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https://spengel.bwl.uni-mannheim.de/forschung/

Estimation of the Tax Revenue Loss Caused by Cum/Cum Transactions

Update 2021 on behalf of and in collaboration with the research network CORRECTIV[1]

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The most important in brief:

Conservative estimates of potential tax revenue losses due to Cum/Cum transactions in 10 countries from 2000 to 2020 amount to EUR 141 billion.

[1] The original estimate from 16 May 2017 is available at: https://www.bwl.uni-mannheim.de/media/Lehrstuehle/bwl/Spengel/Dokumente/ Medien/Steuerschaden_Cum-Cum_de.pdf

I. Methodology

In cooperation with the research network CORRECTIV[2], the original estimate of tax revenue damage caused by Cum/Cum transactions in Germany in 2017 is extended for additional countries and in time. The central assumption of our estimation is that Cum/Cum transactions could be carried out in all years and countries considered. The validity of this assumption is based on research conducted by CORRECTIV. The maximum period considered is 2000 to 2020 for Germany, Austria, Spain, Italy, the Netherlands, Belgium, France, Luxembourg, Switzerland, and the USA.

The estimate of the tax revenue loss is based on two approaches. The first approach assumes a certain fraction of foreign shareholders improperly avoided the capital gains tax levied on dividends through Cum/Cum transactions with domestic "intermediate acquirers" either in the form of securities lending or as a sale and repurchase transaction. In general, all foreign shareholders have the incentive to avoid the capital gains tax through Cum/Cum transactions. However, it is not clear how many foreign shareholders avoid the capital gains tax. We provide a conservative benchmark estimate assuming that 50 percent of foreign shareholders engage in Cum/Cum transactions. The assumption is based on investigative research of the team of CORRECTIV, interactions with tax authorities and market participants, and plausibility checks by the team at the University of Mannheim.

The second approach assumes that 15 percent of the capital gains tax levied on dividends was improperly avoided through Cum/Cum transactions. This approach is based on observing a very short-term and short-lived increase in security ownership of domestic banks, from approximately 0 percent to a maximum of 15 percent, during the period of dividend payment dates for some securities in individual years.

Consequently, the potential tax revenue loss from Cum/Cum transactions is calculated either as 50 percent of dividend payments attributable to foreign shareholders or as 15 percent of the total dividend payment, each multiplied by the capital gains tax rate on dividends determined in double taxation treaties (DTT).[3] The reduced tax rate in double taxation treaties generally amounts to 15 percent.[4] Alternatively to our conservative estimate, we estimate the potential tax revenue loss from Cum/Cum transactions if foreign shareholders were not entitled to the reduced DTT capital gains tax rate, using the – usually higher – country- and year-specific nominal capital gains tax rate.

The estimates include only dividend payments of firms listed in the leading index of the respective country. Each index includes a different number of firms and has a different market capitalization. In general, all dividends to foreign shareholders of all firms can be subject to Cum/Cum transactions.

In sum, this results in a potential tax revenue loss of between about EUR 63 billion (15 percent of shares are used in Cum/Cum transactions and DTT capital gains tax rate) and about EUR 235 billion (50 percent of foreign-held shares are used in Cum/Cum transactions and local capital gains tax rate) for

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[2] CORRECTIV is a donation-funded research center for investigative journalism in Germany (https://correctiv.org/ueber-uns/).

[3] Based on these estimates, it is generally possible to adjust the estimated tax revenue loss upwards or downwards for the countries in our sample, if new investigations uncover new details on the fraction of shareholders engaged in Cum/Cum transactions.

[4] This rate might be limited due to lower statutory capital gains tax rates. This is the case for Italy.

all countries in the years 2000 to 2020. Our benchmark estimate amounts to about EUR 141 billion (50 percent of foreign-held shares are used in Cum/Cum transactions and DTT capital gains tax rate).

II. Conservative Baseline Estimation of the Tax Revenue Loss caused by Cum/Cum Transactions (2000-2020)

Country	Covered Stock Index	Paid dividends in millions (2000-2020) (1) total	(2) thereof to foreign shareholders	(3) 50 percent of (2)	Tax Revenue Loss based on (3), assuming a general DTT capital gains tax rate of 15% in millions (2000-2020)
Germany	DAX	570,115.69 €	380,637.55 € (66.8%)	190,318.78 €	28,547.82 €
Austria	ATX	38,130.81 €	14,025.94 €(36.8%)	7,012.97 €	1,051.95 €
Spain	IBEX 35	331,822.44 €	250,934.91 € (75.6%)	125,467.45 €	18,820.12 €
Italy	FTSE - MIB	326,254.58 €	195,106.53 € (59.8%)	97,553.27 €	13,274.47 €
Netherlands	AEX	373,420.40 €	359,498.73 € (96.3%)	179,749.36 €	26,962.40 €
Belgium	BEL20	128,294.47 €	95,705.46 €(74.6%)	47,852.73 €	7,177.91 €
France	CAC 40	625,593.00 €	443,604.87 € (70.9%)	221,802.44 €	33,270.37 €
Luxembourg	LuxX	31,861.50 €	29,222.80 €(91.7%)	14,611.40 €	2,191.71 €
Switzerland*	SMI	85,152.98 €	64,438.52 €(75.7%)	32,219.26 €	4,832.89 €
USA*	Dow Jones	315,581.27 €	64,779.10 €(20.5%)	32,389.55 €	4,858.43 €
Total		2,826,227.13 €	1,897,954.41 € (73.74%)	948,977.21 €	140,988.06 €

* Switzerland and the USA include only the period 2000 to 2008.

How to read the table, example for Germany:

Overall, German firms, listed in the DAX 30 stock index, paid about EUR 570 billion of dividends to their shareholders in the period from 2000 to 2020 (Column 1). About 67% of these dividends were paid to foreign shareholders (Column 2). We assume that 50% thereof, i.e., about EUR 190 billion, were subject to Cum/Cum transactions (Column 3). If these dividends were subject to the beneficial capital gains tax rate of 15%, as applicable in most bilateral double tax treaties, this would result in a tax revenue loss of about EUR 28.5 billion in the period from 2000 to 2020 (Column 4).

III. Detailed Estimation of the Tax Revenue Loss caused by Cum/Cum Transactions (2000-2020)

Country	Covered Stock Index	Paid dividends in millions (2000-2020)				Median Capital Gains Tax Rate		Tax Revenue Loss based on (3) in millions (2000-2020)		Tax Revenue Loss based on (4) in millions (2000-2020)	
		(1) total	(2) thereof to foreign shareholders	(3) 50 percent of (2)	(4) 15 percent of (1)	Local Capital Gains Tax	DTT Capital Gains Tax	Local Capital Gains Tax	DTT Capital Gains Tax	Local Capital Gains Tax	DTT Capital Gains Tax
Germany	DAX	570,115.69 €	380,637.55 €	190,318.78 €	85,517.35 €	26%	15%	48,389.91 €	28,547.82 €	21,765.92 €	12,827.60 €
Austria	ATX	38,130.81 €	14,025.94 €	7,012.97 €	5,719.62 €	25%	15%	1,822.41 €	1,051.95 €	1,478.13 €	857.94 €
Spain	IBEX 35	331,822.44 €	250,934.91 €	125,467.45 €	49,773.37 €	21%	15%	26,064.06 €	18,820.12 €	10,426.97 €	7,466.00 €
Italy	FTSE - MIB	326,254.58 €	195,106.53 €	97,553.27 €	48,938.19 €	13%	13%	17,594.41 €	13,274.47 €	8,829.68 €	6,662.54 €
Netherlands	AEX	373,420.40 €	359,498.73 €	179,749.36 €	56,013.06 €	15%	15%	29,240.88 €	26,962.40 €	9,103.75 €	8,401.96 €
Belgium	BEL20	128,294.47 €	95,705.46 €	47,852.73 €	19,244.17 €	25%	15%	12,825.56 €	7,177.91 €	5,141.40 €	2,886.63 €
France	CAC 40	625,593.00 €	443,604.87 €	221,802.44 €	93,838.95 €	34%	15%	74,591.06 €	33,270.37 €	31,685.67 €	14,075.84 €
Luxembourg	LuxX	31,861.50 €	29,222.80 €	14,611.40 €	4,779.22 €	21%	15%	3,037.40 €	2,191.71 €	993.41 €	716.88 €
Switzerland*	SMI	85,152.98 €	64,438.52 €	32,219.26 €	12,772.95 €	40%	15%	13,095.92 €	4,832.89 €	5,192.27 €	1,915.94 €
USA*	Dow Jones	315,581.27 €	64,779.10 €	32,389.55 €	47,337.19 €	22%	15%	8,122.51 €	4,858.43 €	11,920.99 €	7,100.58 €
	Total	**2,826,227.13 €**	**1,897,954.41 €**	**948,977.21 €**	**423,934.07 €**	**25%**	**15%**	**234,784.12 €**	**140,988.06 €**	**106,538.18 €**	**62,911.93 €**

* Switzerland and the USA include only the period 2000 to 2008.

How to read the table, example for Germany:

Overall, German firms, listed in the DAX 30 stock index, paid about EUR 570 billion of dividends to their shareholders in the period from 2000 to 2020 (Column 1). Based on anecdotal evidence of banks' ownership shares increases in various German DAX 30 companies around dividend dates, we assume that 15% thereof, i.e., about EUR 85.5 billion, were subject to Cum/Cum transactions (Column 4). If these dividends were subject to the German capital gains tax rate of 26.375% (Column 5), this would result in a tax revenue loss of about 21.8 billion euros in the period from 2000 to 2020 (Column 9).

IV. Central Assumptions

(1) ***Data on dividends and shareholders is obtained from EIKON and Bloomberg Terminal.***
We obtain the amount of total dividends paid for each firm in the countries' leading stock index from EIKON and Bloomberg Terminal. Data on shareholders of all firms is obtained from Bloomberg Terminal. The shareholder structure and location of shareholders are extracted on a fixed date for all firms in our estimation and assumed to be static over the complete sample period. We use the share of foreign ownership in summer 2021 as a proxy for the average foreign ownership share over the complete sample period.

(2) ***Alternative 1: 50% of the dividend paid to foreign shareholders is affected by Cum/Cum transactions. Column (3)***
Foreign ownership of the shares under consideration is assumed to be static. Shareholders of firms whose residence cannot be clearly determined are assumed to be residents abroad.

(3) ***Alternative 2: 15% of total dividends are affected by Cum/Cum transactions. Column (4)***
The assumption is based on anecdotal evidence. In short periods around dividend record dates, banks' ownership shares in various German DAX 30 companies have increased from 0% to as much as 15%. Since Cum/Cum transactions can be realized through securities lending or sale and repurchase transactions with the help of banks, this increase in shareholdings may indicate Cum/Cum transactions. The increases in the shares of individual German DAX 30 companies can mainly be observed in the years 2010 to 2012.

(4) ***Cum/Cum transactions are feasible in every country and in any year considered.***
It is assumed that Cum/Cum transactions or comparable dividend arbitrage transactions are not impossible and that national legislations allow a refund of capital gains tax for certain domestic shareholders. Any statutory restrictions on Cum/Cum transactions or comparable dividend arbitrage transactions are not considered. Based on CORRECTIV's research, Cum/Cum transactions or comparable dividend arbitrage transactions were factually possible in each country and period considered. [5]

(5) ***Cum/Cum transactions were conducted with shares listed in the leading index of the country.***
The estimation includes only firms listed in the leading index of the respective country. In principle, it is also possible to carry out Cum/Cum transactions with other shares.

(6) ***The composition of the leading index is constant.***
For simplification purposes, the composition of the leading indices was not adjusted annually. It is assumed that the key index existed in its current composition over the entire period under consideration.

(7) ***The tax revenue loss is determined by the capital gains tax according to double taxation treaties or the statutory national capital gains tax.***
Due to many double taxation treaties and for a conservative estimate, Cum/Cum transactions are assumed to avoid capital gains tax according to double taxation treaties. For cross-border Cum/Cum transactions, the maximum capital gains tax is generally limited to 15 percent by double taxation treaties (DTTs). According to DTT regulations, in countries that apply an imputation system nationally, a capital gains tax of 15 percent on foreign held shares is assumed to estimate the tax revenue loss from cross-border Cum/Cum transactions. Alternatively, we estimate the potential tax revenue loss from Cum/Cum transactions using the country- and year-specific nominal capital gains tax rate.

[5] Switzerland and USA include only the period 2000 to 2008.