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The Effects of U.S. Tax Reform: Comparing Taxes and Social Contributions in the U.S. and Germany

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In this article, the authors examine statutory and paid tax rates in the U.S. and Germany for employment income (including social contributions), corporate income, other business income, and private capital income, using data from 2000 to the present, as well as making forecasts for 2020 in Germany and the U.S. under both the old U.S. system and the new U.S. tax regime.

The Tax Cuts and Jobs Act (TCJA) (P.L. 115-97) contains numerous measures designed to broaden the tax base while reducing tax rates, including a significant reduction in the corporate income tax rate. The reforms as a whole, and the reduction in corporate tax rates in particular, are quite controversial. For example, although supporters of the reforms argued that U.S. corporate tax rates are among the highest in the developed world, critics pointed out that few corporations seem to actually pay tax at the statutory rates. For example, Sen. Elizabeth Warren, D-Mass., said in 2015: "It's not that taxes are far too high for giant corporations, as the lobbyists claim. No, the problem is that the revenue generated from corporate taxes is far too low."[1]

In this article, we shed light on the U.S. tax reform debate by providing statutory and paid tax and social contributions rates on U.S. employees, corporations, noncorporate businesses, and private capital gains. We compare the results with Germany, a country that has attracted a great deal of attention from the administration. Our data span the period from 2000 to the present and also include forecasts to 2020. For the U.S., we present forecasts under both the old tax regime and changes under the new U.S. tax system.

I. Statutory Taxes and Social Contributions

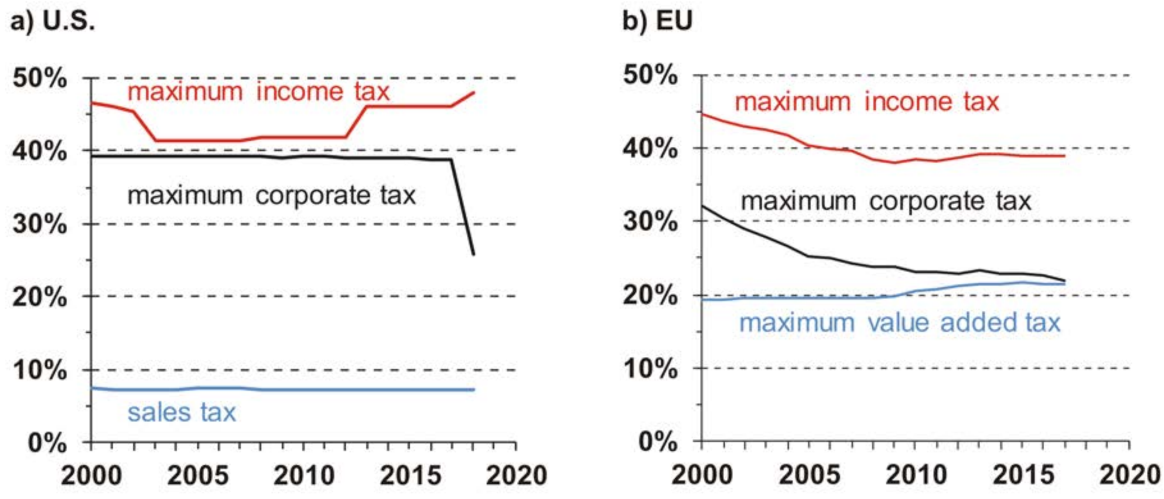
Providing an initial overview, Figure 1 plots, for the U.S. and the EU, the highest tax rates[2] on individual income, corporate profits, and consumption (sales tax in the U.S. and VAT in the EU). The table shows that:

- Tax rates in the U.S. have remained roughly constant from 2000 until 2017 (putting aside the personal income tax cuts during President Bush's tenure). In the EU, the top marginal tax rates on both corporate and personal income were trending steadily downward at least until 2010.
- The statutory corporate income tax rate (corporate tax) in the U.S. for 2017 was almost twice the EU average. It will remain slightly higher than in the EU in 2018 even after tax reform.
- The U.S. statutory sales tax rate is less than half the average of the maximum VAT rates in EU states.

[1] Colin Wilhelm, "Warren Wants to Hike Taxes on Big Business to Raise Revenue," Politico (Nov. 18, 2015).

[2] Rates include taxes at all levels of government. For the maximum state income tax rate in the U.S., an average of 11 percent has been used. For the maximum state corporate tax rate, an average of 6 percent has been used. The average U.S. sales tax rate has remained constant at 7.2 percent since 2009 and therefore is also used for 2017 and 2018. For the EU, unweighted averages across EU member countries are shown.

Figure 1. Maximum Statutory Tax Rates in the U.S. (2000-2018) and EU (2000-2017)



- In Germany specifically (not shown in Figure 1), the statutory corporate tax rate (including trade tax) has decreased from 50 percent in 2000 to 30 percent since 2008, while the regular VAT rate has increased from 16 percent in 2000 to 19 percent since 2007.

The average EU corporate tax rate shown in Figure 1b will decrease further soon. Many EU member states have decided to decrease their corporate rates. For example, France's corporate tax rate will drop from 33.3 percent in 2016 to 28 percent in 2020, the U.K.'s will go from 20 percent in 2016 to 17 percent in 2020, and Italy's will decrease from 31.4 percent in 2016 to 27.9 percent in 2017[3] — it is a race to the bottom.[4] To compensate for the lost revenue, VAT tax bases will be enlarged.

A. Comparing Tax Rates in the U.S. and Germany

For clarity and ease of comparison, all taxable incomes in the following tables are given per month using annual values divided by 12.

Tax rates are calculated in different ways in the U.S. and Germany, as the following examples for federal tax rates on individuals demonstrate (line (1a)):

- The U.S. uses a system of tax brackets. The first $0 to $794 of taxable monthly income is taxed at 10 percent, the next $795 to $3,225 is taxed at 12 percent, and so forth.
- Germany's personal income tax act (Einkommensteuergesetz, or EStG), however, uses a mixed system. The first €0 to €750 of taxable monthly income is taxed at 0 percent. For the next €750 to €4,579, a marginal tax rate applies, continuously increasing from 14.0 percent to 44.3 percent. Each euro between €4,579 and €21,711 is taxed at 44.3 percent. Each euro of monthly income above €21,711 is taxed at 47.5 percent.
- In the U.S., tax rates are adjusted for inflation every year. Germany has inflation adjustment rules only for low incomes, but for 2015 to 2018 all income brackets have been adjusted for inflation by the German government.

Table 1 shows statutory tax rates for a single taxpayer in the U.S. and Germany in 2018. It includes both the rates that would have prevailed without the U.S. tax reform and the new U.S. tax rates after tax reform under the TCJA.

[3] European Commission, "Taxation Trends in the European Union" (2017).

[4] *See* Gustav M. Obermair and Lorenz Jarass, "What an Individual EU Country Can Do Unilaterally to Counteract BEPS," *Tax Notes Int'l*, Aug. 24, 2015, p. 697.

1. State and Local Taxes

In addition to federal taxes, the U.S. has state and local income and corporate taxes, as well as local sales taxes.

In Germany, there are no state taxes on personal income and no state or local sales taxes. But there is a local trade tax (Gewerbesteuer) on corporate and noncorporate business income that taxes profits plus one-quarter of paid interest and one-sixteenth of paid license fees. The trade tax rate is set by the respective municipality, with a legal minimum rate of 7 percent and an average rate of 14 percent. There is no legal maximum trade tax rate. However, the highest rate actually charged in Germany is 19.25 percent in the city of Oberhausen.

Exemplifying the huge variation in German trade tax rates, Deutsche Bank pays a trade tax of 16.1 percent for its headquarters in Frankfurt, while the rate for its permanent establishments in nearby Eschborn (11 kilometers away) is only 11.6 percent. Trade tax was the main reason that Deutsche Börse (the German stock exchange) moved much of its operations from Frankfurt to Eschborn in 2010. Another example: Berlin has a trade tax rate of 14.4 percent, while nearby Zossen, just 13 kilometers from the southern boundary of Berlin, has a trade tax rate of only 7 percent.

2. Personal Income Taxes

Both the U.S. and Germany have progressive income taxation. A lower rate applies to the first income bracket, and higher brackets are taxed at higher rates.

In contrast to Germany, the U.S. taxes the first dollar of taxable income. However, the U.S. also has higher standard deductions than Germany.

Because of the U.S.'s higher standard deductions (and personal exemptions), the amount of taxable income is lower in the U.S. than in Germany, especially for low incomes.

Tax rates for monthly taxable incomes above $795 are much lower in the U.S.[5] than in Germany.

3. Tax on Private Long-Term Capital Gains

In Germany, €67 of monthly private, long-term capital gains remains tax free. In the U.S., $3,217 of monthly private, long-term capital gains remains tax free at the federal level.

For gains above $3,217 up to $35,483 per month, U.S. federal income tax is 15 percent. Residual long-term capital gains income above $35,483 per month is taxed at 23.8 percent. Also, while state laws differ, state income taxes of up to 13 percent may apply.

In contrast, Germany taxes monthly gains above €67 at a flat rate of 26.4 percent.

4. Corporate Tax

Both countries impose a flat rate corporate tax.[6] The maximum combined federal and state/local corporate tax rate in the U.S. used to be much higher than Germany's. But under the TCJA, it is now slightly lower.

In Germany, all corporations are obliged to pay corporate tax under the German Corporate Tax Act (Körperschaftsteuergesetz, or KStG). However, the U.S. gives many corporations a check-the-box option to pay taxes as if they were a noncorporate entity.[7]

As noted above, on top of Germany's corporate tax of 15.8 percent, trade tax is also charged. Some municipalities charge only the legal minimum trade tax of 7 percent, yielding a total tax rate of only 23 percent when combined with the corporate tax. This variation creates tax havens inside Germany for mobile income like interest and license fees.

Notably, in both the U.S. and Germany, if corporations pay dividends, their domestic shareholders must pay taxes on capital gains as shown in Table 1, line (2c), and in Table 4.

5. Deductibility of State and Local Taxes

In the U.S., the TCJA limits state and local income tax deductions for federal income to a combined total of $833 per month for income,

[5]Notably, the TCJA has increased tax rates for the tax bracket $16,667 to $35,413 from 33 percent to 35 percent.

[6]Before U.S. tax reform, the U.S. taxed small corporations with a taxable marginal rate of 35 percent.

[7]IRS, "Classification of Taxpayers for U.S. Tax Purposes" (Aug. 17, 2017).

Table 1. Statutory Tax Rates on Taxable Income, Single Taxpayer, U.S. and Germany, 2018

		U.S. (Old)	Taxable Income Per Month	**U.S. (New)**	Taxable Income Per Month	**Germany**	Taxable Income Per Month
Statutory Tax Rates in 2018		**[%]**	**[$]**	**[%]**	**[$]**	**[%]**	**[€]**
(1a)	Federal income tax	10.0	0 to 794	10.0	0 to 794	0.0	> 0
		15.0	794 to 3,225	12.0	794 to 3,225	Marginal tax rate	
		25.0	3,225 to 7,808	22.0	3,225 to 6,875	14.0	at 750
		28.0	7,808 to 16,288	24.0	6,875 to 13,125	Increases continously to	
		33.0	16,288 to 35,413	32.0	13,125 to 16,667	44.3	at 4,579
		35.0	35,413 to 35,558	35.0	16,667 to 41,667	44.3	> 4,579
	Maximum	39.6	> 35,558	37.0	> 41,667	47.5	> 21,711
(1b)	U.S. state income tax, German trade tax	0 to 13	Progressive taxation in most states	0 to 13	Progressive taxation in most states	7 to 19	> 2,042 only on business income
(1c)	**Maximum income tax**	**40 to 47**	See Note A	**37 to 50**	See Note B	**48 to 53**	See Note C
(2a)	Federal income tax on private capital gains	0.0	0 to 3,225	0.0	0 to 3,217	0.0	< 67
		15.0	3,225 to 16,667	15.0	3,217 to 16,667		
		18.8	16,667 to 35,558	18.8	16,667 to 35,483		
	Maximum	23.8	> 35,558	23.8	> 35,483	26.4	> 67
(2b)	State income tax on private capital gains	0 to 13	Progressive taxation in most states	0 to 13	Progressive taxation in most states	0.0	
(2c)	**Maximum income tax on private capital gains**	**24 to 34**	See Note A	**24 to 37**	See Note B	**26.0**	
(3a)	Federal corporate tax	15.0	0 to 4,167	21.0	> 0	15.8	> 0
		25.0	4,167 to 6,250				
		up to 39	6,250 to 1.53 million				
	Maximum	35.0	On total amount if > 1.53 million	21.0	> 0	15.8	> 0
(3b)	U.S. state corporate tax, German trade tax	0 to 12	> 0	0 to 12	> 0	7 to 19	> 0
(3c)	**Maximum corporate tax**	**35 to 43**	See Note D	**21 to 30**	See Note D	**23 to 35**	See Note E

Notes:

A) State income tax is deductible for federal income tax.

B) State income tax is only partly deductible for federal income tax. Monthly deductible is $833 (annually $10,000) with income, property, and sales taxes combined.

C) Trade tax can be partly offset with federal income tax.

D) State corporate tax is deductible for federal corporate tax.

E) State corporate tax cannot be offset with federal corporate tax.

- U.S., lines (1b), (2b), and (3b): City and county personal income taxes are not included. They are usually almost negligible (although not, e.g., in New York City!).

- U.S., lines (2a), (2b), and (2c): The rates for private capital gains are those for long-term capital gains.

- Germany, lines (1b) and (3b): The legal minimum trade tax rate is 7%. There is no legal maximum trade tax rate; maximum trade tax rate charged at 19.25% in the city of Oberhausen. A maximum of 14 percentage points can be offset with federal income tax, 5.25 percentage points remain as net tax load in the city of Oberhausen.

Table 2. Statutory Social Contribution Rates Mandatory by Law on Gross Wages, U.S. and Germany, 2018

		U.S. (Old, new) [%]	Gross Wage Per Month [$]	**Germany [%]**	Gross Wage Per Month [€]
(1)	**Social contributions of employer mandatory by law**	**13.7**		**19.4**	
(1a)	Health	1.5	No limit	8.6	< 4,425
(1b)	Unemployment	6.0	< 583	1.5	< 6,500
(1c)	Pension	6.2	< 10,700	9.3	< 6,500
(2)	**Social contributions of employee mandatory by law**	**7.7**		**20.7**	
(2a)	Health	1.5	No limit, + 0.9% > 16,667	9.9	< 4,425
(2b)	Unemployment	0.0		1.5	< 6,500
(2c)	Pension	6.2	< 10,700	9.3	< 6,500
(3)	**Total social contributions mandatory by law**	**21.3**		**40.1**	

property, and sales taxes. This was a compromise position that resulted from opposition to the initial proposal to eliminate the deductions entirely. Surprisingly, however, state corporate tax still is deductible from federal corporate tax. Thus, the total corporate tax burden in the U.S. is typically less than the sum of federal and state/local taxes.

In Germany, only noncorporate businesses can offset up to 14 percentage points of paid trade tax rate from their federal income tax rate. However, corporations cannot offset trade tax from their federal income tax due.

In Germany, but not in the U.S., most social contributions that are mandatory by law are tax deductible.

B. Comparing Statutory Social Contribution Rates

Both the U.S. and Germany levy social contributions:

- only on wages (self-employment income is included in the U.S., but not in Germany);
- at a flat rate;
- without lump sum or itemized deductions; and
- only up to a specified wage limit[8] (with the exception of U.S. Medicare tax, which has no wage limit).

Notably, these rules are different from the rules for calculating income tax in Table 1.

Table 2 shows statutory social contribution rates[9] mandatory by law for the U.S. and Germany in 2018. The U.S. also has mandatory state unemployment social contributions (not included in Table 2).

The U.S. taxes wages at much lower rates for health insurance,[10] but — in contrast to Germany — it has no wage limit. Additional health plans are supplied by employers and financed by the respective social contributions that are not mandatory by law (see Figure 2a for paid rates).

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[8]Using OECD purchasing power parity data (conversion rates that take into account purchasing power) equating €0.78 in Germany to $1 in the U.S., the German limit of €6,500 (monthly wages taxed for pension contributions) in line (1c) is comparable to $8,330 (€6,500/0.78). Thus, the German limit is lower than the U.S. limit of $10,700.

[9]Paid social contributions are shown in Figure 2.

[10]In the U.S., Medicare (health insurance for senior citizens) is the only health insurance program funded by a separate flat-rate tax. Other public healthcare programs (like Medicaid and Affordable Care Act subsidies) are funded by general income and consumption taxes, both federal and state.

Table 3. Statutory Tax Rates and Social Contribution Rates on Compensation of Employees Mandatory by Law, Single Taxpayer, U.S. and Germany, 2018

		(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3a)	(3b)	(3c)
		U.S. (Old)	**U.S. (New)**	**Germany**	**U.S. (Old)**	**U.S. (New)**	**Germany**	**U.S. (Old)**	**U.S. (New)**	**Germany**
Compensation* per month		**$3,000**	**$3,000**	**€3,000**	**$10,000**	**$10,000**	**€10,000**	**$1 million**	**$1 million**	**€1 million**
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
(1)	Social contribution of employer mandatory by law	8	8	16	7	7	11	1.5	1.5	0
(2)	Social contribution of employee mandatory by law	7	7	17	7	7	11	2.4	2.4	0
(3)	Wage tax federal and state	8 / 10	6 / 8	11	18 / 24	15 / 21	29	39 / 46	36 / 49	47
(4)	**Taxes and social contributions mandatory by law**	**23 / 25**	**22 / 24**	**45**	**32 / 38**	**30 / 36**	**51**	**43 / 50**	**40 / 53**	**48**

* Compensation = gross wage + social contributions of employer mandatory by law.
Notes:
- Social contributions of employers and of employees that are non-mandatory by law are not accounted for in Table 3.
- For U.S. lines (3) and (4), the first value applies the state tax for Florida and the second value applies the state tax for California.

The U.S.'s unemployment insurance tax rate is higher, but only the first $583 of monthly gross wage are taxed, which is less than a tenth of the German limit. Also, in the U.S., this tax is levied only on employers.

The U.S. levies lower rates for pensions, but up to a higher limit. Additional pension or retirement plans are supplied by employers, and their respective social contributions are non-mandatory by law (see Figure 2a).

The total tax rate for social contributions mandatory by law in the U.S. is 21.3 percent[11] of gross wages, around half the German total rate of 40.1 percent. However, the U.S. rate applies up to a limit that is around twice the German limit.

Germany has a special regime for very low wages (the €450 job, also known as a mini-job). For monthly gross wages below €450, employers pay 28 percent of gross wages in social contributions instead of 19 percent, and employees pay 0 percent instead of 21 percent. Total social contributions are then 28 percent instead of 40 percent. The income is taxed at a flat rate of only 2 percent.

II. Statutory Rates Applied

In this section, we apply the statutory rates and mandatory social contributions and show results for a single taxpayer with monthly incomes of $3,000, $10,000, and $1 million for the U.S. and of €3,000, €10,000, and €1 million for Germany.[12]

A. Compensation of Employees

Table 3 gives examples of statutory tax rates and mandatory social contribution rates on the compensation of employees.[13] For these purposes, total compensation is the gross wage plus the

[11] All numbers are shown as integer values; therefore, totals may differ slightly from the sum of the integer values.

[12] For reference, the average monthly compensation (that is, gross wage plus employer´s mandatory social contributions) for a full-time employee in Germany was around €3,400 in 2016. In the U.S., the average was around $4,400. Using OECD purchasing power parity for Germany of €0.78 for $1, the average compensation rates are very similar.

[13] Numbers in tables 3, 4, and 5 are for an unmarried person without children and with no other income. For the U.S. calculations, we assume that the taxpayer elects the standard deduction.

Table 4. Statutory Tax Rates on Private Capital Gains, Single Taxpayer, U.S. and Germany, 2018

		(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3a)	(3b)	(3c)
		U.S. (Old)	**U.S. (New)**	**Germany**	**U.S. (Old)**	**U.S. (New)**	**Germany**	**U.S. (Old)**	**U.S. (New)**	**Germany**
Gross private capital gains per month		**$3,000**	**$3,000**	**€3,000**	**$10,000**	**$10,000**	**€10,000**	**$1 million**	**$1 million**	**€1 million**
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
(1)	Federal income tax	0	0	21	9	9	26	24 / 20	24	26
(2)	State income tax	0 / 2	0 / 2	0	0 / 7	0 / 7	0	0 / 13	0 / 13	0
(3)	**Total income tax**	**0 / 2**	**0 / 2**	**21**	**9 / 16**	**9 / 16**	**26**	**24 / 34**	**24 / 37**	**26**

Note: For U.S. lines (2) and (3), the first value applies the state tax for Florida and the second value applies the state tax for California.

employer's mandatory social contributions. Social contributions by employers that are non-mandatory by law vary significantly from employee to employee and therefore are not included in Table 3.[14]

For total monthly compensations of $3,000 and €3,000, wage taxes are higher in Germany (11 percent, compared with around 7 percent in the U.S.). Germany also imposes much higher social contributions by law (33 percent, compared with 15 percent in the U.S.).

For total monthly compensations of $10,000 and €10,000, the U.S. wage taxes are much lower, especially in states without state income tax such as Florida. But while the U.S. still imposes nearly the same rate of social contributions by law on this higher-earning worker (14 percent), Germany's rate is only 22 percent instead of 33 percent because of much lower income limits (see Table 2).

For total monthly compensations of $1 million and €1 million, social contributions by law are below 0.1 percent in Germany, compared with 3.9 percent in the U.S. because there is no limit on the health contributions of employers in the U.S. and the U.S. imposes extra health contributions on employees with monthly wages above $16,667. Both wage tax rates and the total of taxes and social contributions are highest in California, slightly lower in Germany, and much lower in Florida.

In Germany, the statutory net wage (that is, total compensation minus the statutory rates for taxes and mandatory social contributions) is approximately half of total compensation and varies little with the amount of compensation. In the U.S., however, the statutory net wage is around three-quarters of compensation for lower incomes and decreases to around one-half for very high compensation levels.

B. Private Capital Gains

Table 4 gives examples for tax rates on private capital gains (for example, from dividends and interest)[15] for an unmarried taxpayer.

For a resident of Florida, a state without income tax, private capital gains of $3,000 per month go untaxed. A resident of California with the same amount of private capital gains pays only 2 percent in taxes. For comparison (see Table 3), a U.S. employee with $3,000 in income has to pay 22 percent in wage tax and mandatory social contributions in Florida and 24 percent in California.

Germany taxes private capital gains of €3,000 per month at 21 percent.

Monthly private capital gains of $10,000 — more than double the average U.S. employee's compensation of around $4,400 — are taxed at 9 percent in Florida and 16 percent in California. For comparison (see Table 3), a U.S. employee with the same income has to pay 30 percent in

[14] Figure 2, *infra*, shows the average paid tax and social contribution rates on the compensation of all employees and includes social contributions not mandatory by law.

[15] U.S. federal tax rates assume long-term capital gains.

Table 5. Statutory Tax Rates on Noncorporate Business Income, Single Taxpayer, U.S. and Germany, 2018

		(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3a)	(3b)	(3c)
		U.S. (Old)	**U.S. (New)**	**Germany**	**U.S. (Old)**	**U.S. (New)**	**Germany**	**U.S. (Old)**	**U.S. (New)**	**Germany**
Noncorporate business income per month		**$3,000**	**$3,000**	**€3,000**	**$10,000**	**$10,000**	**€10,000**	**$1 million**	**$1 million**	**€1 million**
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
(1)	Federal income tax	11	5	20 / 18	21 / 20	12	31 / 26	39 / 34	33	40 / 33
(2)	State income tax (U.S.) Local trade tax (Germany)	0 / 2	0 / 2	2 / 6	0 / 7	0 / 7	6 / 15	0 / 13	0 / 13	7 / 19
(3)	**Total income tax**	**11 / 13**	**5 / 7**	**22 / 24**	**21 / 27**	**12 / 19**	**37 / 41**	**39 / 47**	**33 / 46**	**47 / 52**

Notes:
- For U.S. lines (2) and (3), the first value applies the state tax for Florida and the second value applies the state tax for California.
- For Germany, the first value applies the minimum local trade tax and the second value applies the highest local trade tax.

wage tax and mandatory social contributions in Florida and 36 percent in California.

Germany taxes private capital gains of €10,000 monthly at 26 percent.

Monthly private capital gains of $1 million per month are taxed at 24 percent in Florida and 37 percent in California. Germany taxes private capital gains of €1 million monthly at 26 percent.

Generally, Germany taxes private capital gains at 21 percent and 26 percent for low and high incomes, respectively. This is only around half the overall rates paid by employees with the same amount in personal income (see Table 3).

Under the TCJA, state taxes can no longer be deducted for high capital gains. This increases the total tax rates. In the case of high-tax California, the rate increases from 34 percent to 37 percent.

C. Noncorporate Business Income

Table 5 gives examples for statutory tax rates on noncorporate business income for a single taxpayer.

Under the TCJA, 20 percent of passthrough noncorporate business income will be tax deductible for most professions, up to a $157,500 limit (for single filers), beyond which the exemption gets phased out.

For higher incomes, 50 percent of wages paid (or 25 percent of wages and 2.5 percent of qualified property) will be tax deductible.

So for the example of the $1 million per month earner in Table 5, we assume that he pays out $200,000 per month in wages, decreasing his monthly taxable income to $1 million - 0.5*$200,000 = $900,000.

A monthly noncorporate business income of $3,000 is taxed in the U.S. at only one-quarter the German rate for €3,000.

A monthly noncorporate business income of $10,000 is taxed in the U.S. at (depending on state rates) less than half the German rate of €10,000.

A monthly noncorporate business income of $1 million is taxed in the U.S. at (depending on state rates) around three-quarters the German rate.

D. Corporate Business Income

Table 6 gives examples of statutory tax rates for corporate business income.

In Germany, tax rates are independent of corporate income. Still, there is a big range of statutory rates, from 23 percent in cities with the minimum trade tax to 35 percent in cities with the highest trade tax.

Following the tax reform efforts and effective beginning this year, federal corporate tax rates in

Table 6. Statutory Tax Rates on Corporate Business Income, U.S. and Germany, 2018

		(1a)	(1b)	(1c)	(2a)	(2b)	(2c)	(3a)	(3b)	(3c)
		U.S. (Old)	**U.S. (New)**	**Germany**	**U.S. (Old)**	**U.S. (New)**	**Germany**	**U.S. (Old)**	**U.S. (New)**	**Germany**
Corporate business income per month		**$3,000**	**$3,000**	**€3,000**	**$10,000**	**$10,000**	**€10,000**	**$1 million**	**$1 million**	**€1 million**
		[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]	[%]
(1)	Federal corporate tax	14	20 / 19	16	23 / 22	20 / 19	16	32 / 31	20 / 19	16
(2)	State corporate tax (U.S.) Local trade tax (Germany)	6 / 9	6 / 9	7 / 19	6 / 9	6 / 9	7 / 19	6 / 9	6 / 9	7 / 19
(3)	**Total corporate tax**	**21 / 24**	**26 / 28**	**23 / 35**	**28 / 30**	**26 / 28**	**23 / 35**	**38 / 40**	**26 / 28**	**23 / 35**

Notes:

- For U.S. lines (2) and (3), the first value applies the state tax for Florida and the second value applies the state tax for California.
- For Germany lines (2) and (3), the first value applies the minimum local trade tax and the second value applies the highest local trade tax.

the U.S. are likewise independent of corporate income levels. A corporation with a monthly income of $3,000 is now taxed at a higher rate because the lower corporate tax rate for smaller companies has been abolished.

Nonetheless, state corporate tax rates may still vary based on income. For example, Alaska charges 2 percent up to $2,083 taxable income, rising to 9.4 percent for income above $18,500. This is an example for corporate tax rates that are not flat as they are in most states. More generally, some states and even some cities have corporate income tax rates that are significantly higher than other U.S. jurisdictions. Iowa has the highest statutory tax rate at 12 percent, although Iowa does allow the deduction of federal taxes paid. New York City's statutory tax rates reach as high as 9 percent for financial corporations. In contrast, several states levy no corporate tax at all.

The state corporate taxes of Florida (with flat 5.5 percent) and California (with flat 8.84 percent) are not very different. Therefore, when state taxes are included, total corporate tax rates vary slightly from 26 percent in Florida to 28 percent in California (neither state differentiates corporate business income tax rates based on level of income).

III. Paid Taxes and Social Contributions

In this section, we estimate paid tax and social contribution rates on labor, capital, and consumption using national tax revenue and national account statistics for the U.S.[16] and Germany[17] for 2000 to 2016, including projections to 2020.

Table 7 compares the structure of paid taxes and social contributions.

The composition of the total tax revenue and social contributions actually paid is quite different in the two countries:

- The share of total taxes and social contributions attributable to paid income and property taxes is 39 percent in the U.S., compared with only 29 percent in Germany.
- In Germany, the share of total paid taxes and social contributions attributable to taxes on consumption is double the share in the United States.
- The share of total paid taxes and social contributions attributable to social

[16] Tax data for the U.S. in this section is taken from OECD, "Revenue Statistics 2017" (2017). We used IRS tax return data to estimate the amount of personal income tax revenue stemming from taxes on wages and salaries alone.

Income data is taken from U.S. Department of Commerce's Bureau of Economic Analysis, National Data (2017). Noncorporate business income is the sum of "proprietors' income," "rental income of persons," and "personal income receipts on assets" (terminology is as defined by the Bureau of Economic Analysis).

Forecasts use the Joint Committee on Taxation,"Estimated Budget Effects of the Conference Agreement for H.R. 1, The Tax Cuts and Jobs Act," JCX-67-17 (Dec. 22, 2017).

[17] Calculations are based on Jarass and Obermair, *Angemessene Unternehmensbesteuerung* ("Fair Business Taxation") (2017).

Table 7. Structure of Paid Tax Revenues and Social Contributions, U.S. and Germany, 2016

		U.S.	Germany
		[%]	[%]
(1)	**Taxes on income**	**39**	**29**
(1.1)	Wage tax	22	18
(1.2)	Federal income tax (non-wage)	6	6
(1.3)	Federal corporate tax	6	2
(1.4)	State and city income and corporate taxes	5	4
(2)	**Taxes on property**	**8**	**3**
(2.1)	Taxes on real estate and its transfer	8	2
(2.2)	Inheritance tax	0	1
(3)	**Taxes on consumption**	**13**	**26**
(3.1)	Sales tax	6	18
(3.2)	Taxes on energy (fuel, electricity, and so forth)	1	4
(3.3)	Other indirect taxes	6	4
(4)	**Social contributions**	**39**	**42**
(4.1)	Of employers mandatory by law	9	17
(4.2)	Of employees mandatory by law	8	16
(4.3)	Of employers non-mandatory by law	21	7
(4.4)	Of employees non-mandatory by law	No data available	2
(5)	**Total taxes and social contributions**	**100**	100

contributions mandatory by law (lines 4.1 and 4.2) is 33 percent in Germany, roughly double the 17 percent share in the United States. This corresponds exactly to the comparison in the share of statutory social contributions shown in Table 2, which are also around double in Germany (40 percent versus 21 percent).

- The share of total paid taxes and social contributions attributable to non-mandatory social contributions by employers is 21 percent in the U.S., three times higher than in Germany.
- Data on the share of non-mandatory social contributions made by employees in the overall total are not available for the U.S. statistics. If a relevant size was known, the other shares shown for the U.S. in Table 7 would have to be decreased accordingly. In Germany, this share is only 2 percent.

A. Compensation of Employees

Social contributions are only partly mandated by law. Other social contributions, including retirement and health insurance plans, are offered voluntarily by firms as part of an employee's total compensation package or are mandated by collective labor agreements.[18]

An accurate measure of total employee compensation includes all employers' social contributions (mandatory and non-mandatory by law),[19] and for comparison we include non-mandatory social contributions as a component of our social contribution rates.

Figure 2 shows paid wage tax and social contribution rates on the total compensation of all employees as a percentage of total labor costs.

In the U.S., paid wage tax rates are around 14 percent of total labor costs, slightly higher than in Germany.

Paid social contribution rates mandatory by law (employer plus employee) are around 10 percent of total labor costs in the U.S., much lower than Germany's 25 percent.

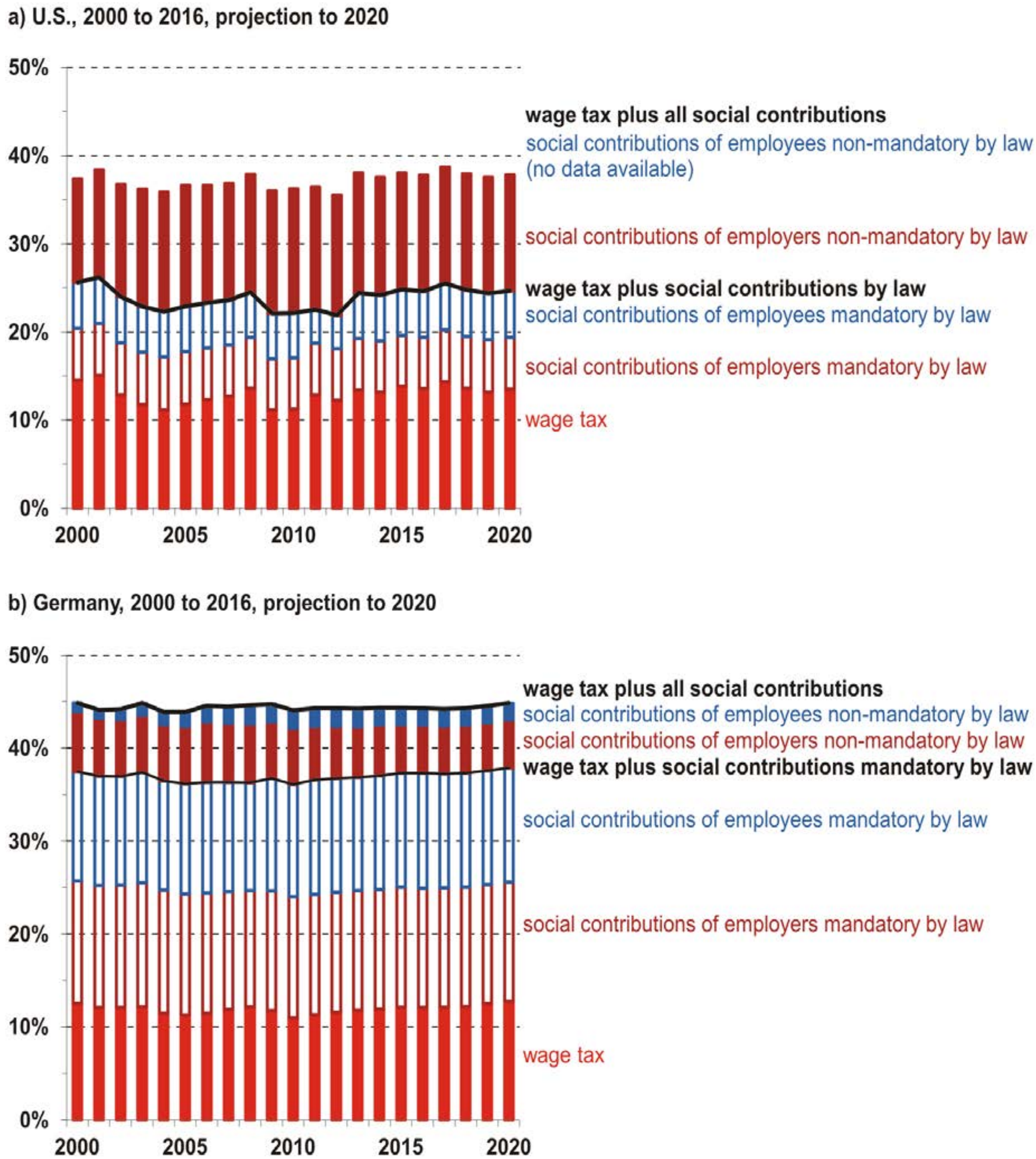
If we only include social contribution rates mandatory by law, the U.S.'s total paid tax on labor is only 25 percent of total labor costs, compared with around 37 percent in Germany.

If we also include social contributions non-mandatory by law, our estimate of the total rate is around 38 percent of total labor costs in the U.S. compared with around 45 percent in Germany,

[18] Many social contributions are roughly interchangeable with wages. In the U.S., a significant portion of compensation is non-wage because these alternative forms of compensation are typically tax privileged. Thus, every dollar spent by an employer is worth more to the employee — but less to the government — than a dollar spent on wages.

[19] OECD, "Taxing Wages 2015-16" (2017), and OECD, "Revenue Statistics 2016" (2016), only take into account social contributions that are mandatory by law. In reality, this is only part of the true cost of labor.

Figure 2. Paid Wage Tax and Social Contribution Rates on Compensation of Employees as a Percentage of Total Labor Costs

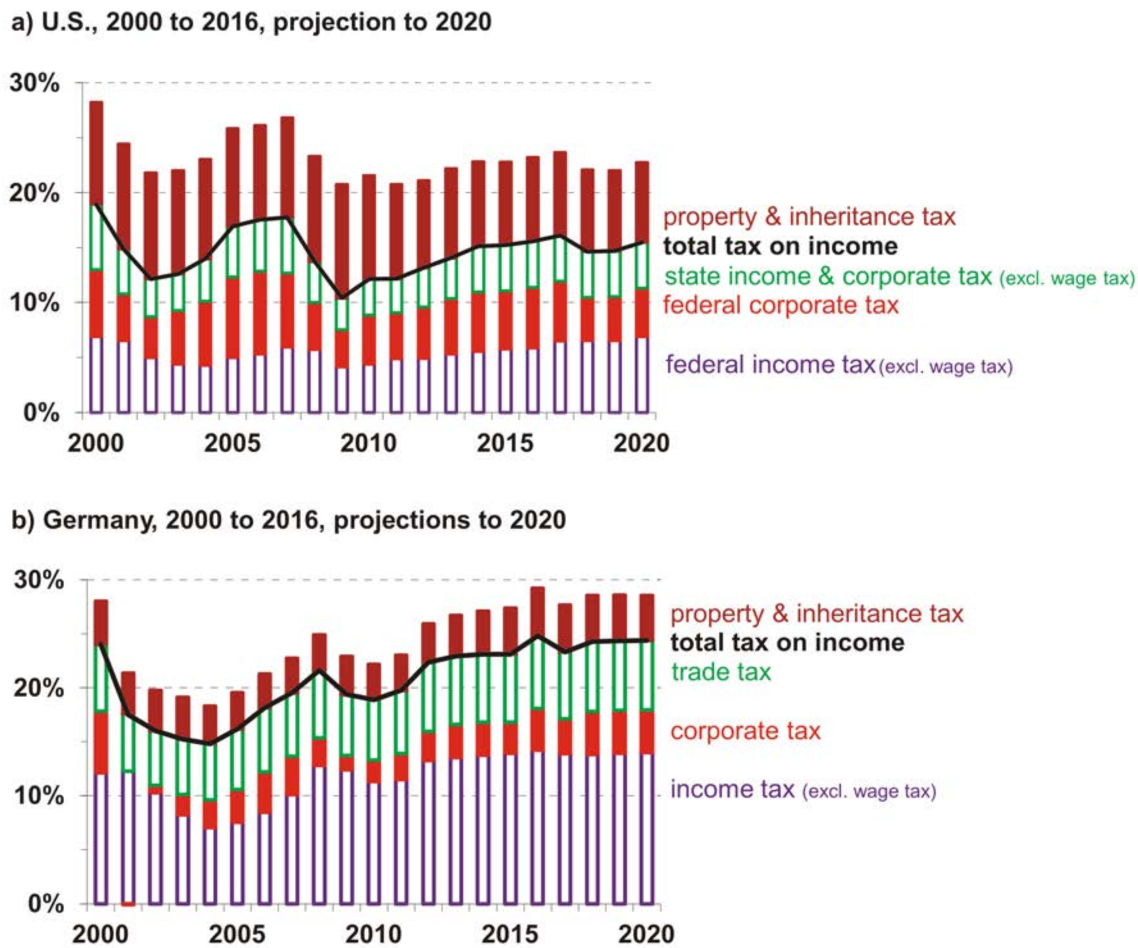


suggesting that the true difference in rates may[20] be quite small.

The U.S. tax reform is projected to have only a marginal effect on the wage tax burden. Although it lowers federal marginal tax rates on personal income, it also repeals or limits many itemized deductions and hence is estimated to have little effect on total revenue raised from labor income.

[20]Mandatory social contributions of employees are available in national accounts. No data is available in U.S. national account statistics for non-mandatory social contributions of employees. *See also* Table 7, *supra*.

Figure 3. Paid Tax Rates on the Sum of Noncorporate Business Income, Corporate Business Income, and Private Capital Gains as a Percentage of Total Income



B. Business Income and Private Capital Gains

The owners of capital are taxed in many ways. Some taxes, such as most property taxes, are imposed directly on the value of owners' assets. Other taxes, such as capital gains taxes, tax income accruing to capital. Sometimes business income is taxed twice — once when earned as profits by a corporation and a second time when earned as dividends by an individual.

Figure 3 shows paid tax rates on the sum of noncorporate business income, corporate business income, and private capital gains as a percentage of total income.[21]

In 2015 paid tax rates on business income and property were around 23 percent in the U.S. and 27 percent in Germany.

While this burden is expected to remain constant for Germany, it is expected to decline somewhat for the U.S. by 2020 because of U.S. tax reform.

C. Corporate Business Income

Figure 4 shows paid tax rates on corporate business income as a percentage of total income.

Paid tax rates on corporate business income were 19 percent in the U.S. in 2015, compared with 13 percent in Germany. Notably, in both countries, the paid corporate tax rate is considerably less than the statutory tax rate.

Under the old U.S. tax system, the Congressional Budget Office estimated that the

[21] We use data from the IRS and the German Federal Finance Ministry (Bundesministerium der Finanzen) to split income tax receipts between wages and other personal income. Taxes on capital gains and property are also included. The totals are then divided by gross operating surplus from the national accounts to get a measure of the paid average tax burden.

Figure 4. Paid Tax Rates on Corporate Business Income, as a Percentage of Total Income

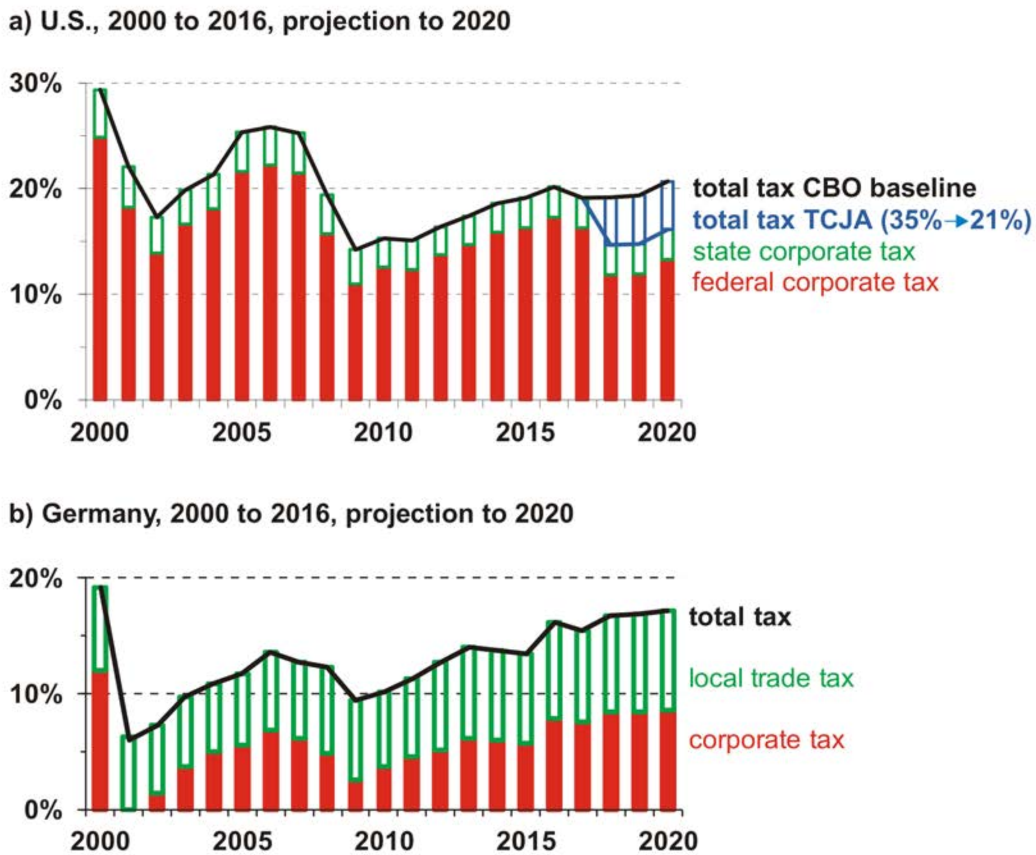
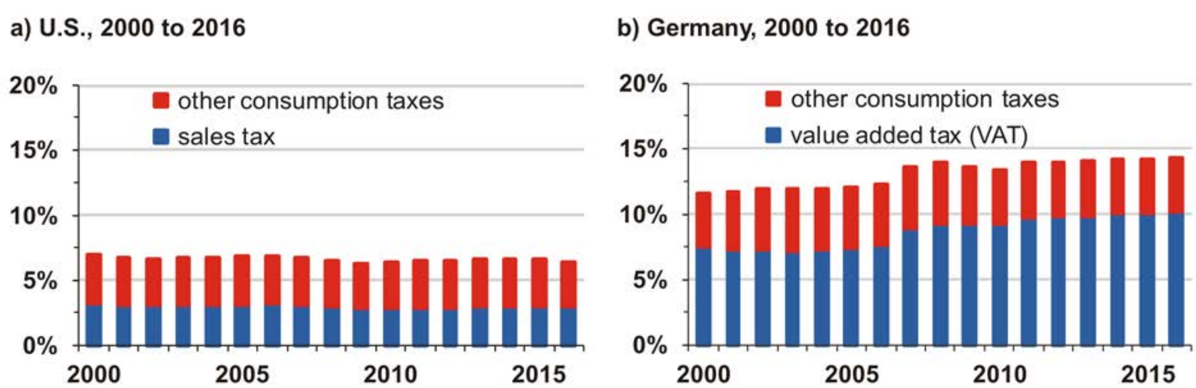
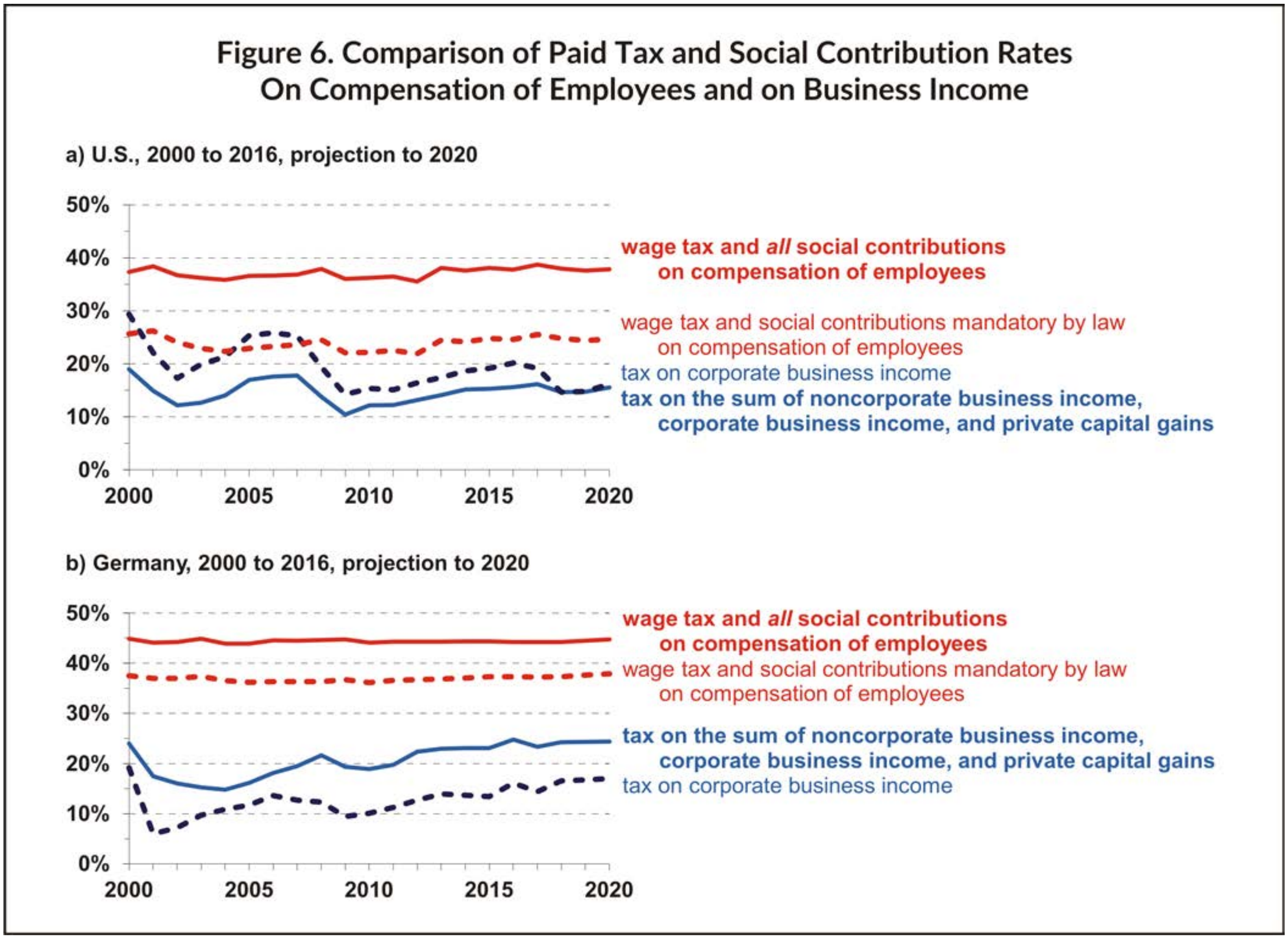


Figure 5. Paid Tax Rates on Consumption as a Percentage of Total Consumption Expenditure





actual corporate tax burden would rise to 21 percent by 2020. Because of the U.S. tax reform, the Joint Committee on Taxation projects that the paid corporate tax rate will decrease to 14 percent in 2018 and 2019, before reaching 16 percent by 2020, compared to 17 percent in Germany.

The projected decrease in the paid corporate tax rate is much smaller than the headline-grabbing decrease of the statutory federal corporate tax rate from 35 percent to 21 percent under the TCJA. This is because state corporate tax rates remain the same and there are many new measures aimed at impeding tax evasion, including: base erosion taxes, taxes on profitable subsidiary and intangible income, stricter rules on the taxation of controlled foreign corporations, and limitations on the use of interest deductions and losses (both of which copy German antiavoidance measures introduced in 2008).

It is important to note that "paid tax rates" are sometimes referred to as "effective (average) tax rates." This should not be confused with estimates of the "effective tax burdens," which are statutory tax rates corrected by depreciation differences between countries that do not use data on actual tax revenue raised. This is why our conclusions differ from those in a recent study that found that as a result of tax reform, "the effective tax burden on firms in the U.S. will be lower than in Germany (28.2 [percent]) and close to the EU average (20.9 [percent])."[22]

D. Consumption

Taxes on consumption add to the burden that taxation places on individuals by increasing the after-tax prices of goods and services, thereby reducing the spending power of after-tax income. Therefore, taxes on consumption should be

[22] Friedrich Heinemann and Christoph Spengel: "Germany Loses Out in US Tax Reform," ZEW (Dec. 13, 2017). Note: ZEW is also known as the Centre for European Economic Research.

included in any cross-country comparison of tax burdens. Figure 5 shows paid tax rates on consumption as a percentage of total consumption expenditure of households.[23]

U.S. consumption taxes are primarily levied at the state and local level, and thus are unaffected by the recent U.S. tax reform.

In 2015 Germany's paid consumption tax burden was over 18 percent, more than double the U.S. burden of 7 percent.

IV. Overall Comparison: Germany and the U.S.

Figure 6 provides an overall comparison of paid tax and social contribution rates on compensation of employees as a percentage of total compensation and on capital income as a percentage of total income.

In Germany, the total of paid taxes and all social contributions is around 45 percent of employees' total compensation. In the U.S., it is slightly below 40 percent. If we include only mandatory social contributions, as the OECD does, the paid tax and social contribution rate on labor is around 25 percent in the U.S., compared with around 37 percent in Germany.

In 2015 paid tax rates on the sum of noncorporate business income, corporate business income, and private capital gains were around 15 percent of the total income from those sources in the U.S. and around 25 percent in Germany. These numbers are expected to remain unchanged.

Focusing only on corporate business income, in 2015 the paid tax rate was slightly below 20 percent in the U.S. and slightly below 15 percent in Germany. Because of U.S. tax reform, the paid U.S. tax rate on corporate income will fall to 14 percent in 2018 and arrive at 16 percent by 2020, making it slightly lower than Germany's corporate tax rate of 18 percent in 2020. ■

[23] To calculate the tax burden on consumption, we total the revenue raised from consumption taxes, including but not limited to sales taxes and VAT, and compare that with the value of final consumption expenditure of households based on government data.