



GERMANY

SELECTED ISSUES

July 2019

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Approved By
European Department

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CONTENTS

WEALTH INEQUALITY AND PRIVATE SAVINGS IN GERMANY	3
A. Introduction	3
B. Wealth Inequality in Germany: Stylized Facts	5
C. Implications for Household Disposable Income and Consumption	10
D. NFC Gross Saving and Income Inequality	13
E. The Blurred Boundary Between Household and Corporate Savings	16
F. Conclusion	19
References	22

FIGURES

1. Mechanism Illustration	4
2. Median Net Wealth	5
3. Wealth Share of Top 1 Percent	5
4. Evolution in Disposable Income Inequality	6
5. Drivers of Wealth Inequality	7
6. Role of Private Business Wealth	9
7. Property Tax Revenues	10
8. Contribution to Cumulative Change in Household Disposable Income to GDP Ratio	11
9. Dispersion of Real Disposable Income	12
10. Correlation Between Long -run Change in Income Inequality and Corporate Savings	14
11. Wealth/Income Ratios Across Income Distribution	18
12. Correlation Between Long-run Change in Private Saving and Wealth Inequality	19

TABLES

1. Corporate Saving and Top Income Shares _____	13
2. Interaction with Wealth Inequality _____	15
3. Corporate savings and aggregate private savings _____	17

APPENDIX

I. Wealth-to-Income Profile Estimation _____	21
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TAX PRESSURES AND REFORMS OPTIONS _____ 25

A. Introduction _____	25
B. Analysis of Issues in Germany _____	26
C. Reform Options for Germany _____	32
D. Reactions to International Developments _____	33
E. Labor Taxes _____	37
References _____	47

FIGURES

1. Average CIT Rate _____	27
2. Effective Average Tax Rates, 2017 (percent) _____	27
3. CIT Revenue, 2017 _____	28
4. Gross Operating Surplus (OS) of Foreign Controlled Affiliates _____	29
5. Differences Between Revenues from Taxing Routine Returns and CIT Revenues _____	36
6. CIT versus DBCFT Revenue _____	37
7. Marginal Tax Rates _____	38
8. PIT (only) Rates for Married People Whose Spouse Earns €40,000 _____	40
9. The Marginal and Average Tax Rates for Individuals Including Social Contributions _____	41
10. Marginal Tax Wedges _____	42

TABLE

1. German FDI Pattern _____	28
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APPENDIX

I. Additional Table and Figures _____	44
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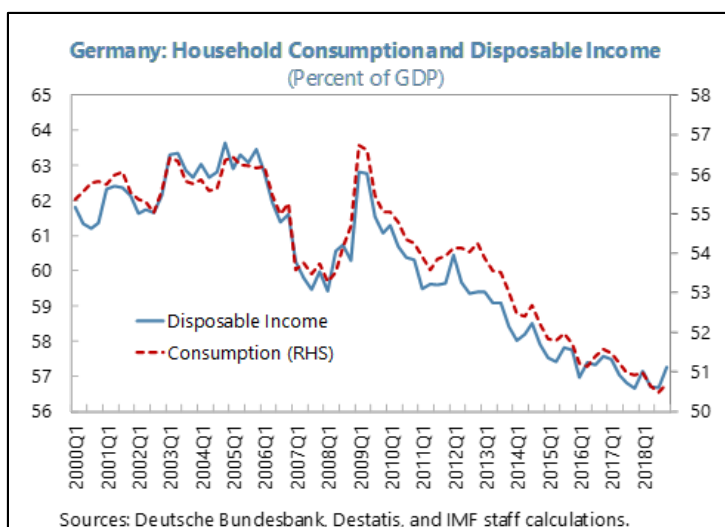
WEALTH INEQUALITY AND PRIVATE SAVINGS IN GERMANY¹

Does the large current account surplus in Germany reflect export-driven income gains that are evenly shared among the population? The evidence strongly suggests this is not the case and underscores the important role of German business wealth concentration in this context. As high corporate savings and underlying profits largely reflect capital income accruing to wealthy households and increasingly retained in closely-held firms, the buildup of external imbalance has been accompanied by widening top income inequality, rising private savings and compressed consumption rates.

A. Introduction

1. Germany is the world's leading exporter of high value-added manufacturing goods and, following the Euro adoption, has steadily increased its current account surplus and net foreign asset position. Germany was

in a unique position to reap benefits from China's (and other emerging markets') integration into the world trading system and Eastern Europe's integration into the EU due to its comparative advantage in industrial production, as well as its geographic and technological advantage in developing global value chains. Even following the GFC, Germany was much better positioned relative to the rest of the euro area to benefit from a positive external demand shock from

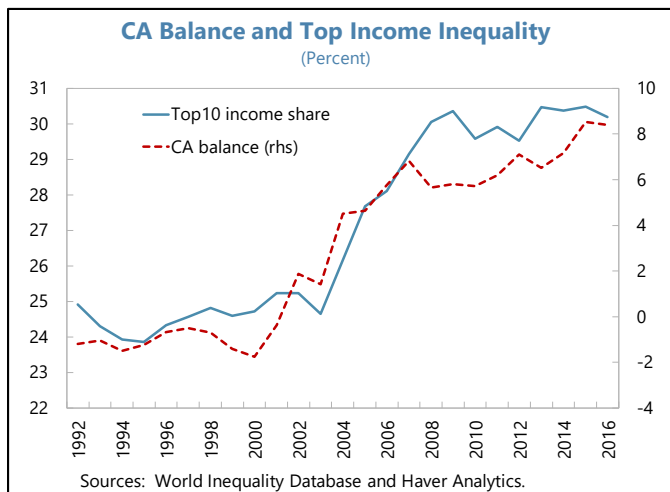


China—China's investment-heavy fiscal stimulus seems to have offset the drag from weaker demand in Europe. Domestic demand and household disposable income, however, did not increase in tandem with aggregate income (text chart). Instead, Germany's aggregate saving rate and current account (CA) balance began to improve steadily starting in the early 2000s, reaching a peak of 8.5 percent of GDP in 2015, and boosting the NIIP to around 61 percent of GDP at present.

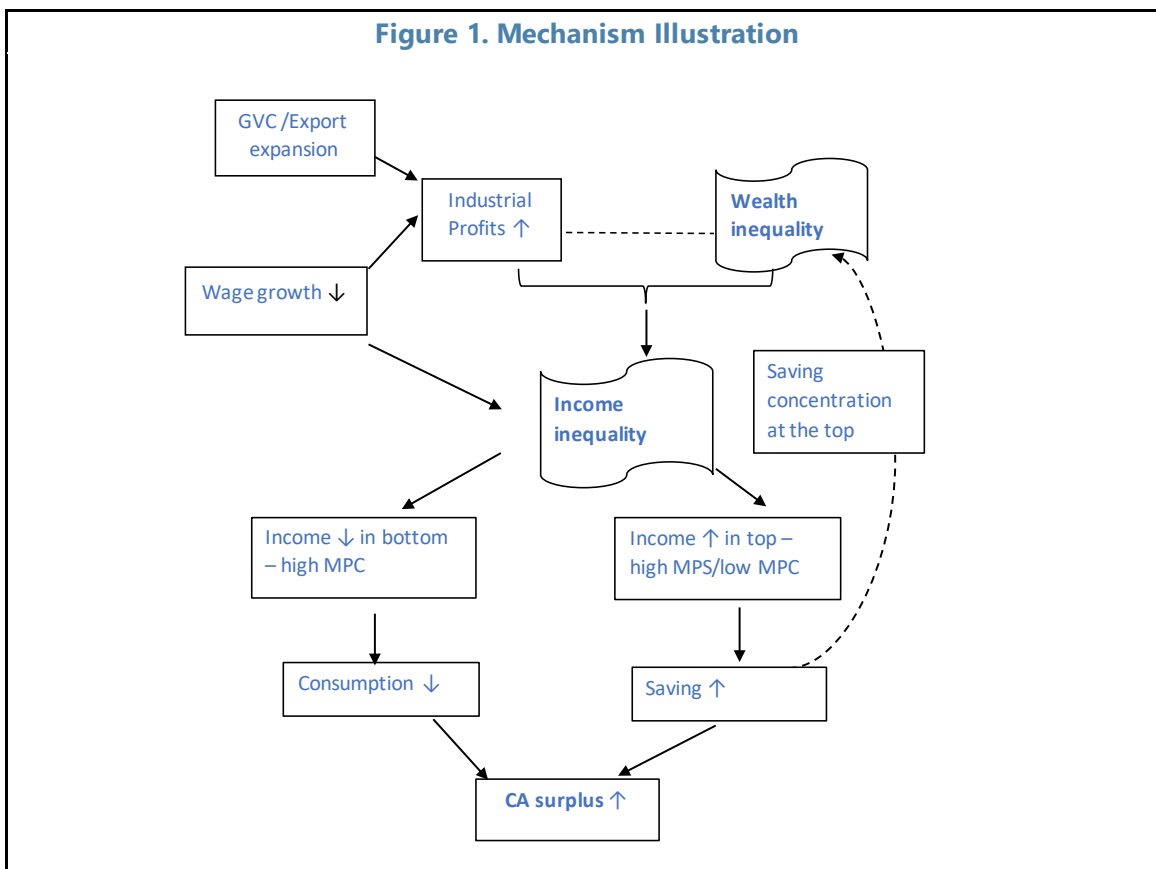
2. Germany's success on global export markets needs to be viewed against the background of its high wealth inequality to shed light on the drivers behind the rise in private savings and accumulation of current account surpluses. It has been widely documented that

¹ Prepared by Mai Chi Dao (EUR).

over the last two decades, the German non-financial corporate (NFC) sector's gross and net saving rate has increased – while the relatively high household saving rate remained largely unchanged, boosting the private saving rate and CA surplus. This surge was initially driven by rising profits, on the back of wage restraint and falling labor shares, and since 2008, by lower dividend payout rates. In this paper, we show that the benefits of rising corporate savings and by extension, the current account surplus, were unevenly distributed:



Growing corporate profits associated with globalization and wage restraint accrued mainly to households in the top of the wealth distribution, among which business ownership is concentrated. The interaction of pre-existing wealth inequality with rising corporate income therefore widened overall income inequality (correlation between the CA and top income share is 0.95, see chart). As the marginal propensity to consume typically declines when moving up the wealth and income distribution, such “top-biased” income growth is bound to raise savings and net worth of the richest households, further exacerbating wealth inequality over time (see flowchart in Figure 1).



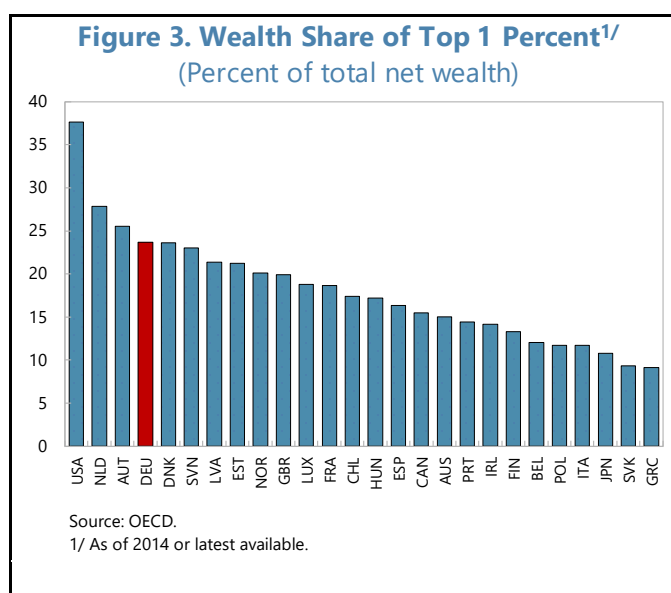
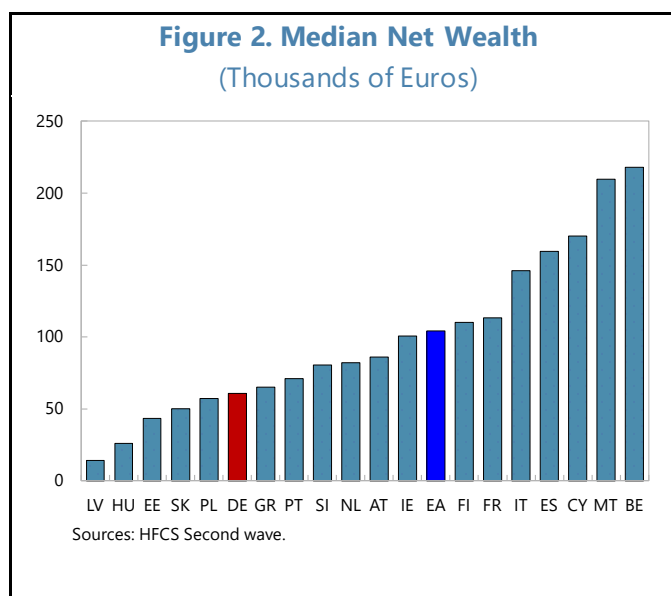
B. Wealth Inequality in Germany: Stylized Facts

3. Notwithstanding the large stock of net foreign assets accumulated through the process of running increasing current account surpluses since the early 2000s, the median level of household wealth in Germany is among the lowest in the Euro area. At a median of 61 thousand Euro, household net wealth in Germany is just above the level in Poland, below the level in Greece, Portugal, and well below the euro area median of 100 thousand per household (Figure 2).² This low level of wealth among the median household stands in stark contrast to the vast stock of national

wealth measured at the aggregate level:

financial net worth alone (*excluding* land, dwellings and other real assets) of the aggregate household balance sheet stood at over 4 Trillion Euro or 95 thousand Euro per household as of 2017, while total (financial and real) net worth is estimated to amount to 10 Trillion Euro, or over 235 thousand per household.³ The high level of national wealth coupled with the low level of median household wealth jointly imply that most of the aggregate wealth is concentrated among a small segment of the population in the top of the distribution.

4. In international comparison, wealth inequality is very high in Germany. Wealth inequality, measured by the share of aggregate net wealth held by the top 1 percent wealthiest households, is high in most advanced economies. In Germany, it is among the highest in



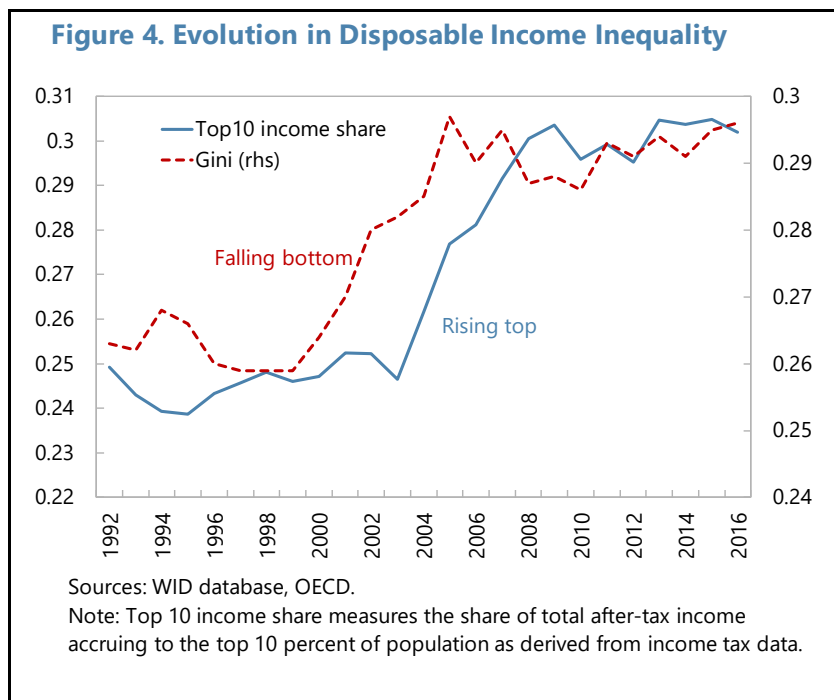
² This measure of net wealth does not encompass pension wealth, i.e. the present value of future pension entitlements from public and employer-provided pension schemes, which is estimated to be large in Germany (see Bönke et al. 2018).

³ See OECD Sectoral Balance Sheets statistics and DIW Wochenbericht Nr. 49/2018.

Europe, with the top 1 percent wealthiest households owning 24 percent of total national net wealth (Figure 3).⁴ A similar picture emerges when ranking countries in terms of the net wealth Gini coefficient, the top 10 percent wealth share, or other relative wealth ratios instead.

5. Income inequality in Germany may be less severe than in some other major advanced economies (for example, it is less than in UK, US, Japan, Korea), but its increase in recent decades has been steep,

both in gross and even disposable income terms, as redistribution has overall weakened at the same time as market incomes have diverged.⁵ Importantly, the dynamics of post-reunification income inequality have been evolving over time. Over 1999–2005, it has been the falling income of the bottom of the distribution that widened inequality, as high unemployment and declining union power dramatically reduced earnings in the lower end of the



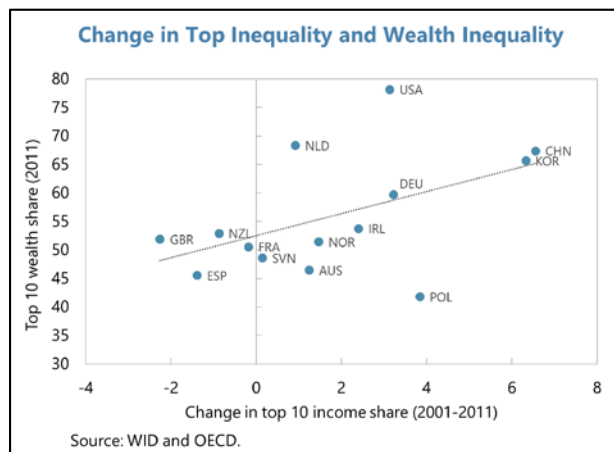
distribution (see IMF, 2017 and Dustmann et al. 2014). Starting in the mid-2000, however, the labor market strengthened and bottom incomes stabilized, resulting in a largely stable Gini coefficient. At the same time, however, top income inequality rose sharply as rising corporate profits and associated capital incomes disproportionately accrued to the wealthy (Figure 4). The last phase in the distribution dynamics, starting 2009, appears to be accompanied by stable or only moderately rising income inequality as measured by both metrics. However, this period also saw the sharpest rise in corporate retained earnings, which is not properly reflected in the income tax base and thus not completely captured by the measured top income share (see Bartels, 2019).⁶ Properly attributing retained earnings as incomes of ultimate shareholders would likely increase the top income share and its co-movement with the current account even further, particularly after 2009.

⁴ Household surveys are known to under-sample the richest households. Supplementing such surveys with the so-called rich lists increases the top 1 percent wealth share in Germany to 33 percent, the highest in Europe, see Bach et al. (2018) and Vermeulen (2016).

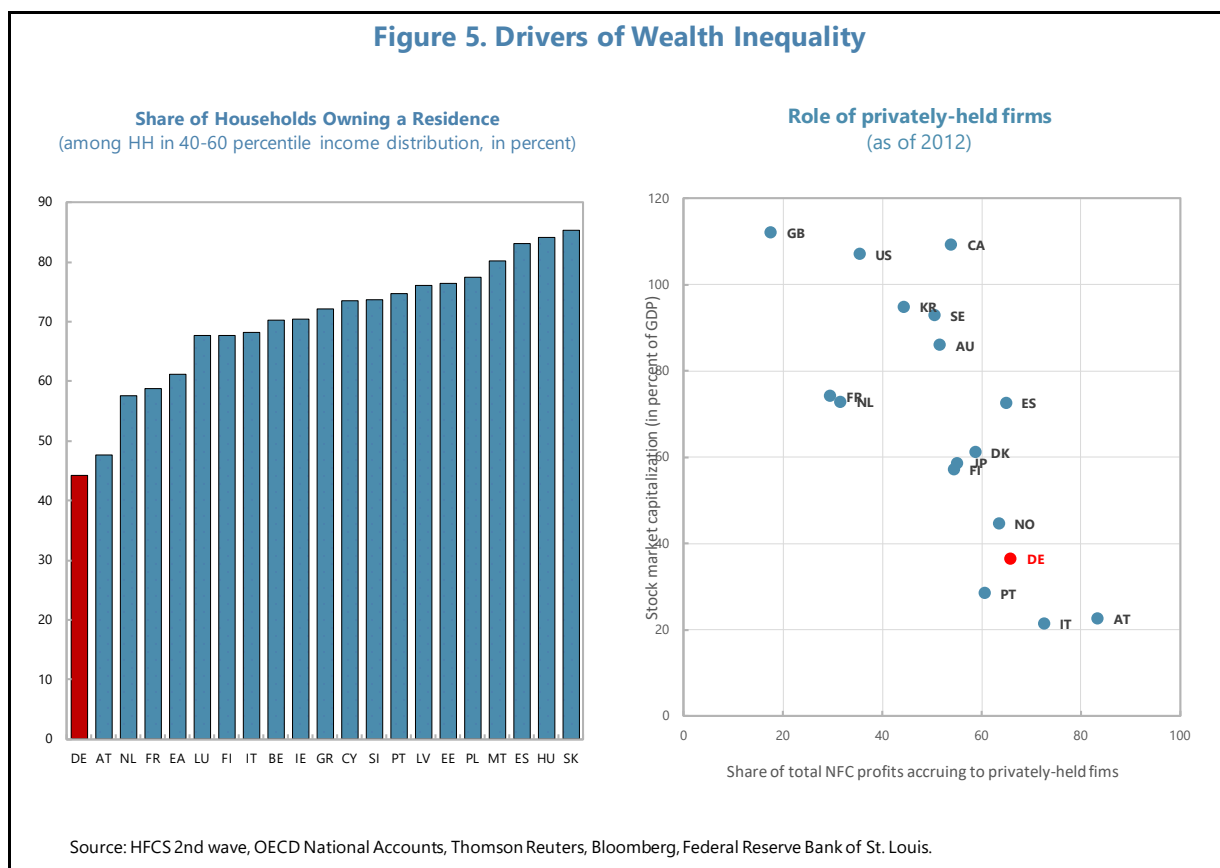
⁵ For an analysis of the evolution of wage and income inequality in Germany, highlight rising relative poverty risk, see the 2017 Selected Issues Paper "Income distribution and labor market developments in Germany" and more recently, DIW Wochenbericht 19/2019.

⁶ It is also not visible in the Gini coefficient which relies on household survey and typically under-samples rich households and capital incomes.

6. Wealth and income inequality are closely linked. As income/savings is a key source for wealth accumulation (Zucman, 2019), rapidly widening income inequality, particularly when driven by capital income as it has been the case in Germany, is both a driver of wealth inequality as well as its outcome. While time-series for wealth inequality are less readily available for long periods of time, studies employing German micro data show that wealth inequality in Germany has also increased since the early 2000s (Frick and Grabka, 2009; Bundesbank, 2016), with high levels of inertia in the top and bottom of the distribution.⁷



7. Private home ownership, typically the most important channel to build household wealth, is very low. Traditional reliance on generally well-functioning rental markets with strong tenant protection has contributed toward a low home ownership rate in Germany, in fact the lowest



⁷ Between 2010 and 2017, the interquartile range of net wealth in Germany increased by 30 percent (Bundesbank Monthly Report April 2019).

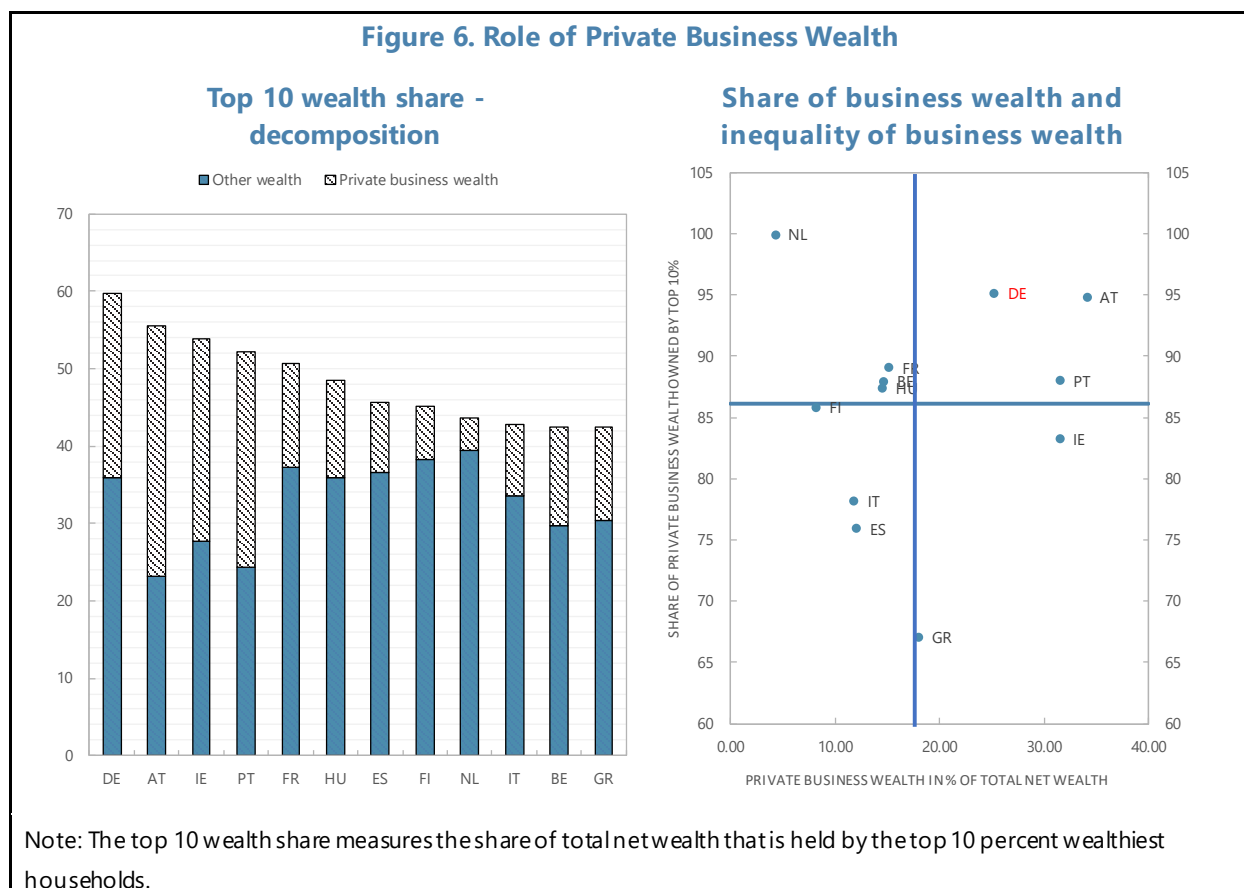
among Euro area countries. Consistent with the observed degree of wealth inequality, the home ownership rate is particularly low among households in the low-middle segment of the income distribution, while it does not vary much across countries among high-income households. The recent trend in appreciating house prices has therefore not benefited the broader population, while higher rents (particularly in major cities) have exerted increasing strains on housing affordability particularly among lower-income households. Dustmann et al. (2018) show that trend developments affecting relative housing expenditures (declining mortgage interest rate amid rising rentals and residential mobility among the young) have exacerbated income inequality.

8. German households also lack access to the German corporate equity stock as most of the corporate net worth is concentrated in privately-held firms. Unlike other advanced economies with a large industrial base, the bulk of corporate assets and profits (around 60 percent) in Germany are generated by firms in private ownership, consistent with a very low stock market capitalization relative to the size of the economy (Figure 5, right panel). Many *Mittelstand* firms remain in private, often family-controlled ownership, even when they expand internationally and grow into large multinationals. And even among the remaining 40 percent of firms that are publicly-listed, an astounding 65 percent of them are also controlled by a family -- either directly through at least 20 percent of stock ownership or through cross-holdings in a multiple control chain of interlinked entities. The largest controlling shareholder (in most cases an individual, family or endowment) holds an average of 54.5 percent of voting rights within a German publicly listed firms, compared with 20–25 percent in the UK and 31 percent in Sweden (Faccio and Lang, 2002).⁸ The concentration of industrial power in the hands of wealthy families goes back many centuries and has only strengthened following the turbulences of World War II, or the dot com bubble of the early 2000s (Fohlin, 2005). Economic historians studying the patterns of German corporate ownership conclude that “families are central to the ownership of many firms, but equity ownership is unusual among the population at large” (Fohlin, 2005, p. 236).

9. Private business wealth, meanwhile, is also highly concentrated in Germany and in general, accounts for much of the variation in wealth inequality across countries. The 10 percent wealthiest households in Germany own around 60 percent of the aggregate net wealth in the economy, and 40 percent of this wealth is in the form of private business ownership (Figure 6). Indeed, the single most important source of wealth in the top of the distribution is accounted for by business ownership in Germany (Grabka and Westermeier, 2014). Apart from private business wealth, the concentration of other forms of wealth in Germany (bank deposits, private pension saving, real assets etc.), though still high, does not stand out as much relative to other countries in the euro area. The role of private business wealth for overall wealth inequality in Germany (and Austria) is due to two facts, as illustrated in the right panel of Figure 6: first, private business wealth accounts for a large share (25 percent) of overall national wealth, and second, it is highly concentrated among the top (95 percent of it owned by top 10 percent wealthiest households). An immediate implication of such high concentration of business ownership is that the persistent rise in

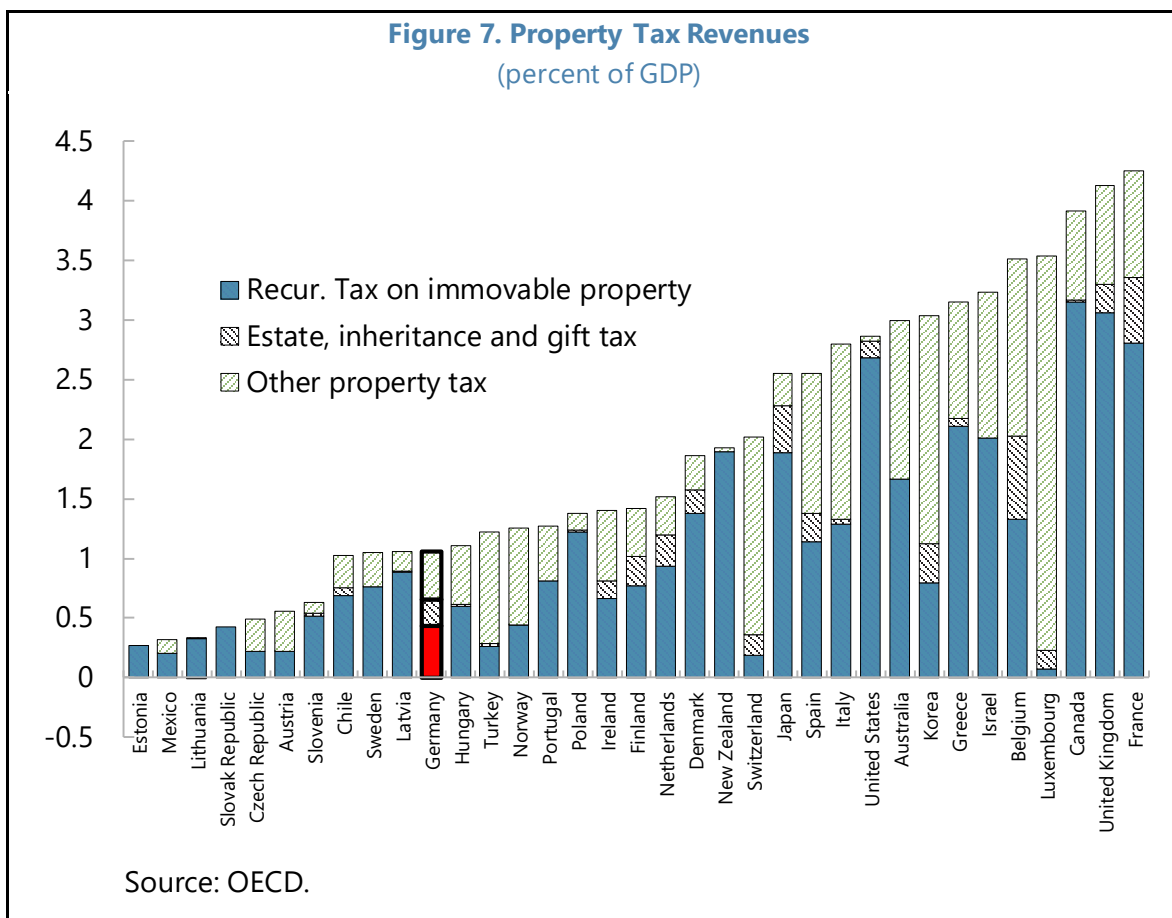
⁸ These shares are computed among publicly listed firms where the largest controlling owner has at least 5% of voting rights.

corporate profits underlying the increase in corporate saving and current account surplus since the early 2000s mostly accrued to the wealthiest households in the form of dividends or appreciating equity valuation, boosting top income and wealth shares. At the same time, households in the lower deciles of the wealth distribution lost out due to the wage restraint that, over a long period, enabled the rise in corporate profits.



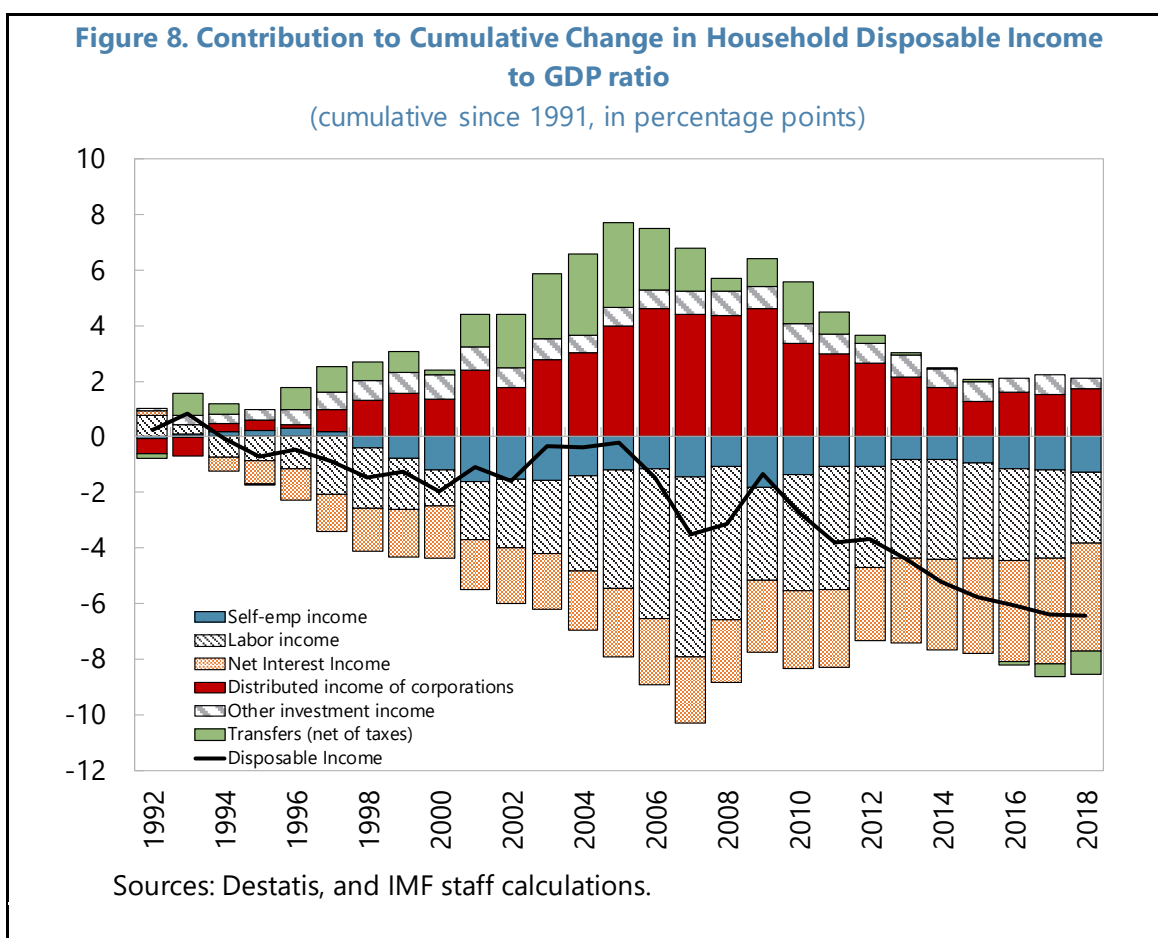
10. Taxation of property in Germany is low compared to other OECD countries, contributing to the persistence of high wealth inequality. Revenues from property taxes in Germany (comprising real property, inheritance and other property taxes), at only 1 percent of GDP, are very low compared to peers (Figure 7). Moreover, it has been on a declining path, reflecting reductions in marginal tax rates in the 1990s, and most notably following the inheritance tax reform of 2009, which greatly increased the exemption of inheritance wealth through intra-family business transmission (see Hines et al. 2016). At the same time, the size of the average inheritance flow has been growing steadily, from 4 percent in 1980 to over 10 percent of national income annually in 2010, and almost entirely reflects the increase in inheritance and inter-vivos transfers of wealthy families (see Piketty, 2016). The inheritance tax regime primarily benefits the wealthiest, who can claim exemption of corporate assets, while average families face much higher burdens, given relatively low personal exemptions and substantial marginal rates – it is therefore a regressive tax. Taxes on real property meanwhile, at only 0.4 percent of GDP, are particularly low in international comparison, due to the widening gap between tax- and market valuations. The last encompassing

updates of property values occurred in 1935 and 1964 (only West Germany). This under-valuation of real estate properties also benefits disproportionately the wealthy given their much higher home ownership rate and the recent house price appreciation.



C. Implications for Household Disposable Income and Consumption

11. The mirror image to rising NFC gross saving has been a decline in household disposable income and consumption as a share of GDP (Figure 8). The rate of NFC gross saving (that is, retained earnings as a share of gross output or value added) has been on the rise since the early 2000s. Prior work has documented that this increase has been driven by rising profits of German corporations and more recently, declining dividend payout rates (Dao and Maggi, 2018; Allen, Chen and Pereira, 2019). Higher profitability, in turn, has been supported by wage restraint/lower labor income shares and declining interest payments on debt, spurring exports and profits of German firms but reducing household disposable incomes (in percent of GDP). The strong labor market performance after the mid-2000 contributed to the recovering labor income share starting in 2008, through higher employment and more recently, higher wage growth. At the same time, the decline in unemployment and retrenchment of the welfare state following the Hartz IV reforms contributed toward reducing disposable income through lower net benefits since 2005, offsetting the modest gains in labor incomes on aggregate. Over 2005–2017, household disposable income to GDP ratio declined by around 6 percentage points.

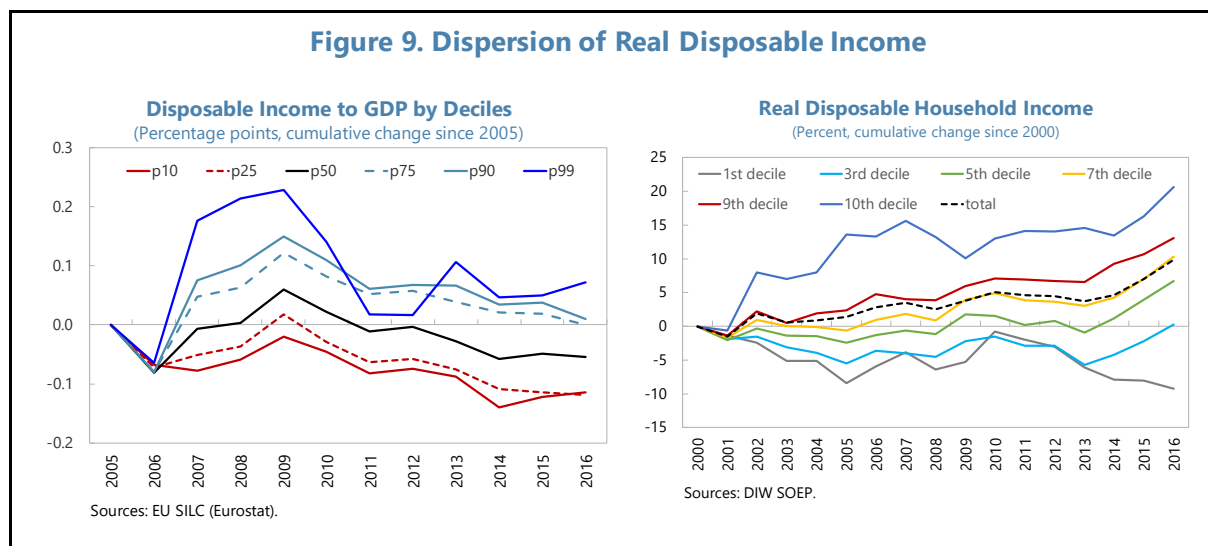


12. The corporate tax reform in 2001 and 2008, which favored retained earnings as opposed to dividend distribution and new equity issuance likely reduced the payout share, while declining interest rates (which steepened particularly after the GFC) have been eroding household interest income. The 2008 German corporate tax reform substantially reduced the tax burden on retained earnings, while slightly increasing the effective tax rate on dividends, especially for unincorporated businesses, resulting in a strong incentive for firms to retain instead of distributing their profits.⁹ However, as corporations are owned primarily by wealthy households with very high propensity to save, the shift from dividend distribution to retained earnings triggered by tax incentives merely represents a shift from household to corporate saving among the wealthy. At the same time, interest rates on household deposits declined by 2–4 percentage points, depending on maturity, between end-2008 and 2018. A much higher share of total assets of lower-middle income German households is held as financial assets compared to other countries in the Euro area (44 percent in Germany compared to 13.5 percent elsewhere in the Euro area), and around half of

⁹ The effective marginal tax rate (EMTR) on retained earnings was reduced from 38.6% to 29.8%. At the same time, a withholding tax of 25 percent was introduced on dividends (while prior to the reform, only half of distributed profits were subject to the personal income tax) and the top income tax rate affecting the EMTR of dividends of unincorporated firms was also raised, widening the tax differential between retained and distributed income for both types of firms (see Bundesbank Monthly Report October 2008).

those assets are in the form of sight deposits and saving accounts that are subject to declining interest rates (see HFCS 2nd wave).

13. Lower- and median income households bore most of the decline in disposable income share, which, given their high propensity to consume, led to a concomitant decline in the aggregate consumption to GDP ratio. The steepest decline in household disposable income to GDP occurred starting in 2005, with transfer retrenchment and interest income reduction contributing the most, while dividend (and other property income) ratio only started to decline in 2010 and stabilized in 2015. As lower- and middle-income households are more reliant on transfers and interest incomes than higher income ones (who own more housing and equity assets), we expect the decline in household disposable income to be disproportionately borne by lower income groups. Figure 9 (left panel) confirms that this is indeed the case. While in the aggregate, disposable income to GDP ratio declined by around 6 percentage points, it is highly concentrated among the bottom half of the income distribution. The lower quartile experienced a relative loss of 10 percent of GDP, the median a loss of 6 percent, while by contrast, the top 1 percent saw disposable income to GDP ratio actually rise by 8 percentage points. Lower income households experienced not only a relative, but also an *absolute* erosion or stagnation of their real purchasing power. Figure 9 (right panel) shows that widening income inequality and erosion of purchasing power in the lower deciles of the distribution is a long-standing trend that started in the early 2000, when the current account started rising.¹⁰ Survey data show that lower/median income households tend to have a propensity to consume close to one (see Börsch-Supan et al. 2006). The shift in income distribution toward the top (where propensity to consume is low) away from the median/bottom (where propensity to consume is high) explains why the aggregate consumption rate has declined in tandem with the disposable income ratio, contributing to the current account surplus, as documented above.



¹⁰ Large-scale immigration after 2010 also played a significant role for the dynamics of bottom incomes in most recent years (see DIW Wochenbericht 19/2019).

D. NFC Gross Saving and Income Inequality

14. Given high wealth inequality, rising corporate profits (and savings) contributed to widening income inequality. Corporate ownership (and capital ownership in general) is highly skewed everywhere, but particularly so in Germany, where large industrial companies are often family-owned, and housing ownership is not widespread among the general population (see above Figures 5–6). Consequently, the increase in corporate profitability and retained earnings has boosted incomes and asset prices of the richest households, while the average and lower income households have been experiencing the opposite trend in their relative incomes, due to lower wage growth and lower interest incomes (Figures 8–9). The rise in NFC profits underlying its saving rate has, therefore, likely contributed to increasing income inequality in Germany, beyond and above the rise in inequality driven by lower labor shares. We proceed with testing this prediction.

15. Testing the relationship between NFC saving and income inequality. We show that the relationship between rising NFC saving (driven by profits) and rising income inequality over the medium-long term, enabled by skewed wealth distribution, holds across a panel of advanced economies over the last two decades. To this end, we estimate the following regression equation:

$$IncInequ_{ct} = \alpha + \gamma_c + \beta NFCGS_{ct} + \delta_t + \varepsilon_{ct}$$

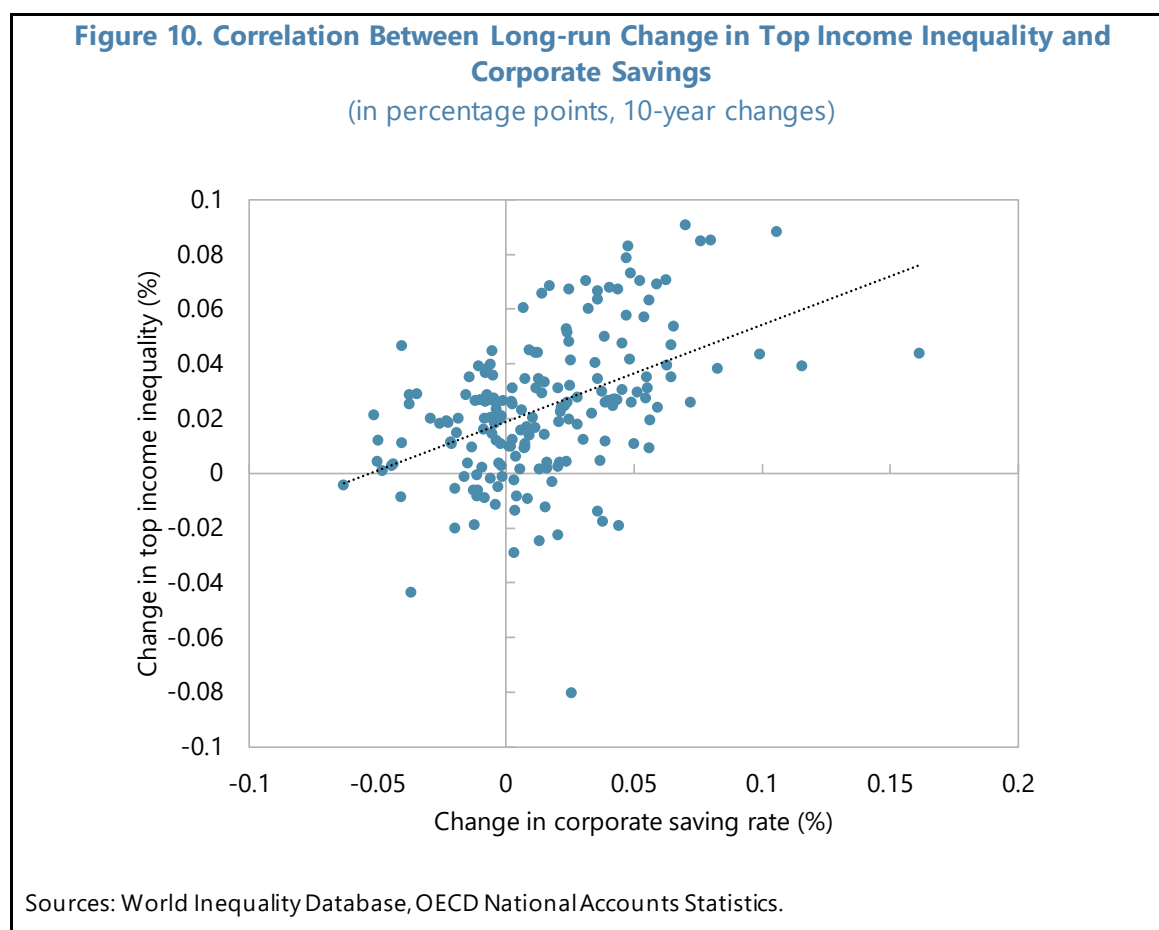
to test whether, within a given country, higher NFC gross saving rates are associated with higher income inequality over time as hypothesized (i.e. $\beta > 0$). We collect sectoral national account data to compute the NFC saving rate (in percent of GDP) and gather income inequality indices from the World Inequality Database (WID), obtaining an unbalanced panel of 27 countries (both advanced and emerging) broadly from 1995-2015. Results are summarized in columns 1–2 of Table 1. Consistent with our hypothesis, an increase in the NFC saving rate is associated with an increase in

Table 1. Germany: Corporate Saving and Top Income Shares

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: Top income share (10 percent)					
	Level	5-year change		7-year change		10-year change
NFC gross saving rate	0.422*** (4.28)	0.254*** (4.15)	0.167*** (5.34)	0.115* (1.67)	0.207*** (2.72)	0.281* (1.80)
Country FE	Y	Y	N	N	N	N
Time FE	N	Y	N	Y	Y	Y
Constant	0.294*** (23.18)	0.287*** (30.70)	0.00759** (2.35)	0.00797** (2.23)	0.0111*** (3.13)	0.0171* (1.82)
N	447	447	311	72	43	28
R2	0.225	0.548	0.214	0.181	0.254	0.594

Sources: OECD National Accounts, WID, IMF staff calculations. T-statistics based on robust standard errors in parentheses.

income inequality, with the relevant coefficient estimates being statistically and economically significant: a 1 percentage point increase in NFC saving rate is associated with 0.3-0.4 ppt increase in the share of income going toward the top 10 percent highest-income individuals. The strong empirical relationship between corporate saving and income inequality also holds in long-run changes. Regressing 5, 7, and 10-year changes in the top 10 percent income share on the corresponding change in corporate saving rate in each country yields similar estimates (column 3-6 of Table 1).¹¹ Figure 10 below illustrates the strong positive correlation across the sample by plotting the overlapping 10-year change in both variables against each other. Statistically, the variation in corporate saving over time can explain 20 percent of the long-run change in income inequality in the sample.



16. NFC profits interact strongly with wealth inequality in widening the income distribution. We unpack the above correlation further to test if the underlying pattern conforms to our predictions. If unequal wealth distribution allows higher corporate profits to disproportionately benefit high-income households who own the corporations, then a given increase in profits should give rise to a stronger increase in income inequality if wealth concentration is higher, particularly if

¹¹ That is, we estimate the equation in long changes instead of levels: $\Delta IncInequ_{ct} = \alpha + \Delta \beta NFCGS_{ct} + \delta_t + \varepsilon_{ct}$.

variation in wealth inequality across countries reflects to a large extent variation in business ownership inequality (Figure 6). We test this prediction in the following regression:

$$\Delta IncInequ_{ct} = \alpha + \delta_t + \beta_1 \Delta NFCGOS_{ct} + \beta_2 \Delta NFCGOS_{ct} * WealthInequ_c + \beta_3 * WealthInequ_c + \varepsilon_{ct}$$

If this hypothesis is true, the coefficient on the interaction term between change in corporate profits ($\Delta NFCGOS_{ct}$) and the country-specific wealth inequality index (measured by the top 10 percent wealth share) should be positive. Results of this regression are summarized in Table 2.

Table 2. Germany: Interaction with Wealth Inequality							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Dependent variable: Change in Income Inequality						
	5-year change			10-year change			
Profit Change	-0.639*** (-3.43)	-0.581** (-2.16)	-0.930* (-1.74)	-0.778** (-2.18)	-0.850*** (-2.64)	-5.714*** (-16.01)	
Profit Change*Wealth Inequality	0.0125*** (3.31)	0.0118** (2.30)	0.0190* (1.82)	0.0149** (1.99)	0.0165*** (2.70)	0.109*** (16.80)	
Wealth Inequality				0.000343* (1.80)			
NFC Saving Change							-2.554*** (-12.76)
NFC Saving Change*Wealth Inequality							0.0488*** (14.44)
Country FE	N	Y	Y	N	Y	Y	Y
Time FE	Y	Y	Y	Y	Y	Y	Y
Constant	-0.000993 (-0.13)	0.000950 (0.15)	-0.00114 (-0.17)	0.0104 (0.97)	0.0126* (1.75)	0.0284*** (8.50)	0.0337*** (12.55)
N	273	273	64	164	164	27	24
R2	0.201	0.246	0.293	0.190	0.315	0.988	0.990

Sources: OECD Sectoral National Accounts, WID, IMF staff calculations.
 Note: Income inequality measured by top 10% income share, wealth inequality by the top 10% wealth share.
 Columns 1–2 and 4–5 use overlapping 5 and 10-year changes. Columns 3–4 and 6–7 use non-overlapping changes.
 T-statistics based on robust standard errors in parentheses.

17. Results are consistent with our hypothesis. Higher corporate profits are associated with lower income inequality only for countries with low wealth inequality (below the 40 percentile of the sample). For higher levels of wealth inequality (and Germany far exceeds this threshold), an increase in corporate profits is associated with higher income inequality over time, with the increase being larger if wealth inequality is higher. We obtain similar results for the interaction between wealth inequality and corporate saving (instead of profits), consistent with the view that higher corporate

saving (due to higher profits that are retained and boost long-term capital income) benefit the rich households and widen income inequality in an environment with high wealth inequality.

The regression results imply that the rise in corporate saving, coupled with the degree of wealth inequality, can explain about half of the rise in top income inequality in Germany over the period 2000–2015.

E. The Blurred Boundary Between Household and Corporate Savings

18. Marginal propensity to save increases in income and wealth. The empirical evidence so far has shown that widening income inequality in Germany, driven in large part by higher corporate profits, was associated with lower disposable incomes of households in the bottom deciles of the distribution and higher incomes of top wealth households (who own the corporations), both in absolute and relative terms (see Figure 9). It is widely documented that the marginal propensity to consume declines with income and wealth (see e.g. Dynan et al. 2004 for the US, Arrondel et al. 2015 for France and Späth and Schmid 2018 for Germany). Survey data show that one third of German households do not save, while the wealthiest save a very high share of their income (see Börsch-Supan et al. 2006). As households with high MPC (in fact, close to one) experience a decline in disposable income (in relation to GDP) and households with low MPC the opposite, the average consumption/GDP ratio is bound to decline, boosting the aggregate private saving rate.

19. Higher corporate saving is associated with higher overall private saving when ownership is more concentrated and corporations more likely to respond to their controlling owners' tax incentives. Firms may have a motive to accumulate saving for precautionary reasons, especially to finance investment in innovation and intangible capital (see Falato et al. 2013; Adler et al. 2018). This business-driven motive for corporate saving, however, should be independent of the degree of ownership concentration. If, however, there are also strong tax incentives for shareholders to retain savings within the firm rather than have them distributed, then we should see a stronger correlation between corporate and overall private saving when wealth distribution is more concentrated. Two reasons underly this prediction. First, a higher ownership concentration implies a higher incidence of "closely-held" firms (as opposed to arms-length shareholder-manager relationships), where the saving/investment behavior of the firm at least partly reflects personal incentives (especially tax incentives) of the largest owners rather than pure profit maximization.¹² Indeed an established feature of the German corporate governance system is the high concentration of control (Becht and Boehmer, 2001; Faccio and Lang, 2002). Corporate savings would then partly reflect disguised savings of wealthy households. Second, high wealth inequality also implies high concentration of aggregate private savings among the wealthy: using German household survey data, Späth and Schmid (2016) estimate that 54–65 percent of aggregate saving is carried out by the top 10 percent wealthiest households. Therefore, by simple composition effect, aggregate private

¹² Peter (2019) shows in a structural model why high wealth inequality tends to be accompanied by high share of closely-held firms. Corporate taxation regimes that favor retained earnings have been shown to induce closely-held firms to partially serve as tax shelters among others in Norway (Altstadsaeter et al, 2014), Sweden (Jacob and Alstadsaeter, 2013), while the more general view that principal-agent issues play an important role in corporate responses to taxation has also been documented for the US (Chetty and Saez, 2005, 2006).

saving rates are more strongly driven by household saving behavior at the top when wealth concentration is high. Putting both arguments together: as corporate savings reflect to a large extent household saving at the top and, at the same time, private saving is driven by top savings when wealth is concentrated and firms are closely-held, the positive correlation between private saving and corporate saving should be stronger when wealth inequality is higher. We test this prediction in the following by regressing the private saving rate on the corporate saving rate and its interaction with measures of wealth inequality:

$$\Delta Private Saving_{ct} = \alpha + \delta_t + \beta_1 \Delta NFCGS_{ct} + \beta_2 \Delta NFCGS_{ct} * WealthInequ_c + \beta_3 * WealthInequ_c + \varepsilon_{ct}$$

Results in Table 3 strongly support the prediction that with higher wealth inequality, overall private saving rates are more closely linked with corporate savings, as the interaction term between NFC saving and wealth inequality (measured either by top 10% wealth share or net wealth Gini coefficient) is positive and strongly statistically significant. This result, in turn, supports the view that at least part of the change in corporate saving over time is indeed disguised household saving when wealth is highly concentrated.

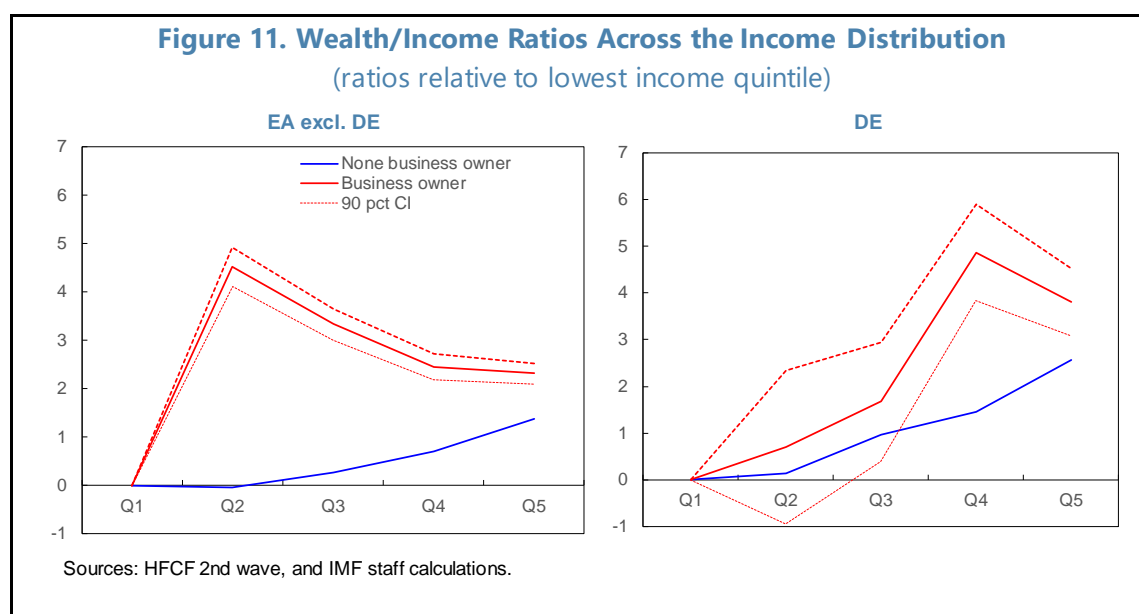
Table 3. Germany: Corporate Savings and Aggregate Private Savings

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable: 5-year change in private saving rate					
NFC Saving Change*Top wealth share	0.0113*** (10.68)		0.0113*** (10.30)	0.0113*** (7.54)		0.0117*** (6.49)
Top wealth share	0.0547** (2.45)		0.0430 (1.64)			
NFC Saving Change*Gini coef.		0.920*** (9.60)			0.907*** (6.48)	
Gini coef.		7.390 (1.55)				
Time FE	Y	Y	Y	Y	Y	Y
Country FE	N	N	N	Y	Y	Y
N	110	71	81	110	71	81
r2	0.562	0.564	0.483	0.585	0.575	0.543

Sources: OECD Sectoral National Accounts, WID, IMF staff calculations.

Note: NFC Saving change are 5-year non-overlapping changes in the gross saving rate of the non-financial corporate sector; t-statistics based on robust standard errors in parentheses. Regression constant included but now shown.

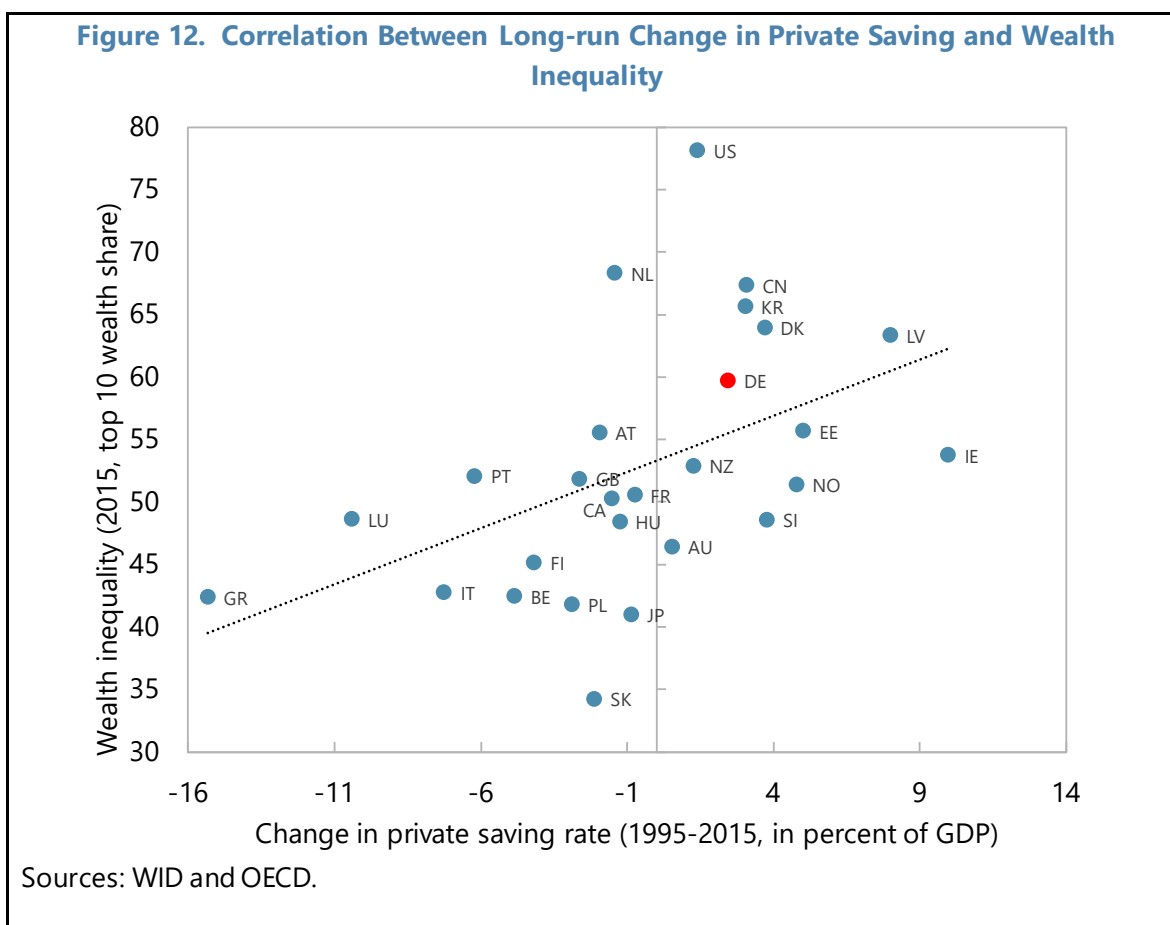
20. Complementing the macro results, micro data analysis further supports the finding that concentration of wealth and saving in the top of the distribution in Germany is strongly driven by closely-held firms. Figure 11 plots the estimated profile of wealth to income ratio across income quintiles in Germany versus elsewhere in the Euro area, separately for business owners with controlling stakes in private businesses and the rest of the population. Differences in wealth/income ratios reflect (in steady state) differences in initial wealth endowments, income growth and most importantly, saving rates (Piketty and Zucman, 2014). Economic theory predicts that business owners will generally accumulate more wealth relative to incomes. However, the fastest accumulation occurs typically at lower levels of income, as entrepreneurs have less access to outside capital when revenues/incomes are relatively low (Quadri, 1999), which is the pattern we observe elsewhere in the Euro area. In Germany, by contrast, the highest implied saving rates and saving differentials between business owners and non-owners occur toward the top of the income distribution. Therefore, not only is private saving highly concentrated in the top in Germany, it is particularly concentrated among rich business owners of closely-held firms where the boundaries between household and business savings are most prone to be blurred.¹³



21. Persistent, concentrated rise in private saving exacerbates wealth inequality over time. Wealth inequality itself widens with rising income inequality, especially if these income inequalities are sustained over a long period of time. As richer households have higher saving rates, top-biased income trends such as higher corporate profits naturally lead to higher saving rates by these households, which over time, lead to even more wealth accumulation at the top, exacerbating wealth inequality (Figure 1). In fact, the large body of literature on wealth inequality has shown that saving rates increasing in wealth is essential to match the tail of the empirical wealth distribution

¹³ The empirical framework underlying the wealth/income profiles estimates is summarized in the Appendix.

(see Benhabib and Bisin, 2018 for a survey of the literature). Taken together, our results imply that rising corporate and private saving rates, accruing to the top of the wealth distribution, are eventually associated with yet higher wealth inequality. The interaction between wealth inequality and private saving therefore goes both ways and is thus mutually reinforcing. Cross-country data on private saving evolution and wealth inequality bear this prediction out: In Figure 12, we find a strong positive correlation between long-term changes in private saving rates and the resulting level of wealth inequality (and a similar one using corporate saving rates). *Variation in private saving evolution over the past 20 years explains over 23 percent the current cross-sectional variation in current wealth inequality across 27 countries in our sample.*



F. Conclusion

We can summarize the key takeaways of the paper as follows:

- **Trends in increasing corporate profits and gross savings have widened top income inequality**, as corporations are typically owned by households in the top of the wealth distribution. The impact on income inequality is more pronounced in countries where the rise in profitability was a result of lower wage growth and labor income shares to start with, as was the case in Germany.

- **The association between rising corporate profits and income inequality is stronger in countries with higher wealth inequality**, where corporate ownership tends to be more concentrated among the wealthiest households.
- Richer households have higher propensity to save, so that **higher corporate profits and savings (or any other top-biased income growth) are associated with increased aggregate private saving rates when corporate wealth is concentrated**.
- **The income-wealth inequality loops are self-reinforcing**. Over time, top-biased income growth, reflected in rising private saving rates, results in even higher wealth inequality.

22. The analysis sheds light on the central role wealth inequality plays for macroeconomic adjustments and imbalances. Not only does wealth inequality affect the distribution of returns to capital and labor at the micro level, it is a powerful force shaping the macroeconomic adjustment to external shocks/secular trends, as illustrated with the case of German aggregate private saving (and by extension, current account balance) in response to rising corporate profitability.

23. In Germany, a source for skewed wealth distribution is the low average rate of home and equity ownership. Household assets are not diversified, with the bulk of savings by households below the top of the distribution stored in saving accounts bearing low (or even zero) deposit rates. While this may limit households' financial vulnerabilities, the high risk/debt aversion and lack of portfolio diversification also hurts long-term prospects for wealth accumulation among large segments of the population.

24. The concentration of privately-held and publicly-listed firm ownership in the hands of industrial dynasties and institutional investors is especially prevalent in Germany, possibly reflecting distortions in firm entry, financing conditions and tax incentives. Recent literature has shown that corporate ownership concentration may be partly a result of financial market frictions, particularly frictions in credit markets, equity issuance and governance. Peter (2019) shows that reducing the fixed costs for IPOs would significantly lower the share of private firms and wealth inequality in Germany. Franks and Mayer (2001) provide evidence that concentrated corporate ownership in Germany is conducive to exploitation of private benefits by block shareholders. This suggests that further expanding venture capital financing along with "exit" opportunities for start-ups, while reducing cost of equity issuance, would not only contribute to more business dynamism but also allow the resulting productivity gains to be shared more broadly. Lastly, the family business asset exemption of the German inheritance and gift tax regime, while commonly associated with ownership stability of the *Mittelstand*, also plays an important role in entrenching wealth inequality and thus inequality of opportunity across generations.

Appendix I. Wealth-to-Income Profile Estimation

Table A1. Wealth/Income profiles across income quintiles and business owner status

	(1) DE	(2) EA excl. DE	(3) DE	(4) EA excl. DE	(5) DE	(6) EA excl. DE
	<i>Dependent variable: Net wealth/income ratio</i>					
Quintile 2	0.152 [0.42]	0.102 [1.00]	0.145 [0.39]	.077 [0.79]	.141 [0.40]	-.036 [-0.36]
Quintile 3	0.979*** [2.69]	0.444*** [4.40]	0.942*** [2.57]	.376*** [3.85]	.970*** [2.75]	.269*** [2.67]
Quintile 4	1.660*** [4.71]	0.825*** [8.26]	1.615*** [4.54]	.689*** [7.11]	1.447*** [4.21]	.694*** [6.85]
Quintile 5	2.824*** [8.46]	1.362*** [14.42]	2.551*** [7.48]	1.194*** [12.94]	2.573*** [7.79]	1.367*** [14.19]
Age	-0.156*** [-3.81]	.057*** [4.93]	-0.159*** [-3.84]	.028** [2.48]	-.164*** [-4.19]	.020* [1.77]
Age squared	0.0023*** [6.24]	0.0007*** [6.96]	.0024*** [6.22]	.001*** [9.90]	.002*** [6.75]	.001*** [10.60]
Business owner			1.345*** [4.47]	1.889*** [23.59]		
Business owner x Q 2					.558 [0.56]	4.553*** [18.29]
Business owner x Q 3					.703 [0.91]	3.060*** [15.50]
Business owner x Q 4					3.417*** [5.58]	1.763*** [10.95]
Business owner x Q 5					1.230*** [3.15]	.947*** [7.76]
N	2350	40481	2350	40481	2350	40481
Pseudo R2	0.104	0.033	0.109	0.036	0.110	0.036

Notes: ***, **, * denote significance at the 1%, 5% and 10% level respectively. T-statistics in brackets. Constant term is included but not reported.

Table A1 summarizes results of median regressions with the net wealth to income ratio as the dependent variable. The regression specification follows Quadrini (1999). The regressions are performed on alternating samples with and without Germany. Quintile dummies refer to household income quintiles which are calculated on pre-tax income at the country level. Business owner is a dummy variable for households which have a controlling stake in a private business, that is, draw net profits from an unincorporated enterprise, where household members "make the operational decisions affecting the enterprise, or delegate such decisions while retaining responsibility for the welfare of the enterprise".

As the HFCS provides multiply imputed values to cover for item non-response via stochastic imputation, we follow the standard procedure to estimate model parameters from multiply imputed data and adjust coefficients and standard errors for the variability between imputations.

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GERMANY

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TAX PRESSURES AND REFORMS OPTIONS¹

Germany's tax base is under pressure from the dual global problems of base erosion and profit shifting by multinational businesses and tax competition among countries—both of which have been intensified by digitalization. Germany has been a leader in adopting anti-avoidance provisions. This, in combination with being a large economy, allows Germany to maintain a tax rate higher than the OECD average. Efficiency-improving tax reforms are possible, ideally to address the domestic tax competition and complexities arising from having both a federal and a municipal corporate income tax, and in any event through technical reforms to address certain inconsistencies that have arisen in the interaction of anti-avoidance provisions with other tax laws. Germany's labor tax wedge is high, especially for secondary earners in couples. Careful reforms, safeguarding tax preferences for families while avoiding negative labor supply effects for secondary earners, are warranted.

A. Introduction

1. **Germany's corporate income tax (CIT) system is, like that of most open economies, under pressure from profit shifting and tax competition.** A recent IMF staff paper for the Executive Board (IMF, 2019) describes the general global issues and several reform options. These issues are relevant for Germany, though the specific institutional and macroeconomic situation must be considered in assessing how any of these would affect Germany.
2. **Germany's position on the international spectrum of applicable business tax rates has been rising as a relative matter, compared to other OECD countries.** Many of those countries have been reducing their rates—most recently and notably with the US statutory rate reduction in 2018 from an average of nearly 40 percent to 25-26 percent (including subnational taxes). This shift alters some of the considerations that arise for Germany under the CIT system.
3. **This paper assesses international tax pressures from profit shifting and tax competition in the German context and considers possible reforms to labor taxes.** It examines international tax issues under the current system, including in light of changes in the international environment resulting from the EU Anti-Tax Avoidance Directive (ATAD), the OECD Base Erosion and Profit Shifting Project (BEPS), and the recent US tax reform (TCJA). The paper also assesses the implications of various reforms to the international tax architecture that are under discussion in the international dialogue, and are considered in the recent Board paper, discussing their implications for Germany including in light of their interaction with the municipal business tax. Finally, it turns to an analysis of the labor tax wedge and possible reforms to reduce marginal tax rates, in particular for secondary earners in couples.

¹ Prepared by Victoria Perry, Alexander Klemm, and Shafik Hebous (all FAD).

B. Analysis of Issues in Germany

Rate and Base

4. The German CIT system consists of a federal and local business tax and is augmented by the solidarity surcharge. The federal corporate income tax (FCIT, “Körperschaftsteuer”) stands at 15 percent. The German FCIT base has relatively few tax expenditures in line with best international practices. The additional local business tax (LBT, also known as “trade tax”, in German: “Gewerbsteuer”) is raised on a slightly broader base,² which adds back, among other items, ¼ of interest payments.³ Its rate averages another 14 percent, with a statutory minimum of 7 percent.⁴ Both the FCIT and LBT are levied independently and are nondeductible from each other. The FCIT is augmented by a surtax (“Solidaritätszuschlag”) of 5.5 percent. The combined rate is roughly 30 percent, on average.

5. The LBT plays an important role for local public finances but has some undesirable features, creating both current and potential future problems. In 2018, the LBT made up 78 percent of municipalities’ self-raised revenues and 41 percent of their total revenues.⁵ Because the rate is set by municipalities, the LBT creates tax competition within Germany.⁶ It also adds complexity, given its different tax base. As will be discussed, the LBT creates various difficulties with respect to its interaction with German anti-avoidance measures and possible international CIT reform options.

6. The combined German CIT rate is currently among the highest in the world. It is particularly high compared to other advanced economies, including advanced European economies (Figure 1). Since the last major German rate cut in 2008, the trend toward lower CIT rates continued in most regions, opening up an increasing gap between Germany and other countries. Effective average tax rates, which take account of the tax base in addition to the rate, are equally very high in Germany, confirming that tax bases are relatively broad, and therefore do not compensate for the high tax rate (Figure 2).

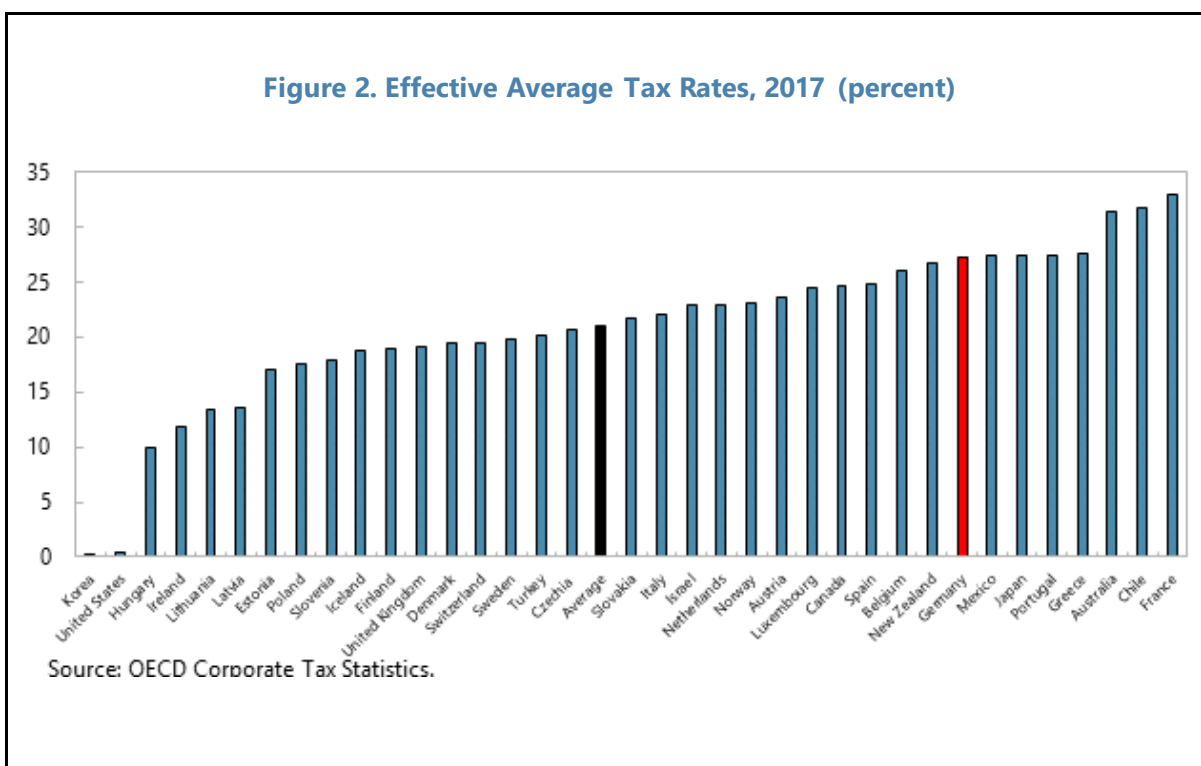
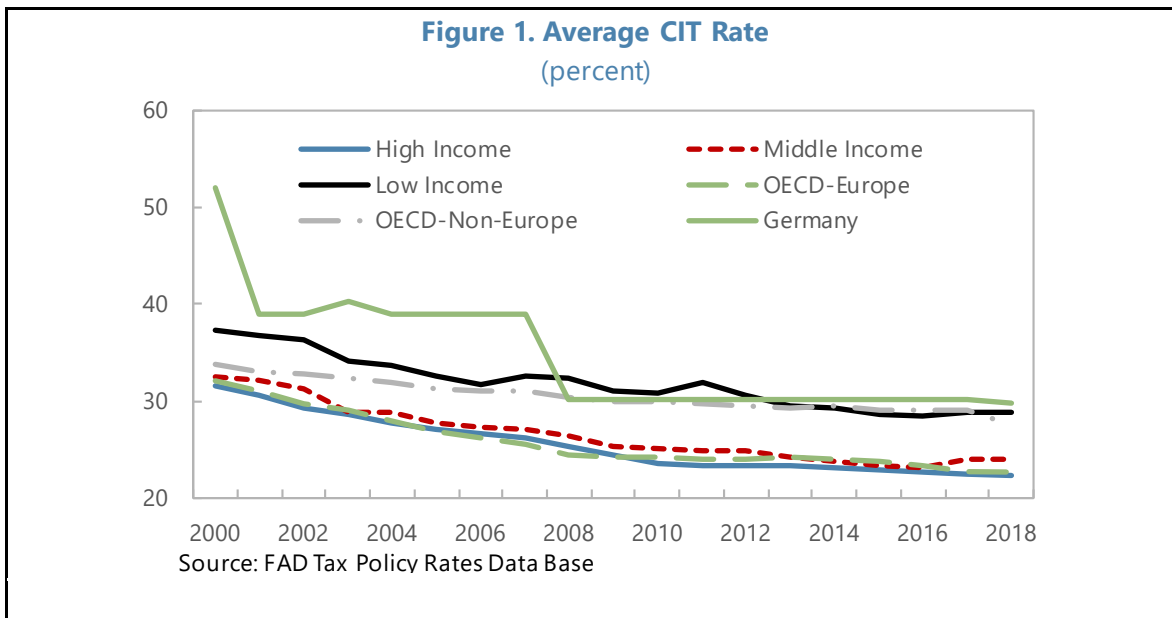
² For companies operating in more than one municipality, tax bases are allocated using a payroll-based formula.

³ Other additions include ¼ of the following: 1/5 of rent and leasing rates for movable property, ½ of rent and leasing rates for immovable property, ¼ of license fees and royalties (note that this indeed means that ¼ is multiplied by the other fraction given). There are also deductions, for example, for 1.2 percent of the official value of real estate to reflect the fact that this is already covered by the municipal property tax.

⁴ See Annex Table 1 for details.

⁵ Source: Federal Statistical Office. Total revenues of municipalities include their revenue share of PIT and VAT.

⁶ E.g., see, Fossen and Steiner (2018).



7. Despite the high tax rate, the broad legal base, and apparently robust anti-avoidance provisions, CIT revenues in Germany are surprisingly low (Figure 3). This is a longstanding puzzle, and a starting point in this analysis. It partly reflects the low rate of incorporation, with many,

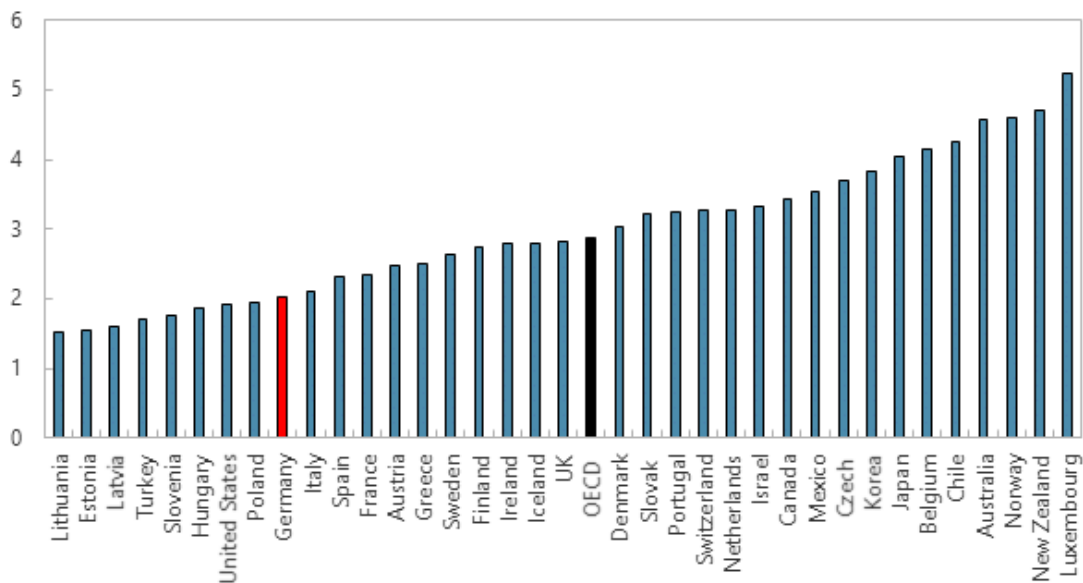
even medium-sized, businesses under the personal income tax (PIT) in Germany.⁷ However, it very likely could suggest a loss of tax base from shifting multinational enterprise (MNE) profits from Germany to lower tax jurisdictions: German inward and outward FDI is concentrated in a few countries, some of which are known for their attractiveness for tax purposes (Table 1; Annex Figure 1). And Germany has a rich network of bilateral tax treaties (Annex Figure 1). Finally, the share of gross operating surplus (GOS) of foreign controlled affiliates in total GOS in Germany is below the EU average (Figure 4).

Table 1. German FDI Pattern

<i>Inward (% of total)</i>		<i>Outward (% of total)</i>	
Netherlands	19	Netherlands	17
Luxembourg	17	Luxembourg	13
United States	10	United States	12
United Kingdom	9	United Kingdom	9
Switzerland	8	Switzerland	6

Source: IMF Coordinated Direct Investment Survey (2017)

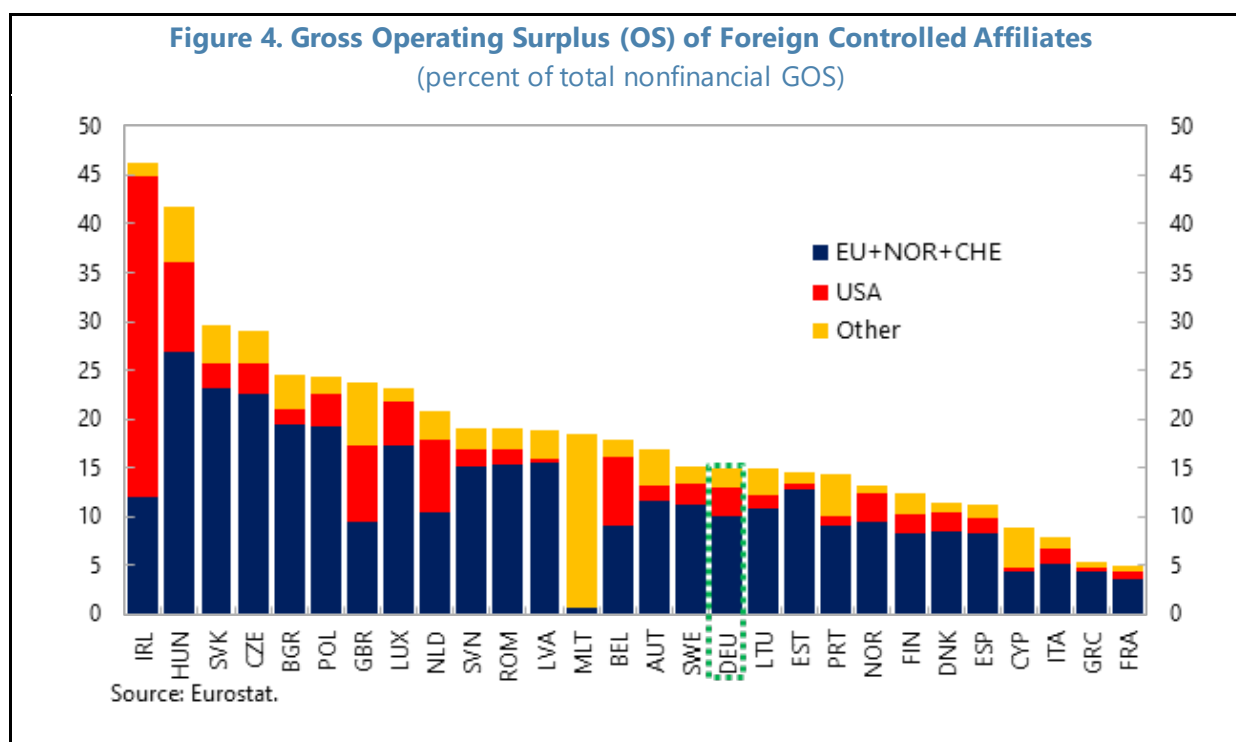
Figure 3. CIT Revenue, 2017 ^{1/}
(percent of GDP)



Source: OECD Revenue Statistics

^{1/} For comparability purposes, OECD figures were used, those from national authorities may differ for various reasons.

⁷ There is no obvious tax reason for the low incorporation, as the top PIT rate is very close to the combined CIT and dividend tax.



8. There is also some more direct evidence of profit shifting out of Germany, but the exact magnitude is difficult to gauge. Various strands of literature report estimates for Germany, based on different methods:⁸

- *Macroeconomic approach:* Using macro data with estimated elasticities from U.S. multinationals, Clausing (2016) estimates a revenue loss of 28 percent of German CIT revenues in 2012. Tørsløv, Wier, and Zucman (2018), using a different method based on comparing profit-labor ratios of MNEs and local business, also estimate a CIT revenue loss of 28 percent, but for 2015.
- *Micro-elasticity approach:* Weichenrieder (2009) analyzes firm-level FDI data and finds that a 10-percentage point increase in the parent's home country CIT rate leads to ½ percentage point increase in the profitability of the German affiliate. This estimated elasticity for inbound FDI is larger than that for outbound FDI.
- *Estimates of specific profit-shifting channels:* Hebous and Johannesen (2019) focus on international service payments at the firm-level and find a CIT revenue loss of about 3 percent. Overesch and Wamser (2010) focus on thin capitalization and estimate that a 10-percentage point higher difference in the tax rate between Germany and a foreign country leads to a 1.9 percentage point higher internal-debt ratio of MNEs.

⁸ All cited studies correspond to periods before the implementation of the minimum standards of the G20-OECD BEPS initiative and the ATAD measures.

9. The recent U.S. tax reform can be expected to increase pressures but does not in itself require an urgent reaction in terms of a rate cut. Most saliently, it reduced the combined federal and state CIT rate from an average of over 39 percent to just over 25 percent. This flips the position of Germany—which formerly, like all advanced economies, had a lower rate than the US—to having a somewhat higher rate. The United States is an important location for German outbound FDI (12 percent of total), as well as a substantial (direct and indirect) source of inbound FDI.⁹ Preliminary assessments are mixed: Spengel and others (2018) predict a 25 percent increase in German FDI in the United States, but also a 9 percent increase in the opposite direction. Beer, Klemm, and Matheson (2018) forecast a negative impact on capital stocks and reported profits in Germany. Neither study takes the novel features of the U.S. reform, such as the BEAT and the GILTI,¹⁰ into account in these simulations, though. Boumans and others (2019) report survey evidence that suggests that German firms indeed plan to expand their U.S. operations, while the impact on investment into Germany is ambiguous, being a complement to U.S. investment in some firms and a substitute in others.¹¹

Anti-Avoidance Measures

10. Germany has long been a European leader in the introduction of anti-tax avoidance provisions—the outlines of some which have now been adopted in BEPS and ATAD.¹² Being a leader is not without risks, as it creates an uneven playing field for German multinationals, although the recent spread of such measures reduces this effect. Moreover, even with strong measures, there is always some scope for avoidance, and with a high tax rate, some loss of tax base is inevitable. Anti-avoidance provisions include, importantly, the interest stripping rule based upon limiting the deduction for interest payments to a proportion of earnings before interest tax, depreciation and amortization (EBITDA) which serves as the model for the rule adopted as a BEPS recommendation; strict Controlled Foreign Corporation (CFC) rules; and the “function shifting” provision of the German exit taxation. This section discusses the last two of these.

11. The CFC rules can have unwarranted negative impact, unintended, on some German multinational companies.¹³ There are three aspects of the German CFC rules potentially giving rise to this.

- Most significantly, the threshold rate for the country of investment which triggers an immediate German tax on CFC income is set in German statute at 25 percent. While this remains below the average German combined rate, it is now equal to or higher than the statutory rate in many

⁹ While 10 percent of German inbound FDI comes directly from the US, 36 percent comes through the Netherlands and Luxembourg (Table 1)—a significant though unknown portion of which is ultimately from the US.

¹⁰ Base Erosion and Anti-abuse Tax and Global Intangible Low-Taxed Income. For details on their definition and their international implications see Chalk, Keen, and Perry (2018) and Beer, Klemm, and Matheson (2018).

¹¹ Interestingly, this appears to be anecdotally in line with Spengel and others (2018), above.

¹² I.e., the G20-OECD Base Erosion and Profit Shifting initiative and the European Anti-Tax Avoidance Directive.

¹³ This particular area is one where the huge cut to the U.S. CIT rate actually does have a quite problematic impact.

large jurisdictions that are important for real German investment—now notably including the United States, particularly where outbound investment to the US goes to US states with low state CIT rates.

- The statutory definition and interpretation of “passive” is rather broad. In order to be treated as CFC income, the activity in the foreign subsidiary giving rise to the income must be deemed “passive” as opposed to active business income (as is always the case in CFC rules, as they are designed to prohibit the siting of intangible assets in low tax jurisdictions). While in regard to investments within the EU this definitional problem is mitigated by the “substance” rule set by the European Court of Justice—which negates the application of member states’ CFC rules where a foreign entity within the EU has “economic substance”—this is not the case in regard to investment in the United States. Thus, the triggering rate threshold has become of great importance for investment into the United States.
- With foreign taxes creditable against FCIT only, and the CFC threshold at 25 percent, the effective tax rate on foreign investment can exceed the domestic tax rate. Foreign tax arising on income captured by Germany under the CFC rule is creditable against the German FCIT, but not the LBT.¹⁴ This means that US\$100 of income taxed in the US at 21 percent, ignoring state taxes, would normally give rise to a tax credit of US\$21—but only US\$15 of that can be used, to offset German FCIT. Thus, the total tax burden in Germany will equal US\$15 of German LBT (on average) plus US\$21 dollars of US tax, for a total tax burden of 36 percent—well above the normal tax in Germany of 30 percent.

12. Similarly, in implementing function-shifting rules, Germany was a leader in Europe in introducing an exit-type tax. Such taxes are generally implemented to compensate for the loss of tax revenue to the home country that may occur when assets or business activities are shifted offshore to related entities in lower cost (or lower tax) jurisdictions. Germany is quite unique in Europe for the degree to which its rules, known as “function shifting rules” in Germany, are detailed in statute, in the context of value chain reorganizations, rather than mainly referring to the OECD transfer pricing guidelines (TPGs), which address such related party business activity transfers (since 2010, in a separate Article IX of the TPGs). The German rules, while not in conflict with TPG Article IX, result in a somewhat stricter interpretation—as a result both of the function shifting rules themselves and their interaction with other aspects of the basic German transfer pricing rules. This is

¹⁴ Nor is “regular” foreign tax on active income, but since most such foreign income would be exempted by treaty in Germany it poses less of an issue in that case.

a rather technical area which has given rise to quite a bit of controversy with taxpayers.^{15,16}

C. Reform Options for Germany

13. Despite global downward pressures on CIT rates, Germany—as a relatively large economy—can afford to maintain an above-average tax rate. The economics literature suggests that smaller economies have a higher tax base elasticity than large economies (Bucovetsky, 1991; Keen and Konrad, 2013). Further, the literature cited above predicting the impact of the U.S. rate cut specifically for Germany is ambiguous in regard to negative real investment impacts for Germany. And apparently, too, taxable profits were already being shifted out of Germany through various routes, previous to the US statutory rate cut, attenuating the direct impact of statutory rates in that regard.

14. Private investment can be encouraged by direct incentives it, especially where positive externalities are present, such as for research and development (R&D). Two options for Germany to incentivize investment include:

- **Encourage R&D investments through tax measures that specifically target R&D inputs:** This is far more effective and efficient than ‘patent box’ regimes that offer a reduced CIT rate on qualified income from know-how assets (IMF, 2016). R&D expenditures are widely seen as a key driver of total factor productivity growth. Germany has traditionally fully relied on encouraging firm innovation through direct subsidies without providing any tax deductions or tax credits. Currently, the government is proposing introducing R&D tax credits, but the design is not ambitious enough as it puts an upper cap on the amount of qualified R&D of €2 million (Ministerial draft law of April 12, 2019). At the very least, the cap should be significantly increased, if not eliminated. There is no reason from the externality standpoint to target small firms, as the positive externalities are not restricted to small firms.
- **Provide accelerated depreciation:** Evidence suggests that this measure is particularly effective for cash-constrained firms (Zwick and Mahon, 2016). Accelerated depreciation decreases the user cost of capital through increasing the present value of the stream of tax deductions.¹⁷

¹⁵ The Ministry of Finance notes that since the German rules were adopted in their present form in the 2008 Foreign Tax Act, they have been applied in about 160 adjustments.

¹⁶ An analysis of the history and effect of these rules is given in Van der Vlies (2018). The principal difference between the German rules and the OECD guidelines lies in the valuation of the transferred function. Under the OECD guidelines, ongoing businesses that are moved offshore should be valued as going concerns—which may as in Germany cover valuation by discounting the expected future income stream. But rather than taking the value from the point of view only of the “buyer” offshore, the German rules require also valuing from the perspective of a prudent German manager the potential lost future profits from the transfer. The transfer price is then determined as the average of the two estimates. This can have the effect of twice taxing half of the gain realized by the enterprise from the benefit of moving abroad—once abroad, as profits are actually realized there, but also in Germany ex ante.

¹⁷ One possibility is to offer a higher depreciation rate in the first year (e.g., in 2018, Canada introduced a triple first year depreciation for capital spending). The United States introduced full expensing of capital goods, the most generous form of accelerated depreciation, in 2018.

Accelerated depreciation benefits firms acquiring tangible assets, since spending to create intangible assets, such as the wages of researchers, is typically expensed anyway.

Reforms to Anti-Avoidance Provisions

15. The unintended possibility of excessive taxation resulting from CFC rules can be addressed in at least three ways. The simplest would be to reduce the CFC threshold. This would not only reduce the number of cases covered but would also reduce the risk that countries are caught whose tax rates exceed the FCIT and therefore are not fully creditable; it would eliminate this risk if it were aligned with the FCIT rate. It could be noted that under the ATAD, the triggering rate for application of the now-mandatory CFC rules in the EU is much lower—50 percent of the applicable CIT rate in the home country. In Germany, were the ATAD rule adopted, the rate would be only 7.5 percent (as opposed to 25 percent), as the LBT is not counted for this ATAD purpose. While it is probably not advisable to go that far, it would be wise to consider dropping the CFC threshold to 15 or 20 percent to serve its original purpose. Another option is to make foreign taxes creditable against the LBT. This second solution has the advantage that it would continue to work even under any future FCIT cut. The definition of passive income could be revisited as well.

16. From the point of view of economic efficiency, the question of exit taxation should turn on whether such moves erode the overall tax base—not merely that in the transferring country, or rather simply realize future location savings, even if perhaps in lower tax jurisdictions. Interestingly, the German system now exempts “transfers of function” where more than 25 percent of the value transferred arises from intangible assets, in which case valuation is undertaken not on an entity/activity basis of future profit streams, but rather on an asset valuation basis. This exception was apparently intended to avoid an incentive to establish research and development activities abroad rather than in Germany—since if the results of R&D were developed in Germany, without this rule the transfer of functions tax could apply when these results might preferably be used elsewhere. This exemplifies the typical disadvantage of exit taxes, which is to discourage investment in the first place. It is not clear, however, how big this issue really is—and certainly not clear in comparison to the exit taxes imposed in other advanced countries.¹⁸

D. Reactions to International Developments

Minimum Taxes

17. The introduction of minimum taxes can be expected to benefit Germany, with internationally coordinated solutions particularly powerful. The 2018 U.S. reform introduced two provisions that imply minimum taxation of inbound and outbound investment (BEAT and GILTI). A recent Franco-German proposal also proposes inbound and outbound minimum taxes, but unlike the US provisions, with mechanisms to avoid double taxation. While a unilateral adoption of minimum taxes in Germany is feasible and could protect its tax base, international coordination would be even more effective, so the strategy of a joint proposal made at the Inclusive Framework is

¹⁸ It is understood that this issue is under study in the Ministry of Finance.

promising. If a large group of countries agreed on a common approach and introduced such taxes, it would have a dampening impact on tax competition generally, allowing source countries to raise CIT rates toward the minimum tax levels, and also avoiding competition based on taxes for corporate headquarters among residence countries. Coordination to adopt similar implementation approaches would reduce compliance costs. Minimum taxes can be applied within the current international tax system or in combination with the international reform options discussed below.

18. Efficient minimum taxes will face implementation issues that will need to be resolved, some of which are specific to Germany. The Franco-German proposal is potentially more efficient than cruder minimum taxes but administratively more difficult. Specifically, the proposal for this minimum tax depends on effective levels of taxation in the other country. This can cause difficulties, as even aside from the difficulty in measurement, there are many reasons that tax payments can be low, even in high tax countries. Loss carry forward or accelerated depreciation, for example, can lead to temporarily low tax payments that are made up in future years. A pragmatic approach will need to be found, but there is so far no concrete consensus on how to do it. In Germany, the LBT again creates a difficulty. Notably, to prevent inbound investment in Germany from being subject to minimum taxes in home countries, it is essential that the LBT is also counted. This may be difficult to defend unless symmetrically, credit for foreign taxes is given against the LBT, as discussed above.

Digitalization

19. Potentially significant tax avoidance by digital companies has led to an international debate about their taxation. The debate about the adequate level of taxation should however be distinguished from the question of the allocation of taxing rights. Ring-fencing of a so-called “digital” sector should be avoided. The overall economy is becoming increasingly digitalized, rendering the identification of a digital sector difficult or impossible. In particular, ad hoc taxes, especially if applied to inefficient bases such as turnover, and if adopted in an uncoordinated fashion, can lead to over-taxation of actual profits, as well as economic distortions. Moreover, many current proposals would have strong threshold effects. It is welcome that Germany has avoided such ad hoc taxes for this sector.

20. The growing international debate whether market countries should be entitled to taxing rights over income arising in connection with sales (or activities) in their jurisdictions is very important and represents a major shift in thinking about the international architecture, but implications for Germany are hard to assess. It should, though, be held more broadly than just in regard, again, to the “digital” sector. One suggestion for achieving this would be to extend the definition of “economic presence” establishing taxing rights, ideally based on a new international consensus. This has always required physical presence through “permanent establishments”—but the idea that market penetration can now be so extensive without physical presence as to render the business virtually present in a jurisdiction is under discussion in OECD debate. And the idea has now been explicitly embodied in intrastate corporate taxation among US states, in a recent US Supreme

Court decision¹⁹ which found that the concept of physical presence makes even less sense in light of the modern economy and technology. While likely important for Germany, there are unfortunately no data available that would permit assessing the likely implications for Germany of a move to more generally recognized broader concept of permanent establishments.

Formulary Methods

21. Formula apportionment (FA) approaches mitigate profit allocation issues, including due to increased digitalization of the economy, but are less effective in reducing tax competition. Under FA, the accounts of all affiliates are consolidated at the group level (hence this is referred to as “unitary taxation”), rendering classical profit-shifting techniques among related entities irrelevant, although manipulation of allocation factors would be possible. The consolidated profit is then allocated across jurisdictions using a formula. The allocation factors can reflect the location of production (e.g., payroll, number of employees, and tangible assets) and/or sales. The greater the weight on sales,²⁰ the more the tax deviates from the current production-based system toward a destination-based system, and the more robust it becomes to tax competition given that consumers are far less mobile than most inputs to production. While jurisdictions maintain their sovereignty over the tax rate, agreement on a common tax base is needed for the system to work efficiently. To the extent that jurisdictions try to attract factors that enter the allocation formula, tax competition would continue.

22. Of most relevance for Germany is the EU proposal of a common consolidated corporate tax base (CCCTB) is a form of FA that has attractive features as it reduces opportunities for transfer mispricing and other tax planning schemes within the EU. Shifting profits outside of the EU would remain possible, however.²¹ Fuest, Hemmelgarn, and Ramb (2007) estimate that the CCCTB would lead to a reduction of the German CIT base of 17 percent. The European Commission (2016) found that the German CIT revenues would decline by 0.24 percent of GDP²² (about 15 percent of CIT revenue) as a result of the CCCTB. That does not mean that a CCCTB may not be in Germany’s interest: first, the revenue losses could be smaller if a slightly broader tax base is chosen than the one in the current proposal; second, the reduction in administrative costs and future losses from profit shifting would need to be considered, too; third, the rate could be adjusted if necessary.

23. Proposals for residual profit allocation (RPA) embody some of the aspects of FA, though they may be relatively easier to implement as they (as typically proposed) preserve the arm’s length pricing method for routine profits and are more likely to be revenue neutral for Germany. They do, however, come with their own challenges. While RPA reforms differ in their

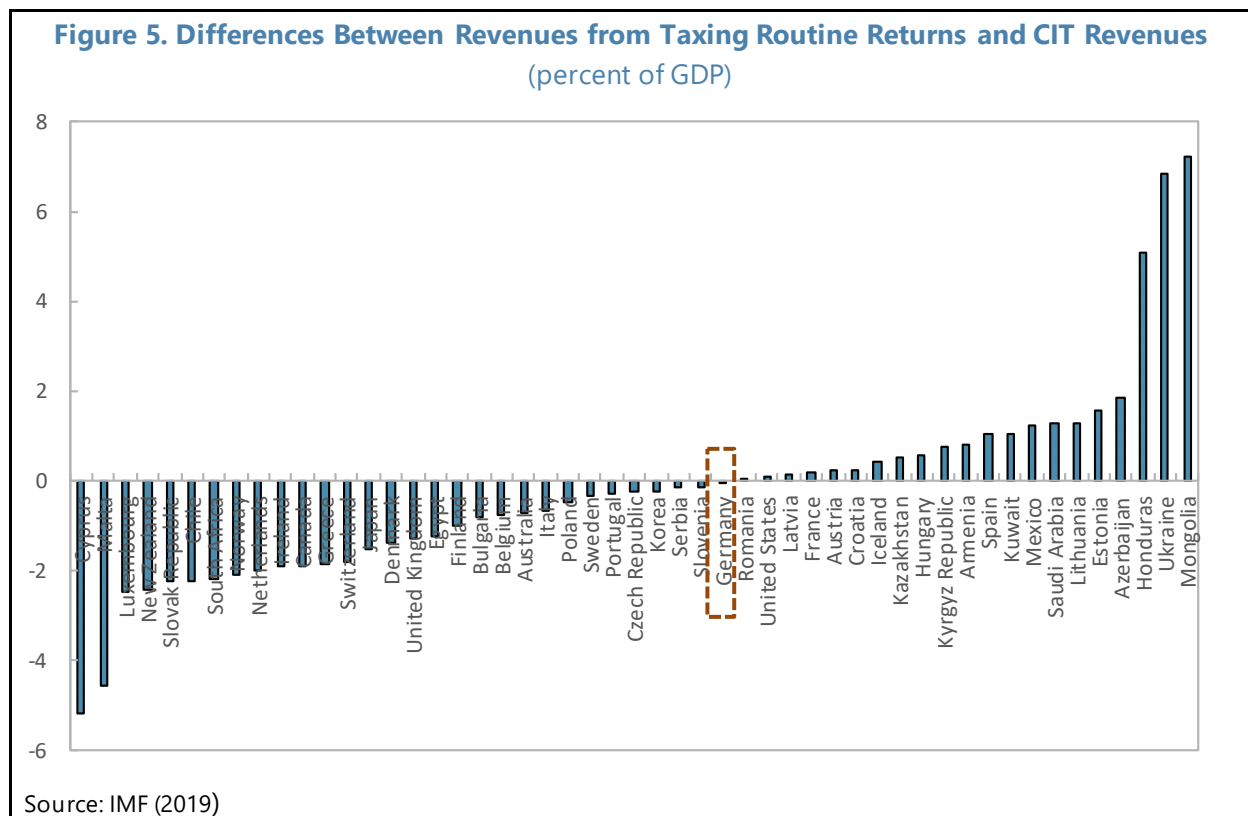
¹⁹ *South Dakota v. Wayfair, Inc.*, 585 U.S. ___ (2018) (138 S. Ct. 2080)

²⁰ “Sales” would then need to be measured on a destination basis, as is the case in the existing subnational FA schemes, such as in the United States.

²¹ The CCCTB as proposed in 2016 also foresaw allowing for super R&D deductions and an allowance for corporate equity (ACE).

²² Table 39, page 150.

details, the main idea is to tax routine returns—defined based on some indicators of routine profits such as a markup—in the source country. The difference between total group profit and total routine profits—i.e., the “residual”—would then be allocated based on a formula, e.g., based on sales by destination. While RPA proposals are currently mainly discussed in connection to taxing digital companies, the difficulties of allocating profits in the presence of intangibles arise more broadly, and the solution should therefore not be restricted to a ring-fenced sector. Estimates suggest that Germany at present taxes profits that are roughly equal to routine returns—based on a markup of 10 percent of the economy fixed assets (Figure 5). However, such estimates crucially depend on the exact proxy for routine profits, reflecting the practical challenge with this reform option. Moreover, as in the FA approach, the allocation of redistribution of profits across countries will depend on the chosen formula.



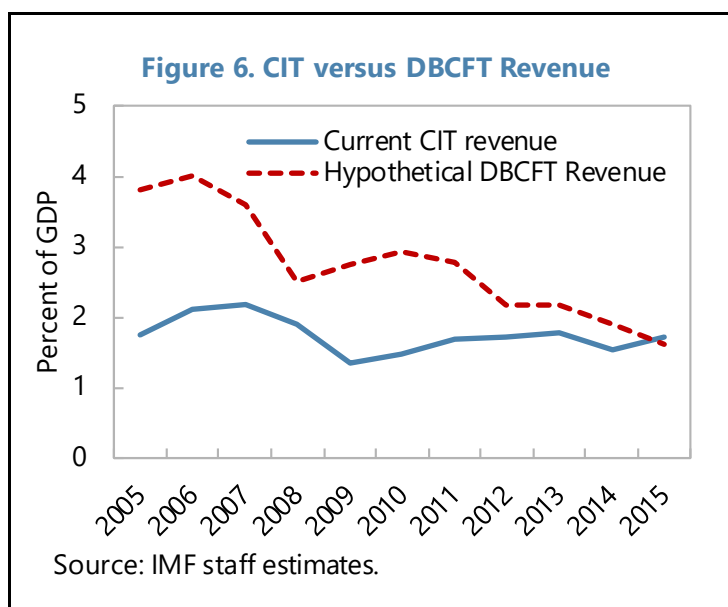
24. The LBT could provide an obstacle in implementing the CCCTB or a global FA in Germany. If the LBT is maintained independently, it would still require transfer prices to determine its base, increasing compliance costs and failing to remove transfer price manipulation incentives. One solution might be to align its tax base. In that case, the tax base allocated to Germany could then be allocated further among municipalities, possibly by a different formula, as this would then

be an internal affair. However, there appear to be some constitutional constraints to full equalization of tax bases,²³ which should otherwise already take place now, independently of a move toward FA.

Destination-Based Taxation

25. Destination-based cash-flow taxes (DBCFTs) are currently not on any country's agenda, but their likely strong impact if adopted by a major economy suggests a need for an analysis of their potential impact on Germany. Estimates in Hebous, Klemm, and Stausholm (2019) indicate that countries with trade surpluses and high incomes are generally more likely to lose revenue. However, surprisingly, Germany is found to gain revenues from a hypothetical DBCFT in 2011,²⁴ reflecting again the weak revenue performance of the current CIT.

The hypothetical DBCFT, under which there is no profit shifting or other avoidance, would then raise more, despite the loss of revenue on net exports. Results using updated data, however, show that Germany would likely lose revenue from a DBCFT in more recent years (Figure 6) as the trade surplus has increased even further. Moreover, as businesses currently under PIT would also move to a DBCFT, some additional losses in PIT revenues would likely increase the revenue loss further. It is important to



note, however, that a unilateral adoption in another country would have potentially severe repercussions for Germany and other countries, because this would reduce the DBCFT adopting country's effective tax rate on export-related rents to zero, creating powerful incentives to shift activity and profits out of Germany and into that country.

E. Labor Taxes

Personal Income Tax

26. Labor income is taxed at progressive rates, with married couples taxed at their average income. The subsistence level (currently €9,168) is not taxed. A unique feature of the German PIT is that the marginal rate rises steadily (with the slope changing once) from 14 to 42 between €9,168 and €55,960. Thereafter it remains flat, with one step rise to 45 percent at €265,326.

²³ The main argument is that taxing rights are allocated to different levels of government and if tax bases were the same, municipalities do not have a right to levy a CIT.

²⁴ The study uses that year because it allows the greatest number of observations across countries.

27. The joint assessment of couples reduces their average tax rate but raises the marginal tax on the secondary earner, reducing his or her incentive to supply labor. Figure 7 compares

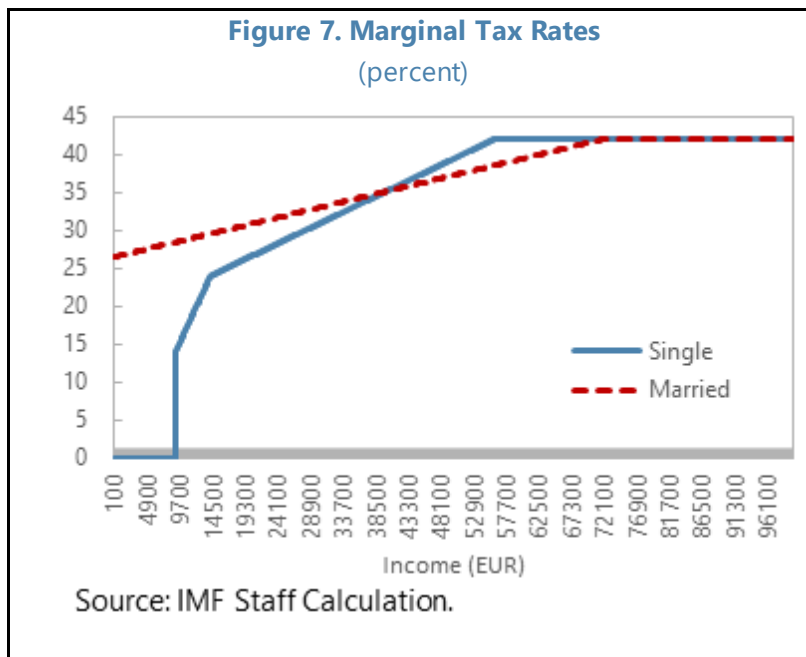
marginal tax rates of a single individual to a married person with the same income whose spouse earns a constant €40,000. It

reveals that the marginal tax rate is increased dramatically for low-paying work of married persons compared to singles (while it is reduced slightly once income exceeds the partner's).

The effect is stronger the greater the partner's income, and in the extreme case, with the partner earning twice the threshold for the maximum PIT rate (i.e., €0.53 million), the marginal tax rate would be 45 percent from the first euro earned by the secondary earner.

The increase in marginal tax rates of secondary earners

therefore reduces incentives to supply labor at both the extensive and intensive margins for low-paying jobs.



28. Any reform proposal to address the negative labor supply effect of the current system will need to reflect various tradeoffs and legal constraints. Many advanced economies have

moved toward individual taxation,²⁵ which fully resolves the problem of high marginal tax rates for secondary earners but has the disadvantage of treating households with similar incomes very differently, depending on how these incomes are distributed. In the German legal context, the subsistence level must remain untaxed. This is implemented through the tax-free allowance, which is set at the subsistence level for an individual, and therefore automatically doubles for a couple under the current system. A move to unadjusted individual taxation would therefore cause issues with one-earner couples, where the earning partner is legally obliged to support the other but would be tax-exempt on the subsistence for one person only. Moreover, any system must not treat a married couple less favorably than two individuals, given constitutional constraints. This would not rule out individual taxation, but prevents any "marriage penalty," as exists in some countries.

29. The Scientific Advisory Council to the Federal Ministry of Finances prepared a study assessing three reform proposals (BMF, 2018a). These are two existing reform proposals²⁶ and a

²⁵ Exceptions include the United States.

²⁶ They have been made by various experts, see previous discussion in Sachverständigenrat (2013).

new one. In their assessment the existing proposals would do little to reduce marginal tax rates on secondary earners, while their new proposal fares better. They also stress the importance to a comprehensive approach including the social security system. The three proposals are:

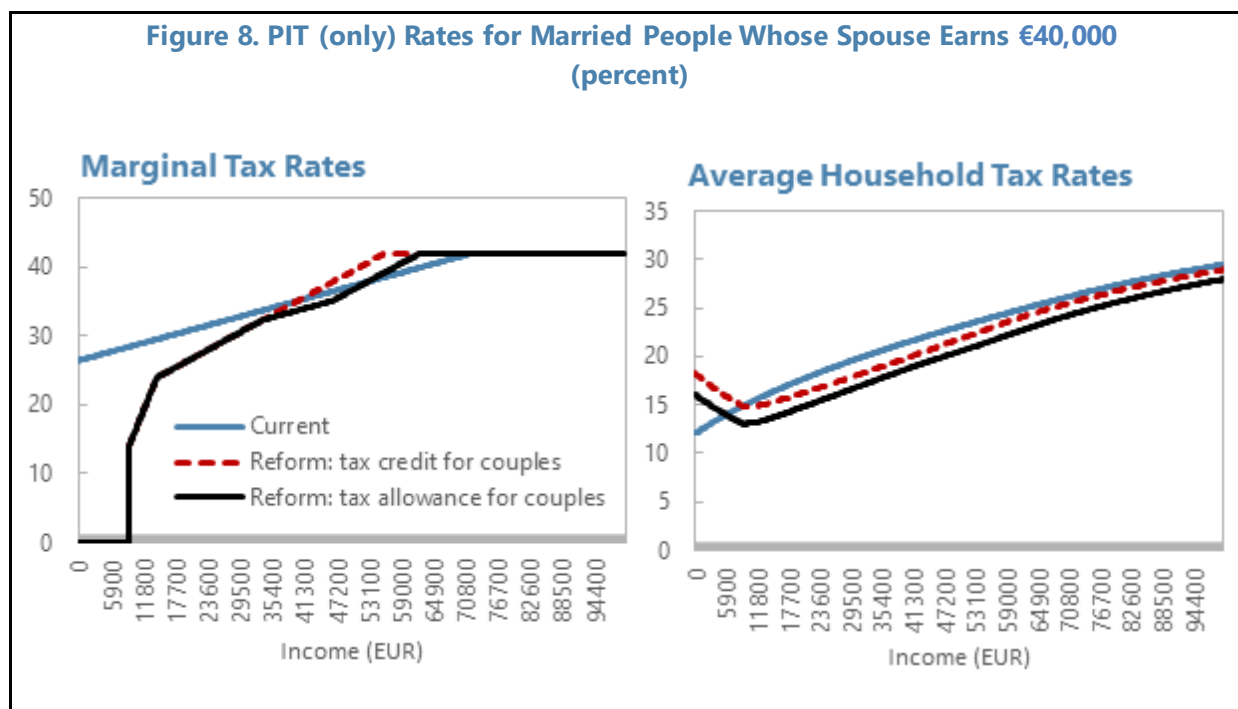
- **Real splitting:** In this proposal couples are taxed individually but can transfer income between themselves up to a maximum amount. It is therefore very similar to the current system, except that there would be a cap on the tax benefit from sharing the income. This proposal would therefore have little impact, except for couples with very large differences in earnings.
- **Transfer of unused allowance:** This proposal also starts with individual taxation but allows transferring only any unused part of the tax-free allowance. This would still discourage taking up work for the secondary earner, as this would lead to a loss in tax benefit of the first earner at their higher tax rate.
- **Additional married couples' allowance:** Again, this starts with individual taxation, but there is an additional allowance for married people, which is withdrawn at 50 percent of the partner's income. This proposal still involves high marginal tax rates for secondary earners, but the 50 percent withdrawal rate mitigates this compared to the other proposals.

30. The mission prepared two additional proposals, which have the benefit of dramatically reducing marginal tax rates for secondary earners, while ensuring that the subsistence level is untaxed for all couples. These proposals, too, start from the premise of individual taxation but with modifications to ensure that at least the official subsistence level for a couple of €15,540 remains tax free, even if there is only one earner.

- **Tax allowance for couples:** The first proposal is to offer one additional allowance of €6,372 for couples, with each partner keeping one standard allowance. Unlike previous proposals, the additional allowance would not be withdrawn, thereby avoiding any negative impact on labor supply of the spouse. This proposal would have the disadvantage of favoring well-off individuals for whom the increase in the allowance is worth more. As shown in the left panel of Figure 8, this reform reduces marginal tax rates for secondary earners so that they match those of a single until both incomes are equal. Thereafter they are briefly below those for a single, as at that point it makes sense to shift the additional allowance to the higher earner. The revenue impact of this reform is likely negative, but as the value of the allowance depends on marginal tax rates, estimating it will require micro data, unavailable to the mission.
- **Tax credit for couples:** The second proposal offers a tax credit instead, worth exactly the tax that an individual would pay on income of €15,540 (the subsistence level for a couple), which comes out at €1,277. Again, this would not be withdrawn, thereby avoiding any increase in the marginal tax rate of secondary earners. This reform achieves a perfect match of marginal tax rates with

those of an individual (left panel of Figure 8). The static revenue impact of this reform is slightly positive.²⁷

31. Under the reform proposals, however, average tax rates would be higher for households with very low earning spouses compared to the current system, revealing the tradeoff between ensuring work incentives and treating households similarly independent of their income distributions. Average tax rates remain below what they would be if simple individual taxation were adopted (Figure 8, right panel); at higher earnings levels the average tax rates for the second spouse are somewhat lower under the proposed system than the current one.



The Labor Tax Wedge

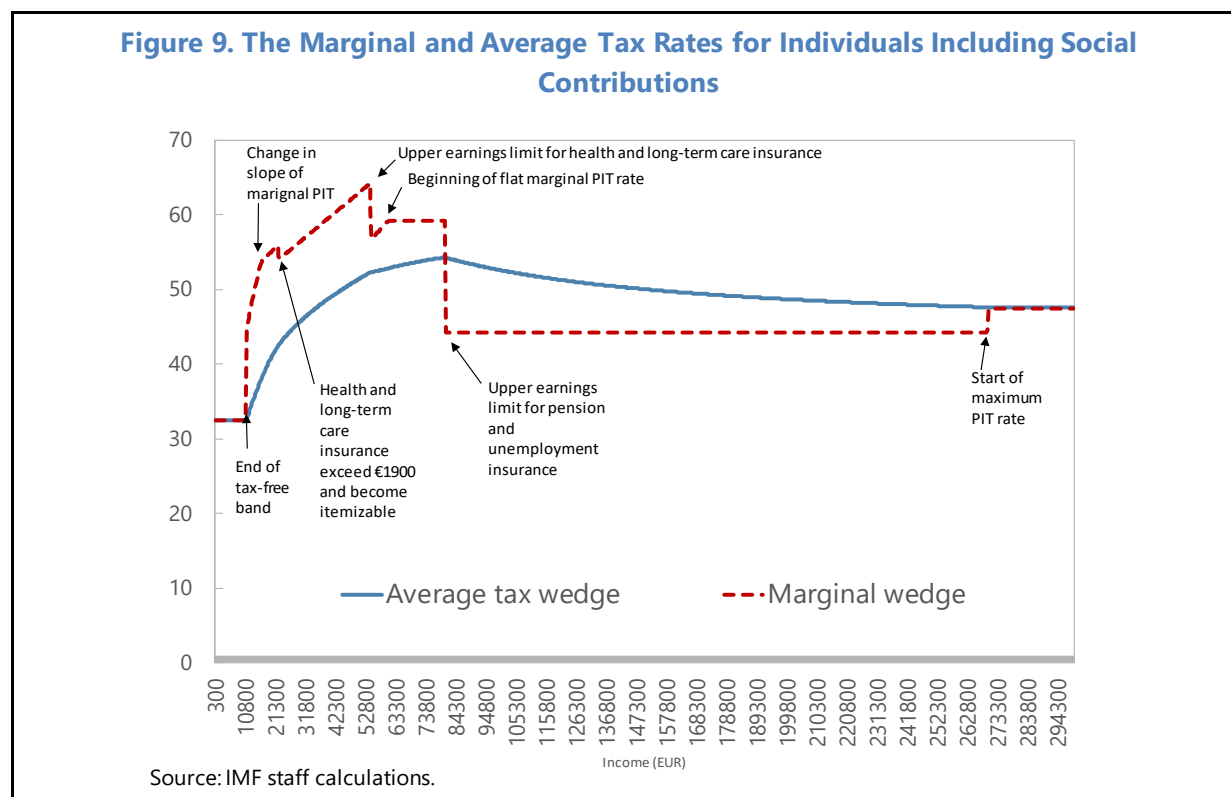
32. The PIT described above is augmented by a surtax. This so-called solidarity surcharge is 5.5 percent of the PIT liability. Its introduction was partly motivated by the need to cover the costs of German reunification, but its revenues are not formally earmarked. According to the current coalition agreement, it is meant to be abolished for lower and middle incomes from 2021. The surtax does not raise fundamental tax policy considerations, apart from creating a less transparent system than what a simple increase in tax rates could have achieved (the reason for the surtax structure is that it accrues to the federation, while PIT is split among the federation, the federal states, and the municipalities). It raises interesting political economy issues: whenever a temporary tax is introduced

²⁷ The current joint system costs €22.6 billion compared to individual taxation (BMF, 2018b). The cost of the tax credit would be up to €22.5 billion (calculated as €1277 per couple for 17.6 million couples (Statistisches Bundesamt), which is a slight over-estimate, as not all couples will have sufficient tax liabilities to use up the full credit).

in a progressive manner (such as the solidarity surcharge) then its simple abolition is necessarily regressive, creating potential pushback.

33. More importantly, the labor tax wedge is augmented by social security contributions totaling 38.75 percent. Contributions are payable for pension (18.6 percent), unemployment (2.5 percent), health (14.6 percent) and long-term care (3.05 percent) insurance, up to an upper earnings limit of €80,400 for pensions and unemployment, and €54,450 for health and long-term care. Half of the contributions are paid out of the wage and the other half is paid by the employer (which does not indicate the incidence). The employee's share of contributions is to some extent deductible from PIT.²⁸

34. The resulting total marginal tax wedge ends up with an odd shape peaking at around 64 percent for taxable incomes just below €54,450. Figure 9 shows the marginal and average wedge, with an annotation explaining each kink in the marginal rate schedule. As shown, the schedule is progressive over some range and regressive thereafter.²⁹ The regressive part is the result of the upper earnings limits for social insurance contributions. In interpreting this, the different

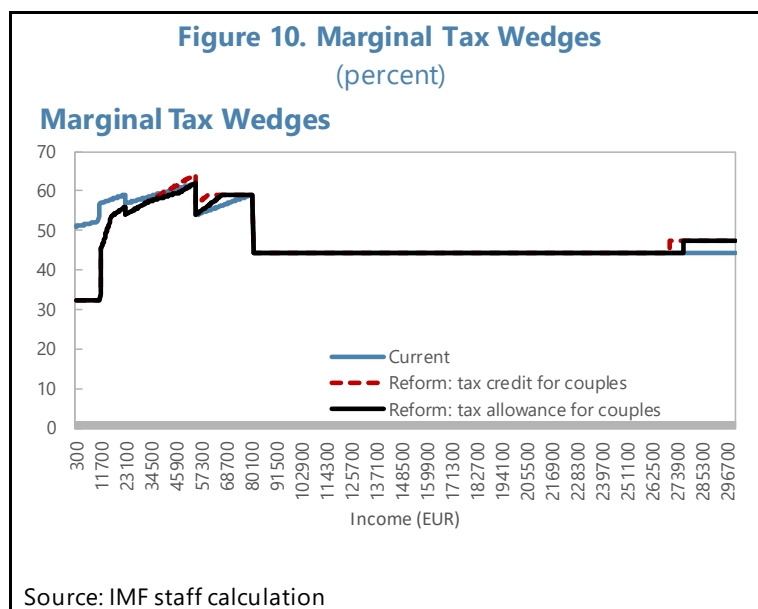


²⁸ They are deductible up to a limit of €1900. However, if long-term care and 96 percent of health contributions alone exceed this amount, they are deductible without limit.

²⁹ Indeed, over the range of 67 to 100 percent of per capita income, Germany's tax and social security system is more progressive than in the average OECD member, while Germany's system is among the less progressive systems as incomes rise from 100 to 167 percent of per capita income (Annex, Figure A2). Comparative data for further income increases are not available, but Germany's system would certainly turn regressive over ranges where the social security contribution is phased out.

nature of social security contributions should be considered, too. From a taxpayer perspective, the pension and unemployment insurance contributions lead to earnings-related entitlements, so they represent savings (for pensions) or insurance fees (for unemployment). The health and long-term care contributions also lead to entitlements, but those are not earnings related, so these contributions are in their nature much closer to taxes.

35. The PIT reforms considered above would reduce the total tax wedge for secondary earners, but the wedge would remain quite high as a result of social contributions, still exceeding 30 percent on the first euro (Figure 10). This could be further reduced by considering the health contributions. The free insurance of spouses implies that a spouse beginning to work leads to paying contributions without getting any additional health benefits. An additional charge for insuring otherwise uninsured spouses in single earner households would address this.



36. Addressing the very high marginal tax wedges for incomes around the median would require further cuts in the PIT or social security contribution rate. The suggested couples' allowance or credit would not address the peak tax wedge that applies around median incomes. This would have to be achieved by cuts to the tax or social security contribution rates. Options include flattening the PIT schedule by increasing the starting point for the 42-percent tax band or reducing one of the social contributions with a weak link to entitlements—health or long-term care. Of course, any resulting shortfall in the insurance funds should then be covered by budgetary transfers from general revenues. Another option would be to lower the health contribution rate, while raising or abolishing the upper limit in a revenue-neutral fashion.³⁰

37. The preferred approach to reducing the tax wedge should not only consider the impact on the shape of wedge but also the impact on aggregate demand. Notably, if the reduction is achieved by reducing social security contributions, it would be preferable to reduce the employees' share. While it is irrelevant in the long run whether the employers' or employees' contributions is cut, in the short term, with wage agreements fixed, a cut to the employees' contribution would add more rapidly to disposable income and support external adjustment.

³⁰ See also Bach, Haan, and Harnisch (2018) for suggestions on how to make social security contributions progressive.

Marginal Employment

38. The current approach to addressing the high marginal tax rates of secondary earners is through a special regime for marginal employment (“mini jobs”). This alternative regime can be elected for jobs paying up to €450 per month. More than one such job can be taken, provided total earnings remain below this limit. Under this scheme the PIT is covered through a final 2 percent charge, social security contributions are reduced from 38.75 to 31.7 percent, or to 28 percent if the employee opts out of the pension insurance. Unlike the usual split, the employer is liable for the full 28 percent, the employee only covers the optional 3.7 percent pension contribution. Apart from pension rights (if chosen), the payments of the reduced social security charges do not provide any entitlements (i.e., to health, long term care or unemployment benefits).

39. The marginal employment scheme is attractive in specific cases, but has major drawbacks. For low-income individuals, the scheme implies higher taxation than the standard system, under which such incomes would remain below the annual tax-free allowance. In terms of social security contributions, the total rate is slightly lower, but comes with the disadvantage of not earning entitlements (other than optionally for the pension system). As a result of these two disadvantages, the scheme is attractive mainly for people taking up a minor additional job or married to an employed spouse, as in those cases the reduced tax rate is of advantage and social insurance benefits are already accessible. The scheme therefore has the following disadvantages:

- It encourages labor supply of secondary earners, but only for minimal activities. The suggested allowance or credit for couples would achieve a greater tax reduction for larger incomes of secondary earners.
- It provides beneficial tax treatment without regard to the overall economic situation of an individual, as applicability is unrelated to earnings in any regular employment.
- It creates threshold effects, preventing employers from raising hours or pay incrementally. Indeed, marginal tax rates can exceed 100 percent when exceeding the threshold, because at that point all earnings will turn taxable if the personal allowance is already used by another job or the spouse’s income.
- The severe restrictions to entitlements related to social security charges may create vulnerabilities. E.g., if used for secondary employment of spouses, they will not earn independent entitlements to unemployment.

40. There is an additional scheme for medium-level jobs, which has promising features. The “midi job” scheme applies for earnings between €450 and €1300 (€850 until July 1, 2019). Unlike the mini job scheme, all of the standard taxes apply, and the employer pays the standard rates. However, social security contributions are phased in for the employee, while leading to the usual entitlements.

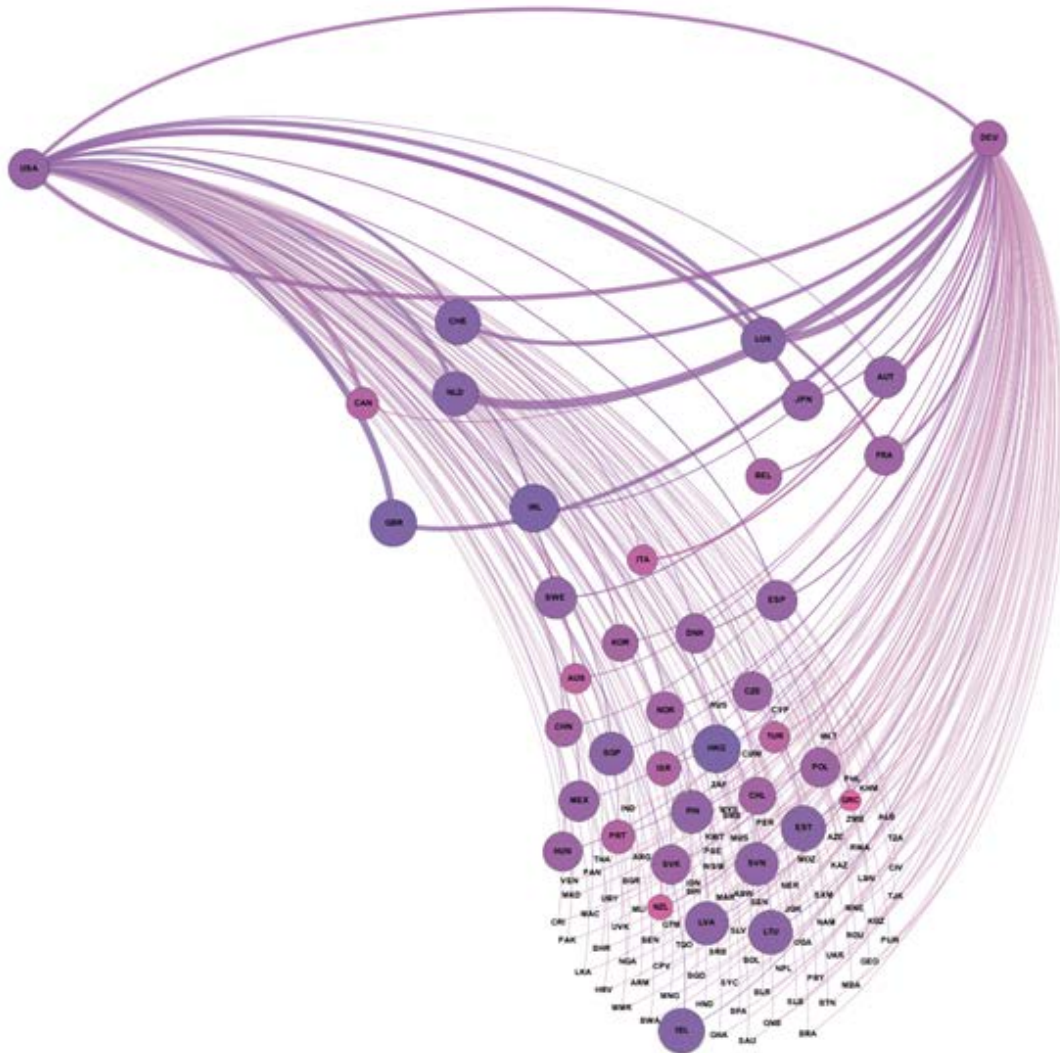
Appendix I. Additional Table and Figures

Table A1. The Distribution of LBT Rates, 2018

Federal State	# Municipalities	Average	Min	Max
Baden-Württemberg	1,101	12.3	9.3	15.8
Bayern (Bavaria)	2,056	11.8	8.1	17.2
Berlin	1	14.4	14.4	14.4
Brandenburg	419	11.3	7.0	15.9
Bremen	2	16.1	16.1	16.1
Hamburg	1	16.5	16.5	16.5
Hessen (Hesse)	426	13.3	10.0	16.8
Mecklenburg-Vorpommern	780	11.9	7.0	16.3
Niedersachsen (Lower Saxony)	1,002	13.0	10.5	17.5
Nordrhein-Westfalen (North Rhine-Westphalia)	396	15.7	9.1	19.3
Rheinland-Pfalz (Rhineland-Palatinate)	2,306	13.0	11.2	31.5
Saarland	52	14.7	12.6	17.2
Sachsen (Saxony)	438	13.8	10.5	17.2
Sachsen-Anhalt (Saxony-Anhalt)	221	12.2	8.3	17.7
Schleswig-Holstein	1,110	12.0	8.8	15.8
Thüringen (Thuringia)	849	13.2	8.4	16.5

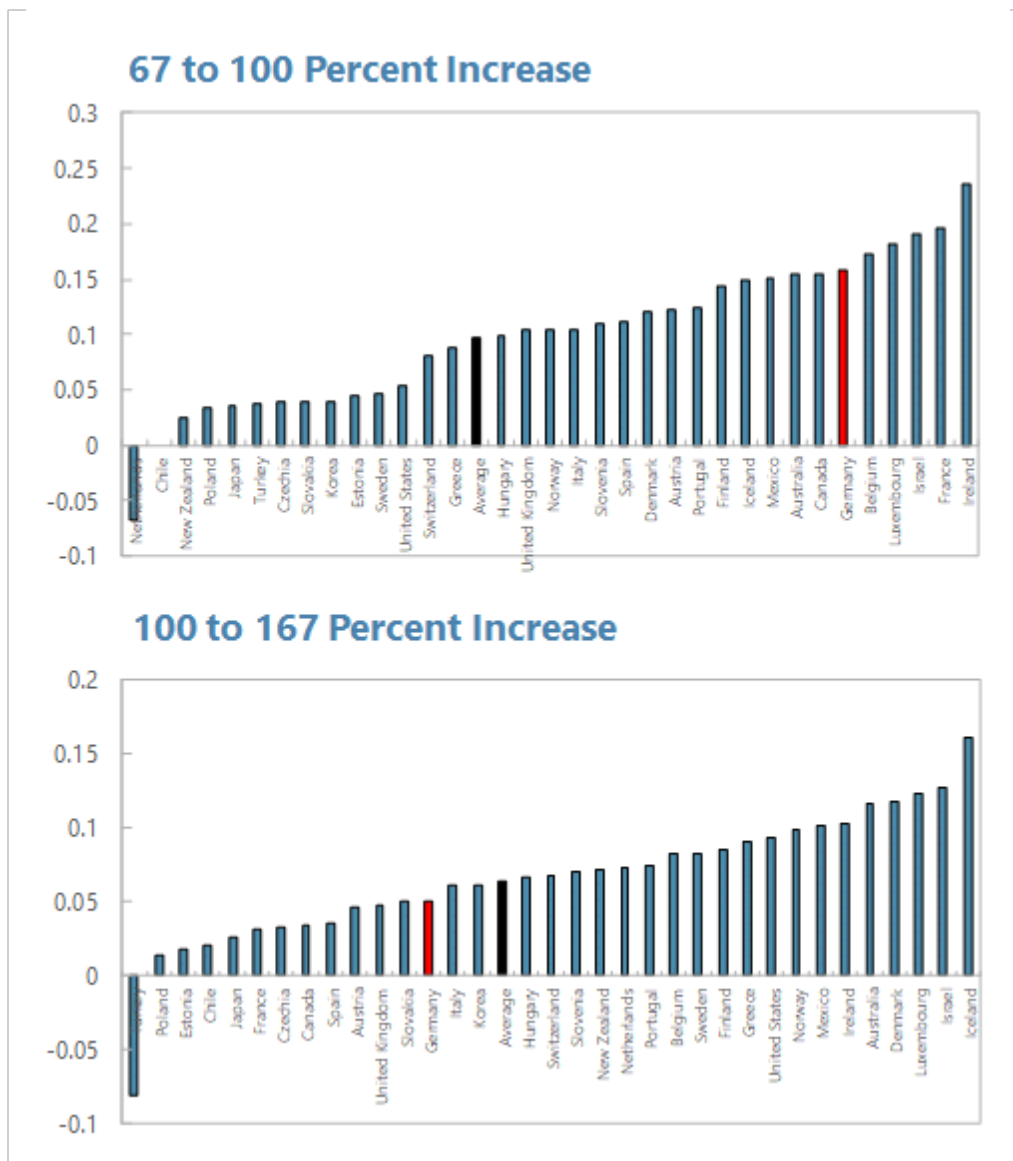
Source: Statistisches Bundesamt, IMF staff calculation.

Figure A1. German and US FDI and the Tax Treaty Network



Notes: The size of the nodes represents the average withholding tax rate on dividends in the tax treaties of the corresponding country (lower rate corresponds to larger nodes). The size of the links between the nodes corresponds to the share of inward FDI from a country in total inward FDI of the node country.
Source: IMF staff illustration using IBFD data and IMF Coordinated Direct Investment Survey

Figure A2. Tax Wedge Progressivity in OECD Countries, 2018



Note: The figure shows the average increase in the average tax rate as income rises by one percent of average per capita income over the given range. E.g., in the top panel, this is calculated as the difference of the tax wedge at 100 and 67 percent of per capita income, divided by 33.
 Source: IMF Staff Calculation using OECD Taxing Wages.

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