Euro Area Countries Across Deciles, 2010



Source: HFCS, own calculations.

Table 3

Overview of Taxes on Wealth and Transfers on Wealth in EU Members

Member State	Inheritance tax	Inheritance provision	Gift tax	Gift provision	Real estate possession tax	Real estate poss. provision	Real estate transfer tax	Real estate trans. provision	General net-wealth tax	General net-wealth provision	Specific net-wealth tax
BE	✓	✗	✗	✓	✗	✓	✗	✓	✗	✗	✗
BG	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✓
CZ	✗	✓	✗	✓	✓	✗	✓	✗	✗	✗	✗
DK	✓	✗	✓	✓	✓	✗	✗	✓	✗	✗	✓
DE	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✗
EE	✗	✗	✗	✗	✓	✗	✗	✓	✗	✗	✓
IE	✓	✗	✓	✗	✓	✗	✗	✓	✗	✗	✗
EL	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✗
ES	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗	✗
FR	✓	✗	✓	✗	✓	✗	✓	✗	✓	✗	✗
HR	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✓
IT	✓	✗	✓	✗	✓	✗	✗	✓	✗	✗	✓
CY	✗	✗	✗	✗	✓	✗	✓	✗	✗	✗	✗
LV	✗	✗	✗	✓	✓	✗	✓	✗	✗	✗	✗
LT	✓	✗	✗	✓	✓	✗	✗	✗	✗	✗	✗
LU	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✗
HU	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✗
MT	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗	✓
NL	✓	✗	✓	✗	✓	✗	✓	✗	✗	✓	✗
AT	✗	✗	✗	✗	✓	✗	✓	✗	✗	✗	✗
PL	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✓
PT	✗	✓	✗	✓	✓	✗	✓	✗	✗	✗	✗
RO	✗	✗	✗	✗	✓	✗	✗	✓	✗	✗	✗
SI	✓	✗	✓	✗	✓	✗	✗	✗	✗	✗	✓
SK	✗	✗	✗	✗	✓	✗	✗	✓	✗	✗	✗
FI	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✗
SE	✗	✗	✗	✗	✓	✗	✓	✗	✗	✗	✗
UK	✓	✗	✓	✗	✓	✗	✓	✗	✗	✗	✗

Source: Ernst and Young (2014), p. 5.

Table 4

Difference Between the Share of Overall and HMR Net Wealth of Households in 15 Euro Area Countries Across Deciles, 2010

Country/decile	1	2	3	4	5	6	7	8	9	10
AT	-1.55	-1.12	-0.47	-0.93	-1.13	1.02	3.34	6.43	6.82	-13.33
BE	-0.21	-0.33	-1.29	-0.12	2.51	3.52	4.32	4.17	1.66	-14.25
CY	-0.79	-0.19	0.69	2.61	3.46	4.08	5.45	4.62	3.05	-22.99
DE	-1.41	-0.71	-0.52	-1.04	-1.66	-1.59	0.79	6.36	8.58	-9.40
EL	-0.38	-0.66	-0.50	0.94	2.25	2.62	3.09	2.86	0.90	-11.11
ES	-1.11	-0.71	0.37	1.77	2.83	2.83	3.50	3.09	1.82	-14.38
FI	-3.42	-0.41	-1.10	-2.13	0.09	2.31	3.24	3.36	3.65	-5.58
FR	-0.15	-0.17	-0.55	-1.29	-0.04	2.72	4.51	5.42	4.98	-15.43
IT	-0.19	-0.42	-0.99	-0.14	1.20	2.38	2.92	2.89	2.30	-9.95
LU	-0.31	-0.47	-1.76	-1.43	1.17	4.09	4.37	5.08	3.24	-13.97
MT	-0.17	-0.44	0.71	2.32	3.43	4.74	5.04	3.85	1.84	-21.32
NL	-6.31	-0.97	-1.88	-3.48	-4.16	-2.12	1.19	3.87	7.76	6.08
PT	-0.62	-0.72	-1.11	0.97	2.37	2.62	3.76	7.16	5.18	-19.61
SI	-0.20	-0.30	0.38	1.42	1.05	2.12	2.47	4.49	1.34	-12.77
SL	-0.53	-0.34	0.32	0.78	0.56	1.10	1.45	1.25	0.19	-4.79

Source: HFCS, own calculations.

The contribution of wealth taxes to government revenue is limited in EU Members. Among the taxes on wealth, those levied on real estate and land have been the most important for generating revenue: in the countries applying such taxes, real estate transfers and possession taxes have been found to raise about 3 per cent of total revenue, i.e. about 0.85 per cent of GDP on average in 2012. Inheritance and gift taxes have brought about 0.27 per cent of GDP – 0.6 per cent of total revenue. Their limited revenue reflects the relatively low taxes when assets pass over to close relatives. Finally, taxes on the possession of net wealth have contributed about 0.5 per cent to total revenue (0.17 per cent of GDP) on average. This relatively low figure reflects the relatively narrow base: in the two countries applying such a tax, along with large tax free thresholds, business assets are fully exempt from the base.

3 New arguments in favour of asset based taxation

During the past two decades, the assessment of wealth related taxation was predominantly negative. A tax on wealth is ultimately a tax on capital income, potentially at a high rate relative to a flow-type base. Therefore the arguments for a lighter tax treatment of capital income also translate to capital stocks. In the optimal taxation framework, the distortionary effect of capital taxation was well entrenched since Atkinson and Stiglitz (1979), Chamley (1986), and Judd (1985).[4] From a policy perspective, the favorable tax treatment of capital income is seen to encourage investment, notably by enabling more projects with positive expected after-tax return. Furthermore, due to its higher mobility, taxes on capital income other than real estate are considered more distortive than on labour, hence justifying lighter burdens.

The negative assessment of wealth related taxation warrants reconsideration given new theoretical insight and economic and policy developments to date. A light approach to capital taxation is being questioned on the grounds of fuzzy distinctions between capital and labour income, a positive correlation between earnings opportunities and saving propensities, positive incentive effects on labour supply and human capital investment, the efficiency enhancing scope of lighter burdens on borrowing constrained households, and its aptitude as an instrument of redistribution above what could be achieved with labour income taxes alone (Diamond and Saez, 2011; ibid., 2012; Jacobs, 2013).[5] Recent theoretical work (Straub and Werning, 2014) goes even further, to refute the optimality of capital non-taxation in the long run within the logic of the modelling framework of Chamley (1986) and Judd (1995).

The terms of a consequentialist evaluation of wealth taxes – concerning avoidance and administrative costs – are also changing. From a practical point of view, evasion and difficulties of valuation have been considered key arguments against the taxation of wealth. Opportunities of avoidance and evasion reduce the capacity of wealth taxes to generate revenue, and they contribute to the perception that wealth taxes produce little net benefit. Because the better off are rather able to exploit avoidance opportunities, wealth taxes have also been seen to fail to deliver on equity. Opponents of wealth taxation quote that the recurrent re-valuation of infrequently traded assets, such as antiquities but also housing stock in areas with few market transactions, is impeded by the lack of information on market values of comparable items. This makes such revaluation costly in principle and risks creating inequitable treatment of taxpayers. With new international standards of third-party reporting and information exchange on asset holdings and capital income, avoidance of capital taxation is about to become less profitable. Likewise, these new standards and the declining cost of processing large databases can be expected to lower the administrative costs of wealth taxation, valuation included. In countries with net taxes on wealth, information on assets is seen as an important complement to enhance the validity of capital income reporting.

Its ability to provide utility to the owner also suggests consider wealth as a tax base. In the welfarist framework, the normative yardstick of tax design is individual utility. Empirical evidence supports that wealth is a source of utility in its own right (Carroll, 1998; Yang and De Nardi, 2014; Peichl and Pestel, 2013). Such utility might include power by the command over resources providing advantage in bargaining situations (Bowles, 2012), and result in over-

4 Since Atkinson and Stiglitz (1976), optimal taxation theory has maintained that capital income should not be taxed on condition that non-linear income taxes can be levied: taxing capital income would imply burdens on future consumption and distort the inter-temporal consumption decision. The zero capital income tax result has been famously corroborated by Chamley (1986) and Judd (1985), on account of a growing tax wedge between current and future consumption over time. Policy recommendations from the highly stylized analytical framework of optimal taxation theory and the proposition not to tax capital were not followed by policy in full but were influential in policy debates nevertheless.

5 Some theoretical work (Straub and Werning, 2014) goes even further to refute the optimality of capital non-taxation in the long run within the logic of the modelling framework of Chamley (1986) and Judd (1995).

proportional political influence and rent-seeking.[6] Income and wealth are positively correlated overall, but deviations might occur for reasons other than life-cycle consumption smoothing, so that income cannot be taken as a proxy for wealth with regard to taxation. Also some people argue that taxing wealth is expropriation, but it is not clear why the right to private property should protect stocks of assets more than pre-tax income flows. The consideration of wealth taxation, but not of income taxation, as non-respect of the right to private property might relate to features of tax salience. Concerning the protection of private property, political philosophy approaches other than radical individualism have been calling for a balance between the right to property and the common good.[7]

Political considerations further add to the case for the taxation of wealth. The "one dollar one vote" hypothesis expresses the idea that political voice is mediated by the command over material resources, which is at odds with the normative underpinnings of democratic regimes. Evidence from OECD countries in the late 20th century provides support of principle to this argument (Karabarbounis, 2011);[8] The over-proportional political influence of the wealthy bears risks to efficiency via securing means of rent-seeking; [9] indicative cross-country evidence suggests that wealth inequality is damaging for growth notably when coupled with political influence (Bagchi and Svejnar, 2014).

The specific fiscal situation in the aftermath of the financial crisis provides a particular rationale for asset based taxation. The paramount importance of financial stability for growth and job creation notwithstanding, financial stabilization policies have importantly served the stabilization of asset values, while crisis-driven fiscal adjustment tends to burden those with incomes from labour and social transfers more heavily.[10] Taxes on wealth could extend the notion of the ability to pay for the costs of crisis.

The restoration of comprehensive income taxation systems could contribute to a fairer distribution of tax burdens, but reasons to complement such systems with asset-based systems will still remain. Lately, there have been three trends providing for challenges to distributional equity: first, the effective taxation of capital income has been declining over the past decades (European Commission, 2015) – against the background of international tax competition and the proliferation of dual income taxation systems –, putting recipients of labour income at a disadvantage. Second, the link between aggregate capital accumulation and household welfare

6 The over-proportional influence of the affluent to tilt political deliberations in their interest has received attention in the context of financial regulation in the United States in particular. Indeed the large wage premia in the pre-crisis financial industry in the UK and the US appear to relate to the ability of the sector to enjoy and share rents (Philippon and Reshef, 2012). On the role of political lobbyism in the incomplete implementation of the Dodd-Frank act more recently see Rivlin (2013), quoted from Oxfam (2014).

7 For advocates of a lean state, wealth should be an ideal tax base candidate: the protection of private property is considered the core responsibility of the state even by those who do not grant much *raison d'être* to redistribution. Among the rules that govern polities to date, the principle that 'property has its duties as well as its rights' coined by B. Disraeli (1804-81) is, e.g., found in the German Basic Law, Art. 14 (1) of which stipulates: "property entails obligations. Its use shall also serve the public good". Other countries' practice to tax wealth shows a similar approach.

8 Karabarbounis (ibid.) argues that the decline in redistribution in the US reflects declining relative incomes of both the lower and the middle class, while an increase in redistribution in Europe can be explained with declining relative incomes of the upper class. These developments are explained by two hypotheses, indeed deviating from the median voter proposition: first, that political influence increases with income ("one dollar, one vote"), and second, that the political participation of poorer populations increases with income, resulting in redistribution increasing with the relative wealth of populations at the bottom of the income distribution. The empirical relevance of these assertions has to be assessed against the background of country-specific income and wealth distributions.

9 The over-proportional influence of the affluent to tilt political deliberations in their interest has received attention in the context of financial regulation in the United States in particular. Indeed the large wage premia in the financial industry developed over the past decade in the UK and the US appear to relate to the ability of the sector to enjoy and share rents (Philippon and Reshef, 2012). On the role of political lobbyism in the incomplete implementation of the Dodd-Frank act more recently see Rivlin (2013), quoted from Oxfam (2014).

10 A full account of the distributional effects of crisis policies falls outside the scope of the present note. A comprehensive approach would need to consider the effects of monetary policy as well; on this see e.g., Bank of England (2012).

irrespective of type of income has weakened: globally, in the past decades, the labour share of income has been falling (Karabarbounis and Neiman, 2014; ibid., 2012), and increasing corporate profitability has been coinciding with subdued job creation (International Labour Organisation, 2014); going further, technological progress might accelerate the substitution of capital for labour (Brynjolfsson et al., 2014): thus, fostering the accumulation of capital might not do enough to increase the welfare of households mainly living from labour income. Third, market income inequality appears to be on the rise not only as a matter of unequal distribution of capital endowments, as highlighted by the broad debate about the top 1 per cent of income earners; going forward, innovation might render income processes less predictable and distributions more skewed (Brynjolfsson et al., ibid.). Income tax systems' fairness to treat households with different types but similar levels of income equally could be reinforced by restoring synthetic income taxation instead of dual taxation schemes, and eliminating regressive deduction and avoidance possibilities, while ensuring that all incomes and wealth increases are taxed, including capital gains and imputed income of homeowners. Also reinforcing the progressivity of income taxation could attenuate the differences in households' ability to save. However, it might be politically unfeasible to institute income tax progressivity and top marginal rates specifically to a degree that mitigates socio-economic inequality to a socially desired extent. Also, the equal application of high top marginal income tax rates at all ranks of wealth might act as a disincentive to valorising talent and to social mobility. Instead of very high top marginal income tax rates, income tax systems could be complemented by asset-based taxation. Another argument for the taxation of assets relates to the trend of shifting the tax base to consumption. Such taxation leaves the utility of accumulated wealth unaddressed, and it benefits those households whose members can afford unconsumed lifetime wealth.[11] Such advantage could be counter-balanced by taxing high stocks of wealth.

Going beyond possibilities of income taxation, wealth taxation would allow for progressivity based on assets, with benefits of its own. Reinforced capital income taxation and notably the return to universal income taxation, more rigor in defining the base, and higher progressivity would do a lot to meet concerns of distributional equity seen to date. Still there are economic challenges innate to the distribution of wealth that could be addressed by tax instruments that differentiate by the stock of capital. First, incentivising a more balanced distribution of savings might help macroeconomic stability. Households are not homogeneous by saving behaviour: saving rates increase steeply with wealth (Carroll, 1998; Saez and Zucman, 2014). However, the highly unequal distribution of net assets can be a source of macroeconomic instability. In the US household debt has been an instrument to mitigate consumption inequality against widening disparities in household income, resulting in a highly vulnerable pre-crisis growth model (Cynamon and Fazzari, 2008; ibid., 2014). In Europe, difficulties to adjust household portfolios to income and wealth shocks had an important role in depressing consumption and growth in crisis countries (Pontuch, 2014). The impact of the distribution of household saving rates might also have implications on external imbalances, via the substantial effect of the saving behaviour of the wealthiest on the aggregate, and the responsiveness of consumption to changes in stocks of wealth, with country-specific mechanics and magnitudes. Second, broader asset ownership might spur entrepreneurial activity and growth. By the commitment value of pledgeability, asset ownership is an important prerequisite to the access of credit: by easing funding constraints for less wealthy sub-populations, a more equitable distribution of assets might release entrepreneurship and innovation, and improve performance (Piketty, 1997; Bowles, 2012).[12] And finally, differentiating tax burdens

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[11] Indeed lifetime savings of the wealthy importantly contribute to wealth inequality (Yang and De Nardi, 2014); meanwhile, indirect taxes are proportional or progressive with respect to total expenditure, but regressive with respect to disposable income (Decoster *et al.*, 2010).

[12] On a detailed discussion of the effects of wealth inequality on macroeconomic efficiency, see Bowles (2012, ch. 4): the key argument goes that asset concentration prevents residual claims of individuals providing non-contractible work for owners of productive assets on the results of their action, which dis-incentivises performance. The positive impact of wealth and notably home

(continues)

by levels of wealth might also enhance the efficiency of taxation. At lower levels, to the extent that wealth is built up for later consumption, wealth taxation appears inefficient, incentive incompatible with the need for households to save for retirement, and indeed add a third layer of taxation on a base that has been taxed as income and will be taxed as consumption. Stock based progressivity aimed at wealth holdings beyond levels used for life cycle consumption smoothing, however, would allow to correct for the advantage of households holding such wealth, in particular in tax systems with reinforced indirect taxation, and complement the role of the income tax system to mitigate socio-economic inequality.[13]

4 Stock based capital taxation: aspects of design and implementation

4.1 The taxation of housing

The efficiency implications of increased housing taxation are straightforward. To date, in many EU Members the consumption of housing services by owner-occupiers receives a privileged treatment relative to other investment, mostly due to outdated valuations of the base. Neutrality would require align housing taxation with the approach to other investment on the one hand,[14] and to savings on the other. Increasing the role of housing taxation in overall revenue, not least to make up for the tax shift away from labour, is recommended by international policy advice, spearheaded by the OECD (2010). Its beneficial efficiency effects are straightforward: reducing incentives for housing investment could free up resources for more productive investment, asset price increases allow for the taxation of economic rents; and housing taxation is evasion proof.

When it comes to equity, the effects of housing taxation require differentiated consideration. The case for taxing imputed net income from housing in line with income from other investment is straightforward, in order to put home owners and renters with otherwise similar characteristics who invest in other assets on an equal footing. However, an increase of the tax burden on housing beyond that level, in the sense of genuine asset taxation, requires more careful consideration. True, among the households in the bottom deciles of the income distribution, the share of owner-occupiers is considerably lower than in higher ranks, and their housing consumption is more modest (ECB, 2013). Therefore, the increased taxation of household main residences appears to contribute to more equity. However, a closer examination shows that household main residence assets constitute equalising wealth. In several euro area countries, over half of the households even in the bottom income quintile are homeowners. Typically, home equity is the characteristic asset of the middle class, while home equity possessions of households on the top of both the income and the wealth distribution are under-proportional relative to their share in overall household wealth. According to statistical decomposition analysis, precisely because its share in total net wealth of low wealth households tends to be disproportionately larger, owner-occupied housing has an equalising effect in euro area countries. At the same time, wealth inequality is found to be lower in countries with higher rates of owner-occupant housing (Bezrukovs, 2013; Sierminska and Medgyesi, 2013).[15] Indeed home ownership appears effective to

ownership on entrepreneurial activity in the presence of credit constraints is backed by empirical evidence (e.g., Evans and Jovanovic, 1989; Schmalz *et al.*, 2013). However, implications of capital concentration on growth have not yet been fully explored. Possible benefits of asset concentration might include the availability of venture capital at a lower cost, given that risk aversion is decreasing in wealth (Carroll, 2000).

[13] To the extent that such taxation of higher stocks of wealth reduces incentives for further wealth accumulation, such taxation might also facilitate social mobility by chaning the distribution of investment risk along the wealth distribution.

[14] Such neutrality warrants the taxation of imputed income net of costs, including interest for debt-financed homeownership, maintenance costs, as well as an equity allowance where this is granted for business investment.

[15] Based on decomposition analysis of wealth inequality, Sierminska and Medgyesi (2013) argue in favour of encouraging home ownership throughout the wealth distribution to promote a more equitable distribution of wealth. For a similar point on the role of home equity for most citizens but those on the very top at the wealth distribution in the US, see Yellen (2014).

build up savings: controlling for anterior savings and other relevant covariates, home owners are found to accumulate significantly higher wealth than renters (Di et al., 2007, Turner and Luea, 2009).[16] Increasing the tax burden on owner-occupied housing relative to other assets, even if beneficial for neutrality, might make modestly and moderately wealthy households more worse off relative to the most affluent, and deter households from investing in an own home, thereby aggravating rather than mitigating wealth inequality. For taxation policy, therefore, it might be useful to consider appropriate thresholds in order not to discourage home ownership at the extensive margin and block access to this vehicle of wealth accumulation. Furthermore, a more balanced distribution of wealth can only be supported if the taxation of owner-occupied housing beyond the level of imputed income is aligned with that of other assets, notably those held by the wealthiest. This is especially important in light of evidence that socio-economic inequality is driven by the concentration of income and wealth at the top of the distributions.

When considering taxing housing beyond the point of neutrality, the impacts of a shift of households' portfolio composition away from housing should be weighed with care. Taxing imputed income of owner-occupiers is without question with regard to achieving neutrality with other investment. Efficiency arguments can be invoked to support the taxation of owner-occupied housing beyond this point; however a perspective focused on equity suggests the pursuit of this approach with diligence, notably with regard to the incentives of home-ownership at the extensive margin.

- **After plenty of inconclusive research and detailed scrutiny, home ownership is still found to have positive social impacts. At the same time, some of its alleged economic costs only indirectly relate to homeownership as such.** It has been long posited that high levels of owner occupancy foster local social externalities such as higher local political participation. Empirical research has failed to produce conclusive evidence on most asserted advantages, mostly due to the difficulties to isolate exogenous variation in home ownership from other variables. One area where benefits of home ownership are robustly established, however, is on socially desirable traits of children (Dietz and Haurin, 2003). This is particularly noteworthy in light of the growing recognition of the long-run impacts of interventions early in life. On the cost side, home ownership came into discredit in the wake of the economic and financial crisis. However, house price bubbles in some countries and excessive leverage being at the center of the crisis are a result of inappropriate prudential and lending regulation. Another, frequently raised argument is that home ownership acts as an impediment to labour market adjustment by migration. This, however, can again be addressed by keeping the costs of household relocation low, notably by eliminating excessive fees and taxes on real estate transactions, and by possibilities to exchange pledged assets and early repayment of mortgages without large penalties.[17]
- **When reviewing incentives for different types of assets in household portfolios, it is important to consider the risks associated with different choices.** Most households have only limited capacity to absorb large financial losses. Provided that prudent mortgage lending, policy measures to curb large boom-bust cycles in housing markets, and consumer friendly credit regulations are in place, the financial risks associated with leveraged home-ownership might be better understood and managed by households with average financial literacy than those implied in many other products available for long-term investment.

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16 Leveraged home ownership offers a commitment technology to stick to a saving plan: the high (psychical) cost and some delay in liquidation might promote short-term discipline among dynamically inconsistent savers as described by the "golden egg" model of Laibson (1997).

17 Furthermore, recent work has highlighted that a high level of labour mobility is not uniquely associated with economic benefits: studying the impact of mobility on macroeconomic adjustment in currency unions, Farhi and Werning (2014) highlight that labour outflows produce internal demand shortfalls in the non-tradable sector, so that out-migration provides no relief to the stayers.

- **Home ownership has specific qualities to maintain households' well-being upon retirement.** Retiree owner-occupiers have an important determinant of household wellbeing kept constant and providing a shield against price level developments and house price inflation transmitted into rents over the longer run. In addition, they don't face the risk of consuming up their assets before death, be it by unplanned longevity or time inconsistent consumption behaviour. At times where the generosity of income replacement by public pensions is expected to decline and with private pension funds being subject to political risk, owner-occupied housing might gain in importance in households' aspirations to maintain their standard of living upon retirement. These aspects might be part of the explanation why reform plans to introduce taxes on owner-occupied housing without appropriate qualifications tend to be unpopular. For this reason, the fiscal approach to housing should be integrated into the policy framework on retirement wealth, possibly putting housing investment on par with other forms of retirement saving.
- **In turn, extending the taxation of housing over rental property raises the issue consideration of incidence.** To the extent that the supply of housing is fixed (and foremost determined by building regulation), part of a tax on income from renting will fall on the renters, weakening the case for housing taxation for the sake of equity, and likely to necessitate measures to mitigate the burden for low-income households.

When introducing housing taxation reforms, issues of intergenerational equity should be borne in mind. Typically, elderly homeowners are mortgage-free; in many countries today's pensioners were shielded from the effects of fiscal adjustment policies relative to younger households (Darvas and Tschekassin, 2015). Mortgaged younger households, in turn, might have seen their net worth severely decline in countries undergoing a decline in home prices, perhaps into negative territory, and might have experienced negative income shocks that increase their repayment rates. In times of income instability and more cautious lending in some countries, youngest households have a more difficult time to acquire housing assets altogether. In order not to reinforce inequities among generations, it would be pertinent to consider net wealth positions in the approach to housing taxation.[18]

4.2 The taxation of net wealth

For the pursuit of a distributional perspective in asset taxation and the full advantage of the stock based approach, a comprehensive net base appears appropriate. A partial approach to wealth taxation, in particular including broadly held assets but excluding those held by the wealthiest households, might worsen wealth inequality instead of mitigating it. Putting higher burdens on housing but not addressing and financial wealth risks such outcomes: in terms of overall wealth, it affects households in the middle of national wealth distributions relatively highly but provides an advantage to the households at the top of the distribution, who tend to held most of a country's financial and business wealth.

Net wealth taxes avoid the challenges of capital import and export neutrality but might produce other challenges instead. Capital export neutrality requires that income from capital invested at home or abroad receive similar tax treatment. This cornerstone of allocation efficiency has become increasingly important in countries' approaches to capital income taxation over the past decades. In contrast, capital import neutrality requires that capital income from both domestic and foreign investors receive the same tax treatment; non-compliance leads to differences in inter-

[18] In the wake of the financial crisis, broad-spread home ownership tended to be associated with the build-up of real estate bubbles and impediments to macroeconomic adjustment. It should not be forgotten that many such economic difficulties do not follow from home ownership as such, but from policy mistakes in other areas such as credit regulation.

temporal marginal rates of substitution across countries and distortions in the international allocation of savings. Both principles are impossible to achieve across countries with non-uniform capital taxation; policy choices have rather favored the first principle. Within the EU, however, the European Court of Justice has increasingly pushed toward the respect of the second, making the taxation of capital flows by Member States increasingly difficult, contributing to lowering standards of taxing capital income. A tax on net wealth based on residents' wealth world-wide would allow for the correction of the resulting bias in favor of capital income while avoiding immediate conflict with the principles of capital import and export neutrality. The group of taxpayers would have to be carefully circumscribed; the domicile concept in the UK shows the scope for policy choices in this regard. Distortions in the international allocation of high net worth individuals might arise but should not be overrated at moderate rates of a net wealth tax. However, if more countries choose to tax net wealth, challenges of double taxation might require the adoption of common international principles.

The economic effects of a net wealth tax should be overstated: but such a tax could enhance the fairness of taxation. Other than a tax on capital income, a tax on worldwide net wealth of resident taxpayers would not necessarily have to increase the cost of capital, because it would apply to households, not enterprises. Furthermore, it would not affect foreigners' investment. At the macroeconomic level, the broader distribution of wealth can be expected to have positive effects, such as the loosening of credit constraints at the lower part of the wealth distribution to support entrepreneurship, and improved self-reliance in life cycle savings to alleviate pressure on public budgets. Such objectives will not be achieved by a moderate wealth tax alone, but such a tax might contribute to a broader stream of policies to distribute net benefits of economic development more evenly and enhance economic and social stability.

To serve the purpose of equity, the taxation of wealth has to build on a strong international reporting and anti-avoidance framework. Levying taxes on broadly distributed assets but excluding those held by the wealthiest households is deficient in fairness terms and might contribute to socio-economic inequality instead of mitigating it. Restricting the taxation of wealth on assets held domestically might invite to capital flight. Hence a net wealth tax on worldwide assets of taxable residents appears appropriate. This, however, is associated with difficulties similar to capital income taxation. Complementing taxation systems with asset based components will require the development international standards to avoid double taxation, as well as mechanisms of third party reporting and international information exchange on residents' assets held abroad. Recent advancement with the international reporting of capital income suggests that this perspective should not be dismissed as unrealistic.

From an efficiency point of view, a progressive wealth tax should not affect lifetime consumption smoothing of average citizens. A part of wealth inequality across households is driven by the age structure of the population, notably by savings for retirement and insurance against longevity and health risks. In particular in countries where private savings for such purposes are part of the welfare system, a tax on the build-up of wealth at average levels would provide disparate incentives. This suggests appropriate zero-tax allowance thresholds, also supported by lighter administration; however no-duty thresholds must not be so high to jeopardize the production of revenue. Finally, mechanisms for the adjustment of the bands have to be considered to avoid the erosion of equity by long-run asset price increases. In addition to a broad base, the setting of the rate structure of a wealth tax is also a prerequisite of broader political acceptance.

Possibly high wealth tax duties relative to realized or earned income require appropriate administrative solutions. Wealth taxation might be considered confiscatory if it consumes a large share of income flows or if it hits the substance of the asset. This can happen if returns are reinvested, in particular in combination with low labour or public pension income, or if assets yield low or negative returns. To yield to such arguments, practice has been to draw an upper bound to wealth taxes as a share of overall income, e.g., in the Netherlands: however this obviously invites to evasion. In any case the normative argument of confiscation is questionable if wealth is considered a different dimension of utility than income. In addition, under assumptions that public funds provide social benefits and that bounded wealth inequality is valued by society, there is no obvious reason to encourage the reinvestment of business profits while keeping realized income flows and tax payments low. Finally, difficulties of tax compliance of wealth-rich but income-poor households could be handled with provisions for deferral.

The effectiveness and fairness of wealth taxation also rests upon limitations to tax shelters available to the wealthiest and to outright exclusions of certain assets from the base. Such shelters include legal vehicles to conceal the beneficial ownership of assets, limitations of wealth taxes as a share of realised income combined with generous write-off possibilities, and exemptions of business wealth from taxation, which is most acute in the context of inheritance taxation (see Section 4.3).

Switzerland provides an example that a net wealth tax is feasible. Switzerland's sub-federal entities have been traditionally operating taxes on individuals' net wealth. Typically also today, they cover real estate and other real and financial capital, including businesses and life insurance and pension wealth, as well as collections of art, assessed as close as possible to fair market value. Liabilities are deducted; retirement savings are exempted before access. Taxpayers must declare world-wide assets, but enterprises, permanent establishments and real estate abroad are not included in the base; non-residents face limited net wealth tax liability. Rates are progressive usually between 0.3 to 0.7 per cent of net wealth, up to 1 per cent. Some but not all cantons operate shields to prevent the depletion of assets by tax burdens above income; indeed flexibility in the valuation of assets together with this shield allows diminish the effective tax burden and the performance of the tax in terms of fairness. The net wealth tax can provide up to 10 per cent of sub-national revenue. Among its benefits, it is considered helpful to provide information to assess the reliability of income reporting.

4.3 Event-based wealth taxation: gifts and bequest

Instead of taxing assets in a recurrent fashion, taxes on assets can also be levied upon transfer of ownership. Apart from the real estate transfer tax, the economic effects of which are unambiguously assessed negative, the most important of these are gift and inheritance taxes. The design of these two is similar in some countries and dissimilar in others, reflecting different approaches to the encouragement of planned bequests. Inheritance taxation is of particular interest to date, given that the oldest cohorts in many European countries could participate in the accumulation of some wealth relatively broadly, that will change ownership in the forthcoming years.

Economic theory provides arguments in support of taxation of inheritances, but the precise policy prescriptions are not clear. To start with, from the perspective of heirs, bequests are unearned income: it appears straightforward to apply the prevailing rate of (capital) income tax on them. Besides, from an efficiency point of view, unintended bequests offer an ideal situation to tax, since a behavioural response has not been made in a forward-looking fashion and cannot be given ex post. Complications arise if the utility of the bequeather is considered. Here, policy prescriptions depend on the normative approach taken (Boadway et al., 2010). In the welfarist public policy framework that builds on the strict consideration of sources of individual well-being, accidental bequests should receive lighter taxation because they offer no utility to the bequeather: this, however, contrasts with the efficiency argument. In turn, bequests that provide utility to the bequeather, in particular strategic bequests offered in return for services such as caring, might be taxed similar to other consumption on the side of the bequeather. In two other cases, 'warm glow' and altruistic bequests – where the utility of the bequeather is increased by good deeds, or by the utility of the recipient – their consideration for taxation is ambiguous. Furthermore, social norms about family raise some questions on the intuition to subject bequests to income tax in the heir's schedule. Notably the recognition of parenting as socially beneficial activity that involves some altruism also beyond the accumulation of assets suggests some leeway for the possibility to pass on resources to one's offspring with lighter taxation than a separate income stream.

At the current juncture, inheritance taxation is expected to address two important policy challenges: the mitigation of dynastic wealth inequality and the redistribution of resources across generations. As taxation overall, inheritance and gift taxation first and foremost serves the objective of generating revenue. At the current economic and social conditions in EU Members, two other policy objectives are increasingly gaining recognition: first, contributing to a more equitable distribution of resources in the sake of equality of opportunity, and second, contributing to a more balanced distribution of resources and opportunities across generations where older generations tend to have higher lifetime incomes and savings than younger generations can expect to have, while the capacity of the latter to save and invest is squeezed by high dependency ratios.

Inherited wealth has become increasingly relevant in advanced economies, while the role of taxation to mitigate the intergenerational transmission of wealth inequality is less clear. Empirical evaluations disagree on the volume of inherited wealth. For the US, influential estimates on the share of inherited wealth in overall household wealth in the late 1980s suggest a range of about one to two fifths (Modigliani, 1988, Barthold and Ito 1992). Looking at another metric, for France, Piketty (2011) finds that the annual flow of inheritance made up for about 15 per cent of national income in France most recently, up from about 5 per cent in the post-war period. How inheritance translates the distribution of wealth to the next generation is not well understood: in this regard a complex interplay of factors such as the intergenerational transmission of earnings inequality, family size, (dis-) similar socioeconomic status of parents, preferences on the splitting of bequests, etc. are at play, as well as opportunities to amass 'new' wealth from income and income mobility over the life cycle. Indeed inherited wealth might be scattered by the heirs' generation,[19] putting a brake on the build-up of longer-term dynastic wealth accumulation.

Irrespective of impact, taxing inheritances appears to be a command of justice: implementation can be adjusted to country-specific norms of solidarity within the family. No matter what the impact of taxation on the long-term distribution of wealth, inheritance constitutes unearned advantage. This makes a very strong case for the taxation of inheritances, in particular in view of creating a level playing field and fostering justice in terms of opportunity in the generation of heirs. At the same time, norms of justice leave scope for variation in the approach to inheritance taxation. Survey-based cross-country comparisons reveal significant differences in households' bequest motives that correspond to prevailing social norms, most importantly those regulating inheritance irrespective of legal provisions (Horioka, 2014). Variants of welfarism suggest taxing bequests involving some altruism more lightly than strategic bequeathing;[20] this corresponds to inheritance tax provisions in many countries that typically levy lower rates on bequests to close relatives and exempt bequests to charities. In fact today's plurality of family types and sequential family formation notwithstanding, families continue to be economic units with risk sharing, the

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[19] In their theoretical analysis supported by calibration with German data, Grossmann and Strulik (2010) argue that the continuation of family firms by unable managers has important negative welfare effects on the third generation of heirs.

[20] See the discussion of Boadway *et al.* (2010). They argue that under the "restricted welfarism" approach, with some arguments the case can be made even for the non-taxation of wealth transfers.

pooling of resources, and joint investment decisions;[21] welfare systems of EU Members acknowledge these roles to different extents,[22] e.g., by means-testing social benefits against spouses' resources, or explicitly positing a duty of children to provide for the care of aged parents before drawing on social budgets. These considerations support the taxation of bequests but suggest some leeway to yield to social norms prevailing in the country by preferential treatment of some bequeathing within the family. This can be done with reduced rates and thresholds to allow populations with modest wealth to pass it down to offspring. The acknowledgment of intergenerational solidarity in the policy discussion about inheritance taxation might promote its political acceptability, to the extent that it meets norms shared by the affected citizens; this approach does not preclude the promotion of distributional justice by the taxation of higher inheritances that arguably contribute more to wealth inequality. Acknowledging a positive role of resource sharing across generations and some dynastic asset-based welfare could also be done by tax exempt amounts of bequests granted per heir: overall donee based elements of inheritance taxation are more conducive to distributional equity because they provide privilege to split bequests.

The positive role of intergenerational provision notwithstanding, the case for the unlimited continuation of family assets' unity is weak. A central challenge to distributional equity in inheritance taxation in practice relates to the reduction of effective taxation at high levels of wealth among others by exempting business assets. This is often posited to be crucial for the vitality of family businesses and the national economies more broadly, including the preservation of jobs. At the same time, the opportunity to shelter private wealth from inheritance taxation under business tax exemption schemes appears a key driver of inequity in approaches to tax bequests. Dynastic family businesses might be a framework to pass on not only productive assets but firm specific know-how and entrepreneurial behaviour: still it is difficult to comprehend that recipients of such privilege to foster their productivity should be unable to foot a bill of inheritance taxation over an extended redemption period. Also empirical findings support the hypothesis that dynastic family management might slow down productivity increases within the firm and the Schumpeterian process of creative destruction in the overall economy (Bloom, 2006; Grossmann and Strulik, 2010). As for business assets, the case is often made to exclude the family home from the taxation of bequests, referring to the cost of adjustment for surviving family members. On economic grounds however there is no reason to favour this specific type of assets over others in the overall framework of inheritance taxation: the diminution of hardship to the survivors can be mitigated with appropriate schemes for deferral; besides, with appropriate thresholds, the fraction of affected populations can be expected to be small.

The design of inheritance taxation could usefully consider different generations' needs within an overall approach of equity. With increased longevity, the age to become heir is also increasing on average. From the perspective of potential heirs, expecting a bequest is a risky strategy to provide for retirement wealth; the timing of relative certainty about bequests leaves little possibilities to step up own savings if necessary (Pfeiffer and Braun, 2011). At the same time, some economists posit that speeding up the flow of assets to younger generations in higher need to invest could be more productive economically (Arrondel and Masson, 2013). To this end it might be useful to incentivise the skipping of generations in bequeathing, e.g., by equal rates for children and grandchildren, or the possibility of tax-exempt lifetime gifts of heirs to their children within a certain period. A further way to foster the transfer of resources to younger generations is to provide

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21 From a sociological point of view it has been argued the aging societies of the advanced economies tend to be age-segregated with age-homogeneous institutions, where resource transfers across generations are crucial to maintain age integration (Uhlenberg and Riley 2000, quoted after Kohli, 2004).

22 The heterogeneity of European and other OECD economies with regard to the role of the family as a welfare provider along with the market and the state has been extensively analysed by G. Esping-Andersen (1999), the founding father of the research on the typology of welfare states.

preferential tax treatment for lifetime gifts relative to bequests. This is problematic however as lower levels of wealth must be held by the donor for precaution: certainty about the size of the bequest will only come with death. Schemes that provide relief for the transfer of assets with the reservation of usufruct to the donor give preference to the most wealthy whose asset income is sufficient to meet precautionary needs, and are thus inimical to the objective of equity.

With regard to equity, unlimited tax exemptions to gifts made to charities are doubtful. The tax exemption of donations to charities appears to kill two birds with one stone: it fosters the pro-social behaviour of the wealthy and might alleviate the burden of the state to deliver social services. The delivery of services of public interest by charities might be efficient and show social organisation in line with norms of subsidiary. However by the financing of such charities the most affluent are better able than average citizens to shape societies according to their preferences; but charitable donations should not discharge the wealthy from the duty to pay inheritance taxes in line with the approach valid for any citizen. In this context it should not be overlooked that among the wealthy insight for the need to support the state – and not just of private social welfare providers – notably in times of economic duress for broader populations does exist.[23]

Norms of equity are central to approaches to inheritance taxation; in this regard some clarifications are due. First, distinctions of sources of wealth do not provide the only points of departure to support inheritance taxation. Proponents of taxing bequests tend to assert that this could correct for the advantageous treatment of capital income during bequeathers' lifetime, building on the idea that high levels of wealth stem from unearned income, which is more straightforward to tax post mortem than the fruits of a laborious life. However in some cases large estates can be accumulated from labour income as well. Second, capital gains constitute a challenge to equal treatment and offer a route for dynastic wealth accumulation: rebasing assets upon inheritance without taxation gives advantage to those that are able to delay realising those gains into the next generation. Such advantage is hard to justify; at the same time considering inheritance taxation a substitute to a capital gains tax on bequeathed assets provides unfair treatment to bequeathers of non-appreciated assets. Therefore, capital gains taxation should be consistently implemented at the moment of separation from assets by either sale or bequest, and kept conceptually separate from inheritance taxation. With appropriate periods of deferral, liquidity concerns do not appear valid against such an approach. Finally, proponents advocate inheritance taxation as a key instrument of the state to foster a specific perspective on equity, namely the equality of opportunity. Substantial bequests obviously violate equality of opportunity: but taxation alone only goes half-way to foster this objective. Therefore a more comprehensive policy commitment to the promotion of equal opportunity might also raise support to the taxation of bequests.

The small amounts of revenue collected and the cost of administration are not arguments against inheritance taxes as such. To date, the contribution of inheritance taxes to overall public revenue in EU Members is relatively small (see Section 2.2). However this might be due to an easy approach toward larger estates. Opponents of inheritance taxation also invoke the difficulties and costs to establish the value of certain assets. This question pertains to any approach to link tax burdens to wealth: the related difficulties should not be overstated (see Section 3.2). In any case, proportionality suggests some tax-free threshold to provide relief to administrations from the burden of valuation.

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[23] In the US, in 2012 the "Responsible estate tax proposal" calling for lowering the estate tax threshold and rising applicable rates was supported by 33 highly wealthy individuals such as Warren Buffet and George Soros (http://faireconomy.org/sites/default/files/2012%20Estate%20Tax%20Sign%20On%20Statement%202_0.pdf, accessed on 20/02/2014). Already in 2011, similar statements were made by highly wealthy French citizens, summarised by http://www.ft.com/intl/cms/s/2/9e6cd460-cf40-11e0-b6d4-00144feabdc0.html#axzz1WY8h9o5H

Antagonism of broad populations against the taxation of inheritances might be due to weaknesses of policy design and credibility, as well as insufficient information. The taxation of inheritances importantly builds on core social concepts and norms like property rights, family, opportunity, and merit prevailing in a society; norms of justice and equity have a key role in the justification of such a tax. However where practiced, inheritance taxation often tends to shelter portfolios of the most wealthy from the tax:[24] this considerably weakens the case for the taxation of bequests as an instrument to foster a more equitable distribution of wealth, in particular as household wealth tends to be concentrated at the top of the distribution. If operated as a redistributive instrument with revenue mainly generated by the middle class, such a tax might clash with middle class quests of upward social mobility and of self-insurance against downward mobility in a dynastic perspective. Such reservations might be particularly strong where perspectives of increased well-being are no longer seen ascertained to younger generations, and where the ability of the state to provide status-preserving insurance is questioned. These arguments are not to exculpate policy-makers from promoting the equality of opportunity, but need to be taken into consideration in view of the necessary support of appropriate tax instruments in the electorate. Finally, insufficient information about the distribution of bequests and suspicions of time-inconsistent policies and fiscal drag will make even those citizens reject the idea of inheritance taxation who would normally benefit from it.[25] In order to avoid timing decisions around expectations of change, the adoption of an approach to tax inheritances has to build on constancy and broad policy consensus (Boadway et al., 2010). Its acceptance can be expected to increase if the right balance is found between redistribution and self-providence in line with the prevailing social norms and on the one hand, and the promotion of equal opportunity by policies more broadly on the other.

In comparison with a net wealth tax, the taxation of inheritances and gifts has specific pros and cons. The former levies a small tax on capital at a relatively high frequency, the latter do the same at a higher rate and lower frequency. Over 30 years, an annual asset tax of 1 per cent diminishes the capital stock by about the same amount than a one-off levy of 26 per cent every 30 years. Inheritance taxation has the advantage of efficiency as it allows for fluctuations of wealth during the course of life, and also does more for the comparable treatment of individuals with pension income and asset-based post-retirement wellbeing respectively.[26] On the downside, the burden put on individuals' and families' wealth put by inheritance taxation has some individual variation, reflecting differences in life spans. Also, broad reservations against inheritance taxes across populations as suggested by anecdotal evidence raise the question of salience: in this regard there might be a trade-off between the frequency and the rate of taxation. In countries where neither tax is present, with appropriate thresholds, a continuous capital tax for high net worth individuals might be easier to accept than a cumulative burden associated with the emotionally charged event of death. As concerns the challenge of administration costs and notably valuation, both approaches to capital taxation tend to be heavily criticised. Against this background a less frequent valuation of taxpayers' assets might have some appeal. However, this approach ignores potential informational benefits to tax administrations from obtaining higher frequency stock and flow data about individuals' ability to pay taxes. Finally, net wealth taxes appear less complex in international environments because the dimension of the donee is missing and does thus not create additional variation and complication. Likewise, net wealth taxes imply a lesser need for normative

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[24] This perception is found e.g., in the United Kingdom (Boadway *et al.*, 2010).

[25] It is questionable if better information improves the possibility to promote better policies, though (Bartels, 2004; Krupnikov *et al.*, 2006).

[26] Depending on the organisation of retirement income for different populations, the consideration of pension entitlements might change household wealth inequality considerably. E.g., for Germany 2007, Frick and Grabka (2010) show that the Gini coefficient of net wealth inequality among individuals aged 17 and more drops from 0.79 to 0.64 once the net present value of pension rights is taken into consideration.

choices: the main question at stake is the rationale of taxing assets, while the ambiguity of bequest motives and judgment about altruistic preferences does not come into play.

4.4 *Implementation challenges to wealth taxation*

Arguments often brought up against more comprehensive taxes on wealth refer to difficulties with implementation. Policy approaches to taxing assets tend to be piecemeal, either excluding certain assets, or incomplete to address particular challenges of introduction: this might add to the difficulty of the subject in the policy debate. Addressing the main challenges to implementation – some of which are technical, while others relate to social contract more broadly – might enhance the public acceptance of wealth taxation.

The availability of information is crucial for a fair and effective net wealth tax: in this regard a shift of paradigm is underway. Owner-occupied housing is fiscally attractive because it is near-impossible to avoid, while the main argument against comprehensive wealth tax that would be more equitable in principle is avoidance: thus there is an inherent challenge to fairness in wealth taxation. But as the damage to tax bases by the lack of an international taxation framework is increasingly recognized, encouraging developments are underway, that might help implement broader based taxes on wealth as well. Notably since 2010, the US Foreign Account Tax Compliance Act (FATCA) has set new standards of worldwide information sharing on taxpayers' income.[27] Among EU Members, advances toward better tax policy enforcement have been made in particular by the adoption of Directive 2011/16/EU on administrative cooperation in the field of taxation; the OECD Global Forum creates yet another international framework for strengthening tax policy cooperation. As an example at the national level, recognizing that quality regulation cannot be based on double standards, in 2013, the UK government committed to create a publicly accessible central registry of company beneficial ownership in the framework of the international "Open Government Partnership" platform and the then-G8 respectively (Cabinet Office, 2013). These encouraging developments notwithstanding, there is still a long way to go to restrict possibilities of tax avoidance at high levels of income and wealth (Zucman, 2014; Johannessen and Zucman, 2014). This will also require action against tax havens and domestic tax shelters that allow for tax planning strategies only affordable to the wealthy. Eliminating such loopholes would improve the acceptance of taxes on asset holdings at lower levels of wealth.

Difficulties of valuation and administration costs are associated with challenges to wealth taxes, but they do not constitute arguments against them. Illiquid assets' valuation gains changes are notoriously difficult to establish, which might jeopardize the perception of fairness in the taxation of net wealth. Also, high administration costs have been long-stated arguments against the taxation of net wealth. However, as the immediate cost of processing information has been rapidly declining thanks to IT advances, the administrative costs of wealth taxation might rather depend on establishing the standards to compile information. Stock and flow data, third party reporting and international cooperation, asset registries, socially appropriate "nil bands", and punishment of under-reporting could develop the necessary technical underpinnings of equitable wealth taxation in the longer term. Such information could also be used to establish appropriate methods of asset valuation. Where this fails, retroactive taxation upon change of ownership via market transaction could be applied.

[27] The FATCA framework establishes a worldwide system of reporting information on income derived from US assets or sales, including interest, dividends, annuities, royalties, rents, and realized valuation gains. Financial institutions including the shadow banking sector are incentivized to comply by a withholding tax of 30 per cent on payments to such institutions related to the covered income flows unless reporting agreements are entered with the US Inland Revenue Service.

Cash constraints are a weak argument against recurrent wealth taxes. Cash constraints affect (notional) asset returns that do not translate into liquidity, in particular utility from owner-occupied housing, gains from asset appreciation, and reinvested earnings. A progressive design of wealth taxation – with low rates for the least wealthy – mitigates the problem of cash constraints, as wealthier individuals will be more likely to receive higher liquid income. Hardship to the "wealthy hand-to-mouth" can be avoided by the deferral of the tax liability to the moment of liquidation. For businesses, equity finance of investment is a strong case for keeping liquidity outflows low: but tax-free thresholds might help small businesses, while owners or heirs of substantial business wealth can be expected to service tax obligations from capital gains, possibly stretched out over several years.

Citizens' reservations against wealth taxation need to be taken seriously. Objections against taxes on wealth will differ across types of households. To the extent that considerable parts of populations possess some wealth in most EU Members, the proposition of a wealth tax without qualifications or progressivity or a tax on housing in isolation will be perceived unfair unless attempts are made to raise contributions at the top of the wealth distribution. The tracking of ownership of mobile assets, on the other hand, might be seen with suspicion for fears of coercive and time inconsistent wealth levies. Against such reservations, the taxation of wealth will not gain political support as long as the public fails to perceive the benefits of public goods provision and the potential of the specific instrument proposed to mitigate socio-economic inequality. Therefore, public administrations and tax-benefit systems that deliver both on efficiency and fairness are cornerstones of wealth taxation. Special fiscal mechanisms, such as earmarking wealth tax receipts to fund forward-looking social objectives such as access to opportunity instead of plain redistributive spending might also enhance the acceptance of wealth taxes, notably among entrepreneurs who are less appreciative of social safety nets. Finally, safeguards and principles to preclude perceptions of unjust confiscation and expropriation might also be helpful.

5 Asset based taxation: the role of policy at the EU level

5.1 Wealth taxation in the framework of EU economic policy guidance

Taxes on wealth could be studied in the framework of policy guidance to EU Members. As a potential source of revenue, wealth taxation could be assessed just as other possible sources in terms of efficiency and equity. In the follow-up of the publication of Piketty's (2014) "Capital in the 21st century", citizens EU-wide have become more sensitive to inequalities in the distribution of wealth. The containment of wealth inequality might be a policy objective in itself but also in the sake of economic and social stability. Choices whether or not to adopt taxes on net wealth and how to design these are fully in the remit of EU Members; the role of the EU institutional level is only ancillary. Therefore it might be appropriate to consider wealth-based taxation in the policy advice process in particular in countries where broad debates have developed on the issue. In considering such a tax, its design has to be carefully evaluated with regard to distributional implications; a partial approach might enhance wealth inequality instead of mitigating it.

- To enable a thorough assessment of the potential of asset-based taxation in EU Members, better statistical information is necessary. To date, reliable information on the distribution of wealth is unavailable for a number of countries, mostly outside the euro area; also the Eurosystem HFCS is found to underestimate the upper tail of the wealth distribution, and does not consider public pension entitlements. The need to improve Member States' tax systems in terms of efficiency and equity under the challenge of population ageing, as well as the increasing relevance of wealth as compared to income as projected by Piketty (2014) will continue to provide valid arguments for the improvement of data availability and analysis to this end.

- To date, aggregate characteristics of tax systems might guide judgment on the suitability of taxing wealth. In the absence of robust micro data on asset distribution, as a first approximation, summary information on tax systems might help decide if the taxation of wealth might contribute to the improvement of national tax systems in terms of efficiency and equity. With regard to equity, taxes on wealth could appear useful in particular in countries with a high share of indirect taxation (as the former is regressive with regard to disposable income, see Decoster et al., 2010), large differences between the implicit tax rates of capital and labour, or flat and dual tax systems or little progressivity of income taxation respectively: these tax systems will in general be weak to mitigate income and consumption inequality, or disproportionately favor capital income, making the build-up of assets difficult for those receiving relatively low income, or living from labour income alone. Likewise, high post-tax income inequality might also hint at the fact that socio-economic inequality is only moderately attenuated by income taxation: here, asset based taxation at high levels of wealth might have an ancillary role to play.
- The potential of wealth taxes has to be evaluated under consideration of the total capital stock, private and public, as well as the welfare policy framework. Asset inequality might coincide with less social exclusion where efficient public administrations are able to offer quality social housing, and public pension systems are the main mechanism for income redistribution between life cycles: in such systems, life cycle driven variations in asset holdings are less relevant, and assessments of wealth inequality would warrant the consideration of pension entitlements. Another question concerns the taxation of net asset holdings in catching up economies. The impact of a tax on the concentration of wealth might have implications on the structure of production. The efficiency gain from concentrated business assets might be necessary for catching up economies to robustly integrate into global production chains. In addition, even in one generation's time after the demise of socialism, wealth inequality appears less pronounced in the new as compared to the pre-2004 EU Members. Therefore, wealth based tax instruments appear to have a weaker case in those countries.

5.2 Tax cooperation to allow the efficient and equitable taxation of wealth

Further to the European Semester, the need for administrative and policy co-operation constitutes another avenue for European perspectives in approaches towards taxing assets.

- With cross-country wealth holdings, issues of double taxation might arise; affected citizens as well a Member States would benefit from a common set of principles. As the taxation of net wealth is the exception rather than the rule among EU Members, cross-border issues with asset based taxation are mostly confined to inheritances and gifts, with multiple combinations of citizenship and residency of the bequeather and the heir and the location of the asset allowing for substantial complexity. In addition, to date, EU Members tend to levy higher inheritance taxes on border-crossing bequests (Hirst, 2015). The European Court of Justice requires EU Members not to discriminate among resident or own-citizen and other EU citizens as bequeathers or recipients of bequests. It has, however, no power to prevent the taxation of assets by two Member States, which is left to bilateral agreement between jurisdictions. In order not to create a complex set of bilateral agreements with mismatches and the possible effect of base erosion, a common framework for the taxation of asset, including inheritance and gift taxation, would be helpful. With the Commission Recommendation 2011/856/EU regarding relief for double taxation of inheritances, first steps have been taken in this regard.
- The effective taxation of financial wealth necessitates administrative cooperation and bank reporting also from beyond the border of the EU. As argued above, a comprehensive approach to asset based taxation needs to include financial wealth; this is likely to be a prerequisite of the broader acceptance of wealth taxation, including inheritances and gifts, among citizens.

However as shown by a number of recent scandals, tax avoidance makes it difficult for national tax administrations to verify information on wealth holdings, let alone to tax wealth. Recently substantial progress has been made to move toward administrative cooperation among tax authorities and bank reporting on foreign accounts. However as tax evasion is becoming increasingly difficult in some internationally cooperative jurisdictions, incentives for the remainder and new jurisdictions world-wide are high to provide frameworks conducive to tax evasion (Elsayyad and Konrad, 2012). EU Members can best address this problem at the international level when acting together.

5.3 A wealth levy to restore macro-financial stability: difficulties of implementation

As a conditionality item of macro-financial support for ailing sovereigns, the scope of wealth-based tax contributions appears limited. The perspective of a wealth levy to mitigate funding constraints of illiquid states has been brought up by the Bundesbank (2014). It is difficult to conceive the implementation of such an instrument in an effective and equitable way, however. To meaningfully add to debt reduction, such a levy will have to be imposed with a nontrivial rate up to 10 per cent (IMF, 2013) Fairness and the application of the residence principle would require equal consideration of residents' wealth kept domestically and abroad. Historical experience shows that the time needed for implementation of a wealth levy meeting such criteria is used to substantially erode the tax base by avoidance measures (Eichengreen, 1988). Besides, a levy on financial assets would probably necessitate capital controls, which require very strong conditions to be admissible in the EU. Ultimately, wealth taxation is less likely to be successful to remedy large-scale fiscal imbalances and should better be seen as a preventive instrument to maintain fiscal and social stability.

6 Conclusion

Asset ownership, in addition to income, has received increased interest with regard to shouldering the burdens of public finance lately. With the Eurosystem Household Finance and Consumption Survey, comparable data on households' asset holdings in euro area Member States have become available recently, showing country-specific characteristics of household wealth distribution in terms of composition, relation to income, and correlates.[28] Also, with the Ernst and Young (2014) cross-country review of wealth-related taxes commissioned by the European Commission, a comparative stock-taking of such taxes in place in EU Members to date exists, providing a detailed picture of these instruments.

Wealth is an indicator of the ability to contribute to the public purse in its own right, and the distribution of assets is a matter of economic policy relevance. A more equitable distribution of wealth has some positive impacts at the micro- and macroeconomic level that have not yet received sufficient attention. Furthermore, in the advent of improved means to process information, counter-arguments to wealth-based taxation on grounds of their ineffectiveness might lose their strength. While the restoration of universal income taxation with appropriate progressivity could do much to support a fairer distribution of tax burdens, wealth taxation has the additional advantage of allowing for progressivity based on assets, not income, thereby attenuating asset inequality arguably without inciting strong negative behavioural effects on capital accumulation for most taxpayers.

[28] This paper disregards multivariate analyses of these household wealth distributions. A growing body of empirical evaluations of the Eurosystem HFCS dataset can be found at the ECB's homepage: https://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_hfcn.en.html

There are several approaches to taxing wealth, with pros and cons of their own. Increasing the tax burden on owner-occupied housing has become a constant strain of policy advice on tax reform in EU Members lately: on this point, a careful approach is needed in order not throw out the baby with the bath water. A net wealth tax, in turn, is the fairest approach from an equity point of view: but certain conditions have to be met to implement it successfully. Taxes on inheritances, finally, are most used to tax assets, but conceptually they involve most complexity, due to the presence of two parties with possibly different jurisdictional affiliations, and due to the normative choices inherent to the taxation of bequeathing. To garner voters' support for inheritance taxation – that could, if appropriately designed, benefit a majority of voters as well as society as a whole – a circumspect approach is necessary, rendering account to country-specific social norms. To be in line with norms of justice and contribute to attenuating dynastic wealth inequality, inheritance taxation must not provide preferential treatment to assets held by the wealthiest.

Concerning wealth taxation, there is scope for approaches at the European level of policy making. Competence for direct taxation is allocated at the Member States' level; notwithstanding this, in the European Semester framework of economic policy advice asset based taxation might be considered – and indeed a sub-set of the base, housing, is considered – in the context of a budget neutral tax shift away from labour. For such policy advice to be appropriate to country-specific conditions, broader statistical information on household asset holdings is necessary, also including countries not yet covered by the Eurosystem HFCS. Beyond such policy advice, a more widespread application of wealth related taxes might increasingly result in issues of double taxation and non-taxation, leading to the need for a common framework of principles at the EU level. Finally, a fair approach to asset based taxation not sparing out assets held by the wealthiest is impossible without administrative cooperation and information exchange. Such cooperation has to go beyond the borders of the EU, calling EU Members to speak with one voice in the relevant international fora.

ANNEX
STATISTICAL TABLES

Table 5

Distribution of total assets across deciles of total household gross income in some euro area Members, 2010, Euro and per cent respectively

Decile		1	2	3	4	5	6	7	8	9	10
Austria	no. obs.	1101	1224	1208	1197	1223	1341	1173	1171	1109	1153
	mean	62838	85208	137843	156925	200882	233834	250171	366511	401310	925087
	s.e.	21082	15100	71556	50977	55303	61054	51859	126709	81437	249360
	mean/GDP	1.84	2.50	4.04	4.60	5.89	6.86	7.34	10.75	11.77	27.13
	decile sha	2.31	3.05	4.93	5.56	7.15	8.29	8.94	12.82	14.43	32.53
Belgium	no. obs.	867	1097	1122	1055	1110	1196	1204	1155	1292	1537
	mean	150811	168236	279225	245557	368106	321232	403572	449226	500980	804864
	s.e.	28810	17264	44854	29938	60801	31003	34751	44672	37715	59691
	mean/GDP	4.42	4.93	8.19	7.20	10.79	9.42	11.83	13.17	14.69	23.60
	decile sha	4.11	4.55	7.58	6.69	10.03	8.61	10.93	12.22	13.59	21.69
Cyprus	no. obs.	412	471	513	538	520	581	750	714	732	954
	mean	249349	342777	372584	380075	418342	552521	625011	981427	1373982	2141730
	s.e.	69686	130884	130277	59135	145181	119674	95315	205748	192370	404335
	mean/GDP	11.87	16.32	17.74	18.10	19.92	26.31	29.76	46.73	65.43	101.99
	decile sha	3.41	4.58	5.12	5.06	5.66	7.38	8.43	13.21	18.54	28.59
Germany	no. obs.	1228	1127	1204	1262	1464	1643	1689	2075	2615	3518
	mean	41159	53231	70272	97224	134176	150365	179936	274419	442485	783719
	s.e.	12240	13716	16426	19253	15878	16364	12337	51375	73663	94859
	mean/GDP	1.35	1.75	2.30	3.19	4.40	4.93	5.90	9.00	14.51	25.70
	decile sha	1.92	2.37	3.10	4.39	6.01	6.82	8.04	12.40	19.82	35.13
Spain	no. obs.	2482	3150	2717	2763	2637	2541	2756	2825	3120	5994
	mean	133447	160260	172219	223873	238645	300106	303371	353589	449885	911153
	s.e.	7889	9000	8927	13715	21126	32913	20725	23172	29065	60023
	mean/GDP	5.88	7.06	7.59	9.86	10.51	13.22	13.36	15.58	19.82	40.14
	decile sha	4.13	4.96	5.30	6.95	7.47	9.20	9.38	11.06	13.49	28.06
Finland	no. obs.	3665	3250	4065	4660	4680	5515	6110	6215	7185	9600
	mean	57267	66635	95618	123239	140213	170715	210365	242927	286079	585926
	s.e.	3970	4403	4461	4837	5081	5737	6208	6594	6800	15244
	mean/GDP	1.72	2.00	2.87	3.70	4.21	5.13	6.32	7.30	8.59	17.60
	decile sha	2.89	3.37	4.83	6.23	7.08	8.63	10.64	12.27	14.46	29.61
France	no. obs.	6860	6115	6195	6225	6230	6605	6585	7110	7930	15175
	mean	82069	84987	103995	149564	154193	192076	239680	278044	366258	932269
	s.e.	10316	6014	6729	12148	7699	9005	10163	14401	9867	54991
	mean/GDP	2.74	2.84	3.48	5.00	5.16	6.42	8.02	9.30	12.25	31.18
	decile sha	3.21	3.26	4.02	5.81	5.95	7.44	9.28	10.76	14.18	36.09
Greece	no. obs.	1436	1451	1498	1601	1530	1487	1547	1424	1422	1459
	mean	66085	85012	93032	120821	137101	162965	165658	187711	227395	353503
	s.e.	8150	6702	6180	10287	9502	15451	16885	19023	14039	23649
	mean/GDP	3.32	4.27	4.67	6.07	6.89	8.19	8.32	9.43	11.43	17.76
	decile sha	4.16	5.36	5.78	7.95	8.30	10.07	10.30	11.75	14.26	22.07
Italy	no. obs.	3975	4015	3905	4030	3635	4105	4045	3980	4120	3945
	mean	108758	112185	145638	173529	199735	225736	288400	316128	386400	914981
	s.e.	19329	9406	9266	14328	10271	11860	18626	15987	16082	46946
	mean/GDP	4.23	4.37	5.67	6.75	7.77	8.78	11.22	12.30	15.04	35.60
	decile sha	3.80	3.90	5.07	6.05	6.95	7.86	10.09	10.98	13.48	31.81
Luxembourg	no. obs.	413	331	329	355	369	393	551	523	646	840
	mean	255428	286496	479022	363635	510705	590730	663460	994111	1248895	2547354
	s.e.	52162	72994	127005	50473	70911	76489	51219	203665	296445	446076
	mean/GDP	3.30	3.70	6.19	4.70	6.60	7.63	8.57	12.84	16.14	32.91
	decile sha	3.28	3.62	6.05	4.58	6.65	7.17	8.39	12.47	15.83	31.96
Malta	no. obs.	463	486	469	439	398	386	425	371	394	384
	mean	164142	198366	224412	276607	249900	266936	324982	422015	474172	1197901
	s.e.	25501	31192	27304	37496	34070	50565	49986	53064	57821	514910
	mean/GDP	10.52	12.72	14.39	17.73	16.02	17.11	20.83	27.05	30.40	76.79
	decile sha	4.37	5.24	5.94	7.29	6.62	7.06	8.66	11.04	12.77	31.01
Netherlands	no. obs.	527	458	501	571	528	660	671	779	875	935
	mean	209423	153435	174193	193547	189349	229478	265284	327899	340775	438820
	s.e.	29812	30568	32121	29753	31519	27520	28849	42959	30899	37759
	mean/GDP	5.93	4.35	4.93	5.48	5.36	6.50	7.52	9.29	9.65	12.43
	decile sha	8.38	6.06	6.95	7.71	7.47	9.05	10.53	13.01	13.52	17.32
Portugal	no. obs.	2531	2087	2165	2205	2034	2029	2157	2167	2152	2493
	mean	75956	67679	81798	103073	112799	141854	147628	162344	229282	582353
	s.e.	7357	10013	11184	11940	9525	14126	10988	11156	19414	68064
	mean/GDP	4.66	4.15	5.02	6.32	6.92	8.70	9.06	9.96	14.07	35.73
	decile sha	4.59	3.86	4.85	6.00	6.63	8.34	8.66	9.57	13.40	34.11
Slovenia	no. obs.	110	121	121	195	209	218	144	192	225	180
	mean	131029	44842	129073	100119	137651	140398	124661	146604	253508	335286
	s.e.	28780	13274	17398	13544	23948	22315	42521	21271	33193	55061
	mean/GDP	7.57	2.59	7.46	5.79	7.96	8.12	7.21	8.47	14.65	19.38
	decile sha	8.79	2.87	8.45	6.41	8.95	9.09	8.18	9.39	16.83	21.03
Slovak Republic	no. obs.	988	984	1072	1137	1206	1182	1034	933	908	841
	mean	52491	51780	54092	82963	76579	78528	83345	94882	114552	142233
	s.e.	5685	4518	4238	7416	5582	4461	7555	7746	7728	12558
	mean/GDP	4.34	4.28	4.47	6.86	6.33	6.49	6.89	7.84	9.47	11.75
	decile sha	6.46	6.65	6.12	9.75	9.35	9.41	9.99	11.43	13.80	17.05

Table 6

Distribution of total assets across deciles of net wealth in some euro area Members, 2010, Euro and per cent respectively

Decile		1	2	3	4	5	6	7	8	9	10
Austria	no. obs.	1073	1150	1249	1173	1148	1192	1228	1261	1228	1198
	mean	17720	5219	13007	27675	65611	129122	193664	271026	429072	1668932
	s.e.	11885	876	1329	2618	4973	5074	7124	5377	11747	472624
	mean/GDP	0.52	0.15	0.38	0.81	1.92	3.79	5.68	7.95	12.58	48.94
	decile sha	0.62	0.19	0.47	1.00	2.36	4.67	6.97	9.78	15.40	58.54
Belgium	no. obs.	937	929	944	900	1012	1139	1278	1377	1418	1701
	mean	9006	12904	80119	175699	217861	269905	351975	443196	610682	1523092
	s.e.	3199	2940	6591	6498	5364	8544	8699	8494	9612	75571
	mean/GDP	0.26	0.38	2.35	5.15	6.39	7.92	10.32	13.00	17.91	44.67
	decile sha	0.25	0.35	2.16	4.75	5.90	7.33	9.53	12.02	16.53	41.18
Cyprus	no. obs.	546	474	454	480	586	592	691	709	701	952
	mean	32262	65111	144104	207727	277935	382553	501996	708649	1148692	3975569
	s.e.	12977	9260	11162	10154	9674	15908	18674	18966	38303	454122
	mean/GDP	1.54	3.10	6.86	9.89	13.24	18.22	23.90	33.75	54.70	189.31
	decile sha	0.44	0.88	1.92	2.81	3.76	5.14	6.76	9.54	15.53	53.22
Germany	no. obs.	1250	1175	1223	1379	1294	1395	1508	2027	2713	3861
	mean	17988	2576	11487	26156	60014	106579	158208	242182	373586	1226479
	s.e.	4255	324	1891	2459	5429	5392	5870	4655	6695	103196
	mean/GDP	0.59	0.08	0.38	0.86	1.97	3.49	5.19	7.94	12.25	40.21
	decile sha	0.81	0.12	0.52	1.18	2.69	4.79	7.11	10.93	16.77	55.08
Spain	no. obs.	2061	1927	2007	2180	2250	2349	2785	2811	3595	9020
	mean	32612	55079	116675	144439	187610	238676	279252	357728	510121	1320130
	s.e.	7871	4062	4958	3838	3442	6756	4378	4377	6787	61577
	mean/GDP	1.44	2.43	5.14	6.36	8.26	10.51	12.30	15.76	22.47	58.16
	decile sha	1.01	1.70	3.59	4.46	5.80	7.36	8.62	11.05	15.75	40.66
Finland	no. obs.	4510	3450	3960	4465	4525	5010	5705	6810	7285	9225
	mean	47269	8067	22503	72194	109903	145259	188166	258946	353892	773511
	s.e.	2336	1042	1481	2223	1985	1918	1902	2239	2185	14963
	mean/GDP	1.42	0.24	0.68	2.17	3.30	4.36	5.65	7.78	10.63	23.23
	decile sha	2.39	0.41	1.14	3.65	5.55	7.35	9.51	13.07	17.91	39.03
France	no. obs.	5327	5069	4981	5512	6582	6590	6889	7658	9166	17256
	mean	8104	4602	15919	53714	124854	179372	233947	304212	436406	1222366
	s.e.	3715	466	1467	2678	2729	2744	2404	2279	3141	55008
	mean/GDP	0.27	0.15	0.53	1.80	4.18	6.00	7.82	10.17	14.60	40.88
	decile sha	0.31	0.18	0.62	2.08	4.83	6.94	9.07	11.77	16.89	47.32
Greece	no. obs.	1884	1673	1513	1328	1351	1389	1459	1378	1418	1462
	mean	5805	12945	43049	74426	99283	126469	162445	204302	280371	590801
	s.e.	1224	1523	2115	2291	2775	2433	2407	3119	3771	20673
	mean/GDP	0.29	0.65	2.16	3.74	4.99	6.36	8.16	10.27	14.09	29.69
	decile sha	0.39	0.77	2.66	4.65	6.23	7.91	10.17	12.76	17.54	36.91
Italy	no. obs.	3800	3640	3535	3705	4385	4090	4010	4250	4205	4135
	mean	5464	13344	47626	105168	159688	206821	259843	337190	476965	1261566
	s.e.	1656	1502	2525	2492	1842	1548	1374	2650	3868	44963
	mean/GDP	0.21	0.52	1.85	4.09	6.21	8.05	10.11	13.12	18.56	49.09
	decile sha	0.20	0.45	1.64	3.66	5.56	7.21	9.10	11.75	16.57	43.86
Luxembourg	no. obs.	370	400	439	451	389	425	419	496	632	729
	mean	32681	38195	173280	336935	455703	519844	620949	811570	1152668	3799252
	s.e.	11830	12587	19559	16657	20221	14251	15074	18786	21132	483666
	mean/GDP	0.42	0.49	2.24	4.35	5.89	6.72	8.02	10.49	14.89	49.09
	decile sha	0.42	0.48	2.18	4.26	5.74	6.59	7.84	10.21	14.54	47.75
Malta	no. obs.	436	461	426	411	397	429	453	391	414	397
	mean	6276	40388	98740	151459	203269	252402	309548	421220	572983	1736915
	s.e.	860	3043	5460	4812	8489	4522	5249	9233	16454	503717
	mean/GDP	0.40	2.59	6.33	9.71	13.03	16.18	19.84	27.00	36.73	111.34
	decile sha	0.17	1.07	2.62	4.01	5.35	6.68	8.23	11.05	15.16	45.66
Netherlands	no. obs.	388	364	419	483	481	649	698	820	990	1213
	mean	119281	23307	48979	109468	163967	223678	286206	338295	430587	779153
	s.e.	22333	10236	12715	12899	15750	18035	10872	11047	23581	35118
	mean/GDP	3.38	0.66	1.39	3.10	4.64	6.34	8.11	9.58	12.20	22.07
	decile sha	4.79	0.92	1.95	4.33	6.51	8.87	11.29	13.43	17.05	30.87
Portugal	no. obs.	2481	2160	2189	1873	2038	2046	2136	2283	2261	2553
	mean	7798	13461	37859	59073	76722	104753	130959	181717	257666	834756
	s.e.	1672	2232	3295	2594	1816	2370	2135	3114	4327	65583
	mean/GDP	0.48	0.83	2.32	3.62	4.71	6.43	8.03	11.15	15.81	51.21
	decile sha	0.46	0.79	2.21	3.47	4.52	6.13	7.68	10.67	15.14	48.93
Slovenia	no. obs.	145	144	171	163	199	175	166	182	166	204
	mean	2658	19558	45701	72145	93198	125008	153762	215752	275891	550724
	s.e.	916	3434	4059	3703	4218	4089	7052	11803	11969	61998
	mean/GDP	0.15	1.13	2.64	4.17	5.39	7.23	8.89	12.47	15.95	31.83
	decile sha	0.18	1.32	2.92	4.67	6.12	8.11	9.70	14.40	17.60	34.97
Slovak Republic	no. obs.	2089	1126	883	933	917	848	830	869	882	908
	mean	6471	28301	39980	48464	59512	69113	81340	99729	130724	267218
	s.e.	820	1073	821	1054	923	778	704	979	2089	11602
	mean/GDP	0.53	2.34	3.30	4.01	4.92	5.71	6.72	8.24	10.80	22.08
	decile sha	0.78	3.42	4.85	5.79	7.17	8.33	9.81	12.02	15.75	32.08

Table 7

Distribution of HMR assets across deciles of total household net wealth in some euro area Members, 2010,
Euro and per cent respectively

Decile		1	2	3	4	5	6	7	8	9	10
Austria	no. obs.	1073	1150	1249	1173	1148	1192	1228	1261	1228	1198
	mean	9477	9477	1624	3627	23302	81623	130171	191669	264807	526242
	s.e.	9793	9793	1314	2708	4826	5080	8747	5433	11211	47873
	mean/GDP	0.28	0.28	0.05	0.11	0.68	2.39	3.82	5.62	7.77	15.43
	decile sha	0.77	0.77	0.13	0.30	1.89	6.65	10.54	15.61	21.46	42.65
Belgium	no. obs.	937	929	944	900	1012	1139	1278	1377	1418	1701
	mean	4484	2913	40814	132234	175209	207152	262448	288495	323567	466588
	s.e.	2496	1744	6385	7685	6358	10416	10956	11206	10775	27770
	mean/GDP	0.13	0.09	1.20	3.88	5.14	6.07	7.70	8.46	9.49	13.68
	decile sha	0.24	0.15	2.13	6.93	9.21	10.91	13.79	15.18	16.99	24.47
Cyprus	no. obs.	546	474	454	480	586	592	691	709	701	952
	mean	14634	32424	90949	149779	186373	236507	292260	336317	426729	673381
	s.e.	7741	7724	11428	11877	12730	19767	23751	24814	38272	66401
	mean/GDP	0.70	1.54	4.33	7.13	8.87	11.26	13.92	16.02	20.32	32.07
	decile sha	0.61	1.34	3.69	6.16	7.67	9.68	11.99	13.79	17.58	27.48
Germany	no. obs.	1250	1175	1223	1379	1294	1395	1508	2027	2713	3861
	mean	7972	7972	2230	4824	22584	48949	82069	153664	216846	371480
	s.e.	2222	2222	1459	1447	4095	4926	6298	6341	6685	20017
	mean/GDP	0.26	0.26	0.07	0.16	0.74	1.60	2.69	5.04	7.11	12.18
	decile sha	0.88	0.88	0.25	0.53	2.48	5.37	9.01	16.94	23.78	40.76
Spain	no. obs.	2061	1927	2007	2180	2250	2349	2785	2811	3595	9020
	mean	17548	38816	91552	116717	150978	181739	201639	233929	286778	427021
	s.e.	3930	3883	4015	3982	4095	5037	6896	8562	9698	17762
	mean/GDP	0.77	1.71	4.03	5.14	6.65	8.01	8.88	10.31	12.63	18.81
	decile sha	1.01	2.23	5.23	6.69	8.66	10.39	11.55	13.41	16.43	24.41
Finland	no. obs.	4510	3450	3960	4465	4525	5010	5705	6810	7285	9225
	mean	36245	5468	12437	48827	81483	107937	129357	161704	198953	299114
	s.e.	2037	940	1320	2196	1986	1989	2248	2550	3186	5627
	mean/GDP	1.09	0.16	0.37	1.47	2.45	3.24	3.88	4.86	5.97	8.98
	decile sha	3.36	0.51	1.15	4.51	7.53	9.99	11.96	14.94	18.43	27.62
France	no. obs.	5327	5069	4981	5512	6582	6590	6889	7658	9166	17256
	mean	3777	322	3527	24383	80464	129917	165585	202562	251895	366227
	s.e.	3316	292	1238	2716	3432	4503	4007	3845	5023	7977
	mean/GDP	0.13	0.01	0.12	0.82	2.69	4.35	5.54	6.77	8.42	12.25
	decile sha	0.31	0.03	0.29	1.98	6.55	10.57	13.49	16.48	20.49	29.81
Greece	no. obs.	1884	1673	1513	1328	1351	1389	1459	1378	1418	1462
	mean	2101	4873	27830	56240	77829	95705	116978	135495	158946	218731
	s.e.	865	1448	2254	2784	2997	2914	3626	5333	7327	13609
	mean/GDP	0.11	0.24	1.40	2.83	3.91	4.81	5.88	6.81	7.99	10.99
	decile sha	0.25	0.52	3.08	6.29	8.73	10.70	13.09	15.12	17.78	24.43
Italy	no. obs.	3800	3640	3535	3705	4385	4090	4010	4250	4205	4135
	mean	897	2447	20006	73343	122206	165969	203962	252297	325382	580342
	s.e.	559	1508	2639	3262	2624	2974	3154	3703	6395	33142
	mean/GDP	0.03	0.10	0.78	2.85	4.76	6.46	7.94	9.82	12.66	22.58
	decile sha	0.05	0.13	1.14	4.20	7.00	9.51	11.75	14.45	18.59	33.18
Luxembour	no. obs.	370	400	439	451	389	425	419	496	632	729
	mean	10708	7343	102109	218314	344924	435669	480280	591847	671484	1252332
	s.e.	6946	6817	18921	22418	20781	17026	21246	25616	33162	272802
	mean/GDP	0.14	0.09	1.32	2.82	4.46	5.63	6.21	7.65	8.68	16.18
	decile sha	0.26	0.18	2.48	5.33	8.37	10.65	11.69	14.35	16.33	30.35
Malta	no. obs.	436	461	426	411	397	429	453	391	414	397
	mean	0	11117	62527	110088	146126	187717	215442	257110	282192	401354
	s.e.	0	2774	6648	5686	9022	8600	9621	14467	19795	35760
	mean/GDP	0.00	0.71	4.01	7.06	9.37	12.03	13.81	16.48	18.09	25.73
	decile sha	0.00	0.66	3.76	6.59	8.71	11.25	12.96	15.27	16.91	23.89
Netherlan	no. obs.	388	364	419	483	481	649	698	820	990	1213
	mean	94724	14764	28849	63557	91940	144723	199411	225240	278639	403750
	s.e.	18827	9469	10125	14861	15873	18757	20143	12951	15709	16248
	mean/GDP	2.68	0.42	0.82	1.80	2.60	4.10	5.65	6.38	7.89	11.44
	decile sha	6.21	0.95	1.88	4.10	5.96	9.37	12.83	14.60	18.00	26.10
Portugal	no. obs.	2481	2160	2189	1873	2038	2046	2136	2283	2261	2553
	mean	5190	8806	24794	45157	58172	74545	89074	136602	155151	216568
	s.e.	1483	2135	3285	2502	2573	3570	2748	3884	4553	8598
	mean/GDP	0.32	0.54	1.52	2.77	3.57	4.57	5.46	8.38	9.52	13.29
	decile sha	0.64	1.08	3.03	5.56	7.18	9.13	10.93	16.79	19.09	26.58
Slovenia	no. obs.	145	144	171	163	199	175	166	182	166	204
	mean	667	11986	35538	64638	77203	106135	127317	187254	196437	233753
	s.e.	673	3792	4675	4204	6275	6986	13015	13359	10668	25640
	mean/GDP	0.04	0.69	2.05	3.74	4.46	6.13	7.36	10.82	11.35	13.51
	decile sha	0.07	1.20	3.38	6.21	7.55	10.24	11.95	18.61	18.69	22.11
Slovak Rep	no. obs.	2089	1126	883	933	917	848	830	869	882	908
	mean	3782	22964	33330	41250	48746	57834	67617	80181	96470	165682
	s.e.	804	1270	1321	1175	1296	1186	1744	2012	2706	8818
	mean/GDP	0.31	1.90	2.75	3.41	4.03	4.78	5.59	6.63	7.97	13.69
	decile sha	0.61	3.73	5.44	6.63	7.90	9.37	10.97	12.99	15.62	26.75

Note: No ownership of the household main residence is considered 0.

Table 8

Distribution of HMR assets net of HMR mortgage across deciles of total household net wealth in some euro area Members, 2010, Euro and per cent respectively

Decile		1	2	3	4	5	6	7	8	9	10
Austria	no. obs.	1073		1249	1173	1148	1192	1228	1261	1228	1198
	mean	-10728		-60	59	4563	24233	39725	54414	70065	176466
	s.e.	15336		156	393	1547	3859	7837	8404	13077	39586
	mean/GDP	-0.31		0.00	0.00	0.13	0.71	1.16	1.60	2.05	5.17
	decile sha	-3.27	-0.01	-0.02	0.01	1.26	6.79	11.03	15.24	19.54	49.42
Belgium	no. obs.	937	929	944	900	1012	1139	1278	1377	1418	1701
	mean	228	201	9152	44273	68675	62948	81696	92240	87270	76165
	s.e.	358	195	2163	4548	7286	11774	12168	12242	12086	15895
	mean/GDP	0.01	0.01	0.27	1.30	2.01	1.85	2.40	2.70	2.56	2.23
	decile sha	0.04	0.04	1.74	8.45	13.14	12.08	15.62	17.66	16.68	14.54
Cyprus	no. obs.	546	474	454	480	586	592	691	709	701	952
	mean	-7194	5830	21816	48956	57254	85071	99090	139272	172049	231191
	s.e.	7636	2157	4940	8441	10145	12790	21604	24716	37339	53261
	mean/GDP	-0.34	0.28	1.04	2.33	2.73	4.05	4.72	6.63	8.19	11.01
	decile sha	-0.85	0.69	2.53	5.75	6.74	9.95	11.61	16.34	20.27	26.96
Germany	no. obs.	1250	1175	1223	1379	1294	1395	1508	2027	2713	3861
	mean	-4475	-4475	-75	23	3793	12568	21531	38992	63730	86316
	s.e.	2004	2004	340	507	965	2224	3413	4450	6147	12745
	mean/GDP	-0.15	-0.15	0.00	0.00	0.12	0.41	0.71	1.28	2.09	2.83
	decile sha	-2.02	-2.02	-0.03	0.01	1.70	5.65	9.69	17.60	28.63	38.79
Spain	no. obs.	2061	1927	2007	2180	2250	2349	2785	2811	3595	9020
	mean	-1895	6463	26668	37136	39508	50745	54146	52557	58547	69882
	s.e.	1481	1085	2821	3974	4446	5151	6343	8490	11735	11733
	mean/GDP	-0.08	0.28	1.17	1.64	1.74	2.24	2.39	2.32	2.58	3.08
	decile sha	-0.48	1.65	6.76	9.44	10.05	12.87	13.76	13.37	14.87	17.72
Finland	no. obs.	4510	3450	3960	4465	4525	5010	5705	6810	7285	9225
	mean	-8063	-67	231	8681	23023	33401	40297	48100	59337	85192
	s.e.	1008	81	313	687	1143	1750	2077	2405	3315	4828
	mean/GDP	-0.24	0.00	0.01	0.26	0.69	1.00	1.21	1.44	1.78	2.56
	decile sha	-2.79	-0.02	0.08	2.99	7.93	11.53	13.89	16.57	20.49	29.33
France	no. obs.	5327	5069	4981	5512	6582	6590	6889	7658	9166	17256
	mean	-184	19	396	4589	22047	35494	43053	46725	48708	59935
	s.e.	289	33	211	616	1602	2960	3553	4177	4711	5095
	mean/GDP	-0.01	0.00	0.01	0.15	0.74	1.19	1.44	1.56	1.63	2.00
	decile sha	-0.07	0.01	0.15	1.76	8.45	13.61	16.53	17.91	18.67	22.98
Greece	no. obs.	1884	1673	1513	1328	1351	1389	1459	1378	1418	1462
	mean	31	416	4475	10387	9991	16225	20655	23390	16349	28076
	s.e.	119	182	872	1796	2055	3145	3792	4364	3320	7399
	mean/GDP	0.00	0.02	0.22	0.52	0.50	0.82	1.04	1.18	0.82	1.41
	decile sha	0.03	0.30	3.40	7.99	7.71	12.49	15.91	17.98	12.59	21.59
Italy	no. obs.	3800	3640	3535	3705	4385	4090	4010	4250	4205	4135
	mean	-306	53	2311	10353	15312	15394	15439	28287	37225	54883
	s.e.	219	31	536	1468	2182	2604	2504	4966	6316	9627
	mean/GDP	-0.01	0.00	0.09	0.40	0.60	0.60	0.60	1.10	1.45	2.14
	decile sha	-0.18	0.03	1.28	5.79	8.57	8.61	8.68	15.82	20.76	30.64
Luxembour	no. obs.	370	400	439	451	389	425	419	496	632	729
	mean	2108	263	10853	85688	150114	175575	123805	242455	225125	159690
	s.e.	2034	2500	4014	12736	17491	29361	26143	33704	39555	40227
	mean/GDP	0.03	0.00	0.14	1.11	1.94	2.27	1.60	3.13	2.91	2.06
	decile sha	0.18	0.02	0.92	7.31	12.74	15.02	10.55	20.57	19.15	13.54
Malta	no. obs.	436	461	426	411	397	429	453	391	414	397
	mean	0	1825	10543	23498	14868	25939	29189	40046	32778	25259
	s.e.	0	1247	3076	6146	5394	8329	10282	11419	12042	15922
	mean/GDP	0.00	0.12	0.68	1.51	0.95	1.66	1.87	2.57	2.10	1.62
	decile sha	0.00	0.90	5.20	11.55	7.27	12.75	14.39	19.52	16.11	12.33
Netherlanc	no. obs.	388	364	419	483	481	649	698	820	990	1213
	mean	-13742	-451	715	7478	19206	52267	93888	112305	111082	158263
	s.e.	7830	1023	1500	2753	6177	12160	11242	11094	14329	17856
	mean/GDP	-0.39	-0.01	0.02	0.21	0.54	1.48	2.66	3.18	3.15	4.48
	decile sha	-2.58	-0.08	0.13	1.38	3.56	9.66	17.29	20.82	20.56	29.26
Portugal	no. obs.	2481	2160	2189	1873	2038	2046	2136	2283	2261	2553
	mean	-1194	223	2746	10076	14869	20600	20210	38758	37323	53874
	s.e.	508	253	499	1333	1796	2194	2496	4178	4703	6594
	mean/GDP	-0.07	0.01	0.17	0.62	0.91	1.26	1.24	2.38	2.29	3.31
	decile sha	-0.61	0.11	1.38	5.11	7.56	10.40	10.22	19.63	18.93	27.25
Slovenia	no. obs.	145	144	171	163	199	175	166	182	166	204
	mean	-212	-212	3553	16318	13890	15745	4654	13979	18147	50128
	s.e.	213	213	4848	10110	7379	7448	4118	9383	11780	18700
	mean/GDP	-0.01	-0.01	0.21	0.94	0.80	0.91	0.27	0.81	1.05	2.90
	decile sha	-0.16	-0.16	2.68	11.81	10.44	11.61	3.28	10.85	12.92	35.67
Slovak Rep	no. obs.	2089	1126	883	933	917	848	830	869	882	908
	mean	632	2913	3415	2497	4578	3451	2563	5306	5899	20927
	s.e.	265	537	759	845	1030	1059	1010	1605	1569	4258
	mean/GDP	0.05	0.24	0.28	0.21	0.38	0.29	0.21	0.44	0.49	1.73
	decile sha	1.22	5.60	6.60	4.75	8.78	6.63	4.92	10.18	11.32	40.01

Note: No ownership of the household main residence is considered 0.

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