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*Retained Earnings and
Foreign Portfolio Ownership:
Implications for the Current Account Debate*

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Retained Earnings and Foreign Portfolio Ownership: Implications for the Current Account Debate

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Abstract

In some countries, a sizable fraction of savings is derived from corporate savings. Although larger, traded corporations are often co-owned by foreign portfolio investors, current international accounting standards allocate all corporate savings to the host country. This paper suggests a framework to correct for this misleading attribution and applies this concept to Germany. For the years 2012 to 2020, our corrections retrospectively reduce German savings and consequently the German current account surplus by, on average, €11.5bn annually. This amounts to approximately five percent of Germany's average official current account surplus (€226.6bn) across these years.

Keywords: current account; balance of payments; corporate savings; retained earnings, foreign portfolio investment; Germany

JEL classification: F32, E21

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1 Introduction

High current account surpluses by several countries have triggered an intense political and academic debate over the past years. For example, some argue that Germany's surpluses have depressed economic activity in other countries.¹ In the EU, the prevention and eventual correction of “excessive” current account balances are part of the Macroeconomic Imbalances Procedure (European Union, 2011).

Against this background, it is of crucial importance to correctly measure a country's current account balance. This is not a trivial issue, because many balance of payments entries are based on estimates rather than observations, which may result in substantial measurement errors (see Braml and Felbermayr, 2019). Moreover, reported current account balances depend on how specific transactions enter the balance of payments statistics, according to the Sixth Revision of the International Monetary Fund's Balance of Payments Manual (IMF, 2013) – known as BPM6. The definitions utilized in BPM6, however, may not always be appropriate for the question at issue.

Because of accounting identities, a current account surplus – which reflects a surplus of domestic savings over domestic investment – must go along with net capital exports.² For this reason, high domestic savings are often blamed as a source of international imbalances. At the same time, the literature has recognized that a growing fraction of national savings takes the form of corporate savings (Chen et al., 2017), which have been identified as an important driver of Germany's current account surpluses in recent years (Deutsche Bundesbank, 2017; Felbermayr et al., 2017; Hoffmann et al., 2021).

When accounting for corporate savings in the balance of payments, an important distinction is made between retained earnings of companies that are affiliates of foreign direct investors and other companies whose equity is — partly or totally — held by foreign portfolio investors. In the first case, a single foreign investor holds at least 10% of the affiliate's equity, establishing a “direct investment relationship” (IMF 2013, p. 101), and the retained earnings of the affiliate are attributed to the country of the direct

¹ For a discussion, see Braml et al. (2018).

² Differences between the balances of the current account and the financial account may be due to the capital account balance and statistical discrepancies. The capital account comprises capital transfers as well as the acquisition and disposal of non-produced, non-financial assets. For Germany, the capital account balance usually is of minor importance.

investor in proportion to the investor's ownership share.³ In the second case, which includes all other companies, the retained earnings are treated as domestic savings. This classification occurs despite the fact that a large fraction of these corporations also may be held by foreign investors via smaller levels of participation that do not satisfy the criterion for a "foreign direct investment (FDI)" and thus instead represent foreign portfolio investments (FPI).

In the current account, this asymmetry is reflected by the fact that reinvested earnings of domestic companies held by foreign direct investors are treated as debit entries in a country's primary income account (IMF 2013, p.188). Conversely, reinvested earnings of domestic companies held by foreign portfolio investors do not affect primary income and the current account.

This heterogeneous practice may be justified by the differences in management control. In the case of FDI, the decision to reinvest profits is made by the (foreign) parent company, whereas it is made by the (domestic) firm management in the case of FPI (IMF 2013, p. 189). Nevertheless, ignoring reinvested earnings outside direct investment relationships may bias the assessment of countries' current account balances.⁴ In the case of Germany, the magnitudes involved may be substantial. According to the IMF's Balance of Payments Statistics, the average balance on "dividends on equity excluding investment fund shares" in Germany's primary income account amounted to -10.8 billion USD annually between 2005 and 2020 or -4.2 percent of Germany's current account balance.⁵ If, for the sake of illustration, each euro of dividend distributed to foreign portfolio investors were accompanied by another euro of retained profits to be attributed to these foreigner investors (reflecting a 50% profit distribution), this would result in an ex-post downward correction of Germany's net primary income (and current account) by roughly 11 billion USD per year.⁶

The main objective of this paper is to investigate whether adjusting retained earnings for foreign portfolio ownership would perceptibly change the size of the German

³ In the case of Germany, a majority of foreign affiliates are wholly owned. See Mintz and Weichenrieder (2010).

⁴ This view is expressed, e.g., by Deutsche Bundesbank (2017, p. 21).

⁵ Note that the "income on investment fund shares includes both dividends and reinvested earnings" (IMF 2013, p. 205), i.e., the problem that reinvested earnings are attributed to the host country instead of the owner's country does not occur in the case of investment shares.

⁶ Of course, it is unclear how large the retained earnings per euro of dividend actually are. The respective clarification is a side benefit of this study.

current account. As Figure 1 illustrates, it is a stylized fact that a large part of Germany's gross foreign capital imports are equity investments, whereas a relatively small share of Germany's gross foreign capital exports takes this form. Adjusting the reported balance of payments figures by accounting for foreign portfolio ownership can therefore be expected to lower Germany's national savings and potentially result in a decrease of the country's reported current account surplus. The question is: by how much?

Figure 1: Equities as a Share of Germany's Cross-border Assets and Liabilities



Note: The blue line represents the share of equities in Germany's foreign assets; the red line illustrates the share of German liabilities in the form of equity. Source: Deutsche Bundesbank.

Our findings confirm the expected sign of the correction. For the years 2012 to 2020, our corrections reduce German savings and consequently the German current account surplus by, on average, €11.5bn annually. This amounts to five percent of Germany's average yearly current account surplus (€226.6bn) across these years.

Researchers both at policy institutions and in academia have been aware of the potential "measurement bias" resulting from the asymmetric treatment of retained earnings for countries' current accounts and have developed various solution

approaches to address these potential biases (Adler et al., 2018; IMF 2018; Fischer et al., 2019)⁷. The biggest challenge in assessing the magnitude of the bias comes from the difficulties in accurately identifying ownership positions at the firm level, and in combining this information with firm-level information on profits and retained earnings. Due to a lack of precise data, most existing studies base their estimates on *average* (country-specific) retained-earnings ratios, and combine this information with balance-of-payments figures on capital-income flows.

In this paper, we adopt a (slightly refined) version of this strategy when it comes to assessing the magnitude of retained earnings abroad that could be assigned to owners residing in Germany. Furthermore, our assessment of retained earnings that could be assigned to foreign owners of German companies adopts a much more granular approach, using detailed information on firm-specific ownership structures, earnings, and dividends. We believe that this procedure results in even more reliable estimates of the potential bias associated with measuring capital income flows, and that it may therefore further inform discussions about how to treat reinvested earnings outside of direct investment relationships, e.g., in the context of the debate about the 7th revision of the IMF’s Balance of Payments Manual.

The paper is structured as follows. The next section describes our data collection for the German inbound side of portfolio investments. Section 3 deals with the outbound side, where, for the research team of this study, access to data is more limited. Our concept for the German outbound side, with its more modest data requirements, could be applied more generally to correct national savings for foreign portfolio ownership. Section 4 presents our quantitative results, followed by a sensitivity analysis in Section 5. Section 6 summarizes our findings and provides some conclusions.

2 German Inbound Portfolio Investment

The analysis of the German inbound side of portfolio investments concentrates on listed firms. This approach reflects the expectation that small-scale foreign portfolio participation in non-listed firms comes with a disproportionate governance cost.

⁷ In fact, in its recent *External Stability Reports*, the IMF explicitly corrects the observed current account balances of some countries to account for the “measurement bias” stemming, inter alia, from the treatment of retained earnings on portfolio equity investments (see, e.g., IMF, 2022a, 2022b:34-35).

Consequently, investments in non-listed firms usually imply a 10 percent or greater ownership share and are therefore classified as FDI rather than FPI. As discussed in the introduction, FDI firms are not our interest because, for these firms, corporate savings are already allocated to the country of the investor. The omission occurs with FPI firms, which is where we place our focus.

For German traded companies, we collected financial information available in professional data bases. Data on retained earnings and dividends were taken from Orbis. As Orbis lacks information on dividend payments for financial firms, this information was completed drawing on Bloomberg data for dividends of financial firms. For our calculations, we made use of the after-tax-profits of German firms and deducted the dividends as flagged for distribution in the previous year's balance sheet. Table 1 reports on the aggregate retained earnings (i.e., corporate savings) that results over the period 2012-2020 and the number of firms behind our measure of retained earnings. On average, across years, our data covers 327 German corporations. While this is not the entire universe of German traded firms, non-negative savings as well as negative savings are concentrated on a small population of larger firms, as illustrated by Figures 2a and 2b.

The accounting data on firms' dividends and retained earnings are then matched with information on firm ownership. The last two columns of Table 1 indicate the number of firms, for which such a match could be achieved, and their retained earnings.

Table 1. Retained Corporate Earnings of German Traded Firms (2012-2020)

Year	Number of Firms	Retained Earnings (in bn euro)	Number of Matched Firms	Retained Earnings of Matched Firms (in bn euro)
2012	292	47.4	253	46.3
2013	306	33.1	277	32.3
2014	311	30.8	286	33.5
2015	319	20.9	300	24.9
2016	324	30.8	308	31.0
2017	332	69.5	322	69.4
2018	347	51.0	339	51.0
2019	354	40.6	340	39.2
2020	360	10.3	344	5.4

Note: Based on firms' accounting information from Orbis and Bloomberg. "Matched firms" are firms for which data on retained earnings could be matched with ownership data via the SHS-Base plus data base. Retained earnings by matched firms in 2014-2016 is lower than in the initial sample due to unmatched firms, whose dividend payments exceeded after-tax profits.

Figure 2a. Non-negative Corporate Savings Distribution

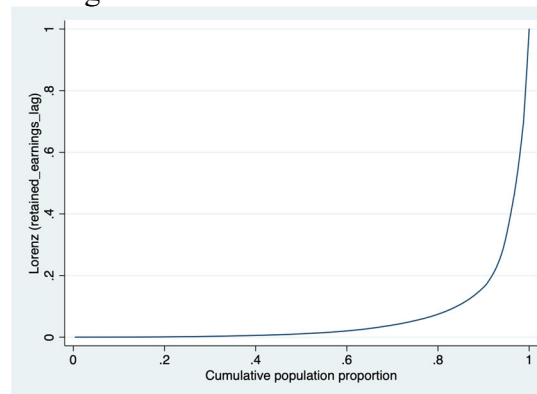
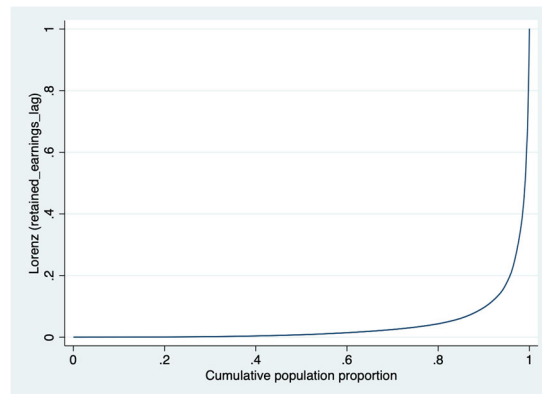


Figure 2b. Negative Corporate Savings Distribution

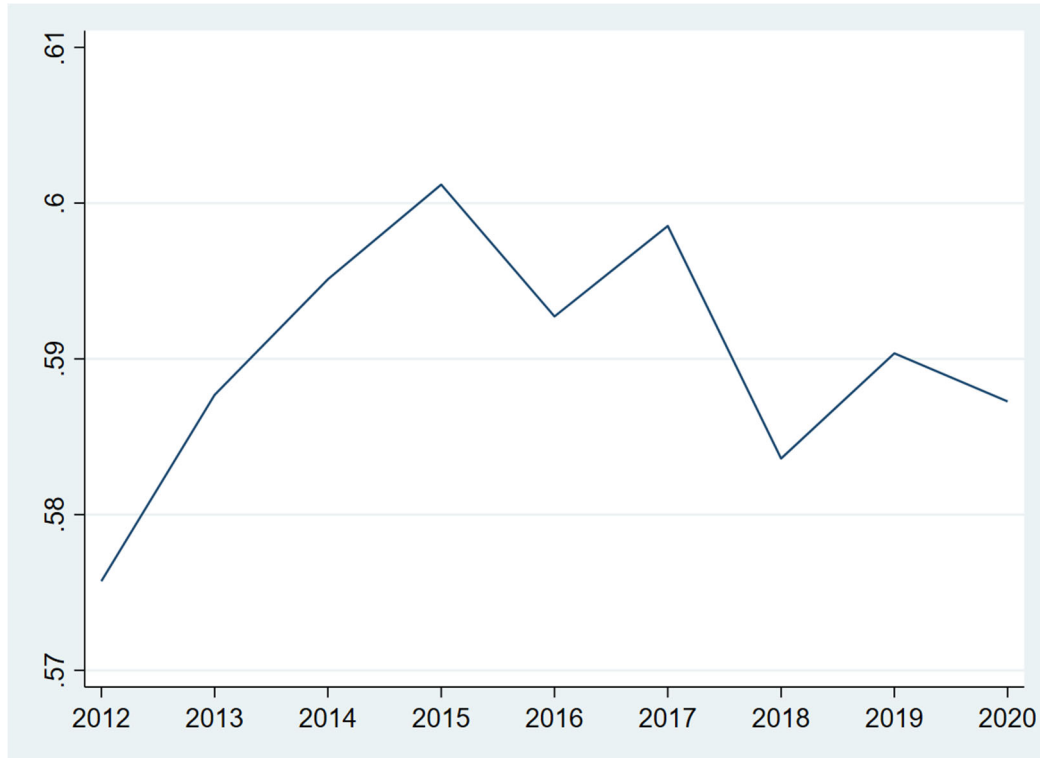


Note: Lorenz curves for non-negative and negative observations of retained earnings in 2016.

Information on the prevalence of foreign ownership is derived from the Deutsche Bundesbank's Securities Holdings Statistics (SHS-Base plus). Starting in December 2005, the Securities Holdings Statistics (formerly, Securities Deposits Statistics) have been including micro data on securities holdings. Financial institutions domiciled in Germany report securities which are deposited by domestic or foreign customers.

Furthermore, domestic banks provide information about their own holdings, irrespective of where the securities are held.⁸

Figure 3: The Share of Foreign Ownership in German Traded Stocks (2012-2020)



Note: The ownership shares are based on the SHS-Base plus data base for individual companies.

Figure 3 depicts the (weighted) average share of foreign ownership between 2012 and 2020 for the sample of matched firms.⁹ It hovers around 59% with a relatively narrow bandwidth.

⁸ An alternative, professional data base with foreign ownership information is provided by Refinitiv Eikon. While this data base seems to be behind several journalistic contributions on the foreign ownership of large German corporations, its coverage is concentrated on institutional investors (banks, funds, etc.). In May 2021, Eikon, on average, allowed the identification of 56% of the ownership in the 30 largest German public firms (DAX members). A possible way to close the gap could be to assume that the unidentified owners have the same proportion of foreign investors as the identified owners. However, since identified owners tend to be institutional owners, while unidentified owners are likely to be dominated by private investors, this approach is questionable and not pursued in the present study. Further studies on foreign ownership are sometimes conducted by banks and accounting firms on an ad hoc basis, but with limited year and firm coverage.

⁹ Note that the ratio depicted in Figure 3 could theoretically cover also ownership via “direct investment relationships”. However, most direct investment equity is administered by parent firms themselves rather than German banks. The stocks listed in the SHS-Base plus database are therefore mostly portfolio investments.

3 German Outbound Portfolio Investment

For German *inbound* portfolio investment, detailed ownership information from the German deposit data is accessible. On the *outbound* side, by contrast, the calculation of foreign retained earnings that should be attributed to Germany is less straightforward. There is no unifying and comprehensive source for German portfolio ownership in individual foreign firms.

If we did not face this constraint, we would calculate the volume of corporate savings that can be attributed to German portfolio investors in country i by the following expression:

$$\sum_j gs_{jit}(R_{jit} - R_{jit-1}) \quad (1)$$

Here, gs_{jit} is the aggregate German ownership share in firm j of country i in year t , and $\Delta_{jit} = R_{jit} - R_{jit-1}$ denotes the change of equity that does not come from new shareholder equity in the respective firm. Unfortunately, we lack knowledge of the German ownership shares gs_{jit} in individual foreign firms. The same holds for the average German portfolio ownership share in country i . We therefore use information on total dividends accruing to German portfolio investors from country i in the year t , $\sum_j GD_{jit}$, as this can be inferred from German current account data available within Deutsche Bundesbank. To compute the change in equity, we take a corporation's value of Δ_{jit} . Adding this difference Δ_{jit} across all firms and dividing by firms' total profits (with D_{jit} denoting the profit of firm j in country i at time t) yields a proxy for the country-specific ratio of reinvested earnings over dividends. Multiplying this expression by German dividend income from country i could serve as a proxy for German investors' share of retained profits in country i and year t :¹⁰

$$\frac{\sum_j \Delta_{jit}}{\sum_j D_{jit}} \sum_j GD_{jit}. \quad (2)$$

¹⁰ Note that a similar approach is employed by Adler et al. (2018), IMF (2018), and Fischer et al. (2019).

One remaining issue derives from timing effects. Corporations' end-of-year balance sheets report retentions in year t and equity pledged for dividend payments. These dividend payments will then take place in the next year and only in that next year they can show up in the current account as German primary income.

We therefore use the following, slightly different formula:

$$\frac{\sum_j A_{jit}}{\sum_j D_{jit-1}} \sum_j GD_{jit} \quad (3)$$

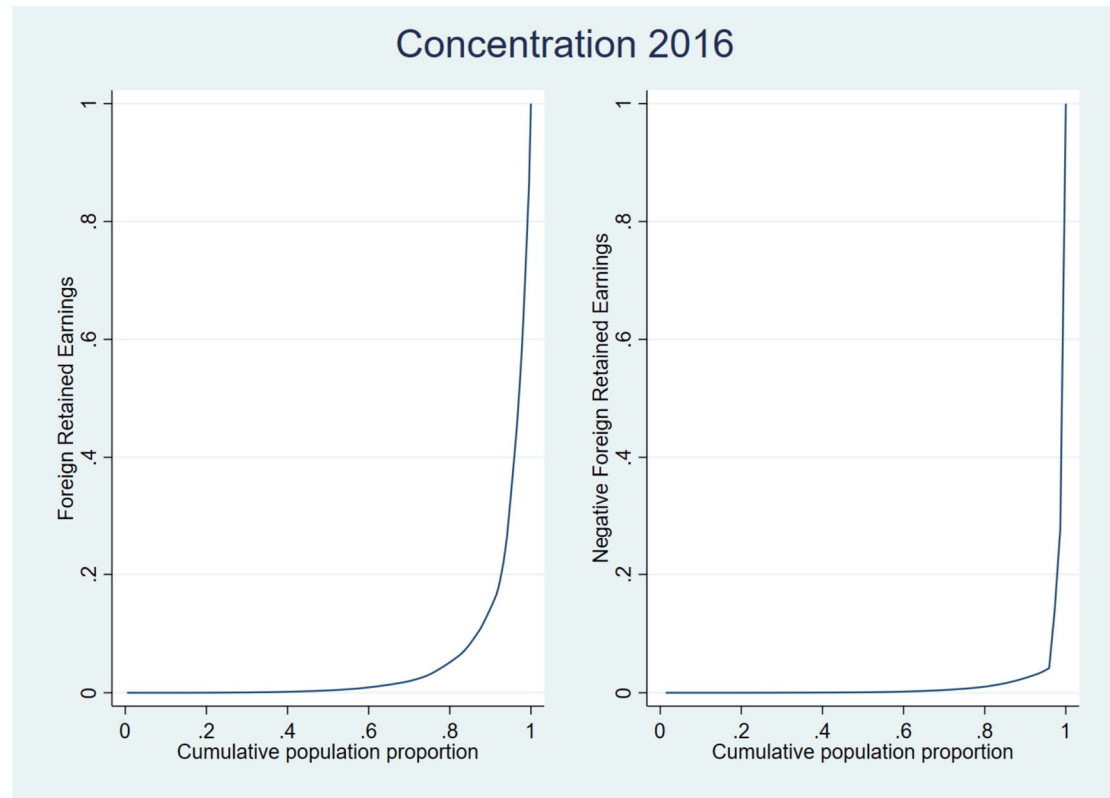
Clearly, this proxy for corporate savings attributable to German investors comes with caveats. In particular, errors may derive from using *sums* for net profits and dividends. If, for example, German investors, for some reason, invested mainly in firms with low retentions (i.e., high payout ratios), our proxy would be biased upward. If, inversely, German investors are disproportionally engaged in firms that do not pay dividends but, e.g., use share repurchases instead, then our measure (2) would underestimate the true retained equity attributable to Germany.

As estimation errors, a priori, can go either way and better information is unavailable, the above expression (3) will be our starting point on the outbound side.

For the empirical implementation, the information on foreign firms' dividends and retentions is drawn from the Refinitiv Eikon database. From this database, we extracted information on all available traded corporations headquartered in a set of foreign jurisdictions. Our coverage of foreign jurisdictions is constructed to make sure that in every year from 2012 through 2020, more than 95 percent of the foreign dividends received by German portfolio investors are covered. This leads to a total of 38 jurisdictions. This country set can be inferred from Table A.1 in the appendix. Based on the unweighted average across years (2012-2020) and 38 jurisdictions, the ratio of retained earnings to dividends (the "retention rate") is calculated as 1.06. Interestingly, the corresponding figure for Germany is very close, amounting to 1.07. Therefore, differences between the inbound and outbound sides should not depend on a different retention propensity of German firms compared to foreign ones, but should be attributable to different amounts of foreign equity investments.

For each country-year cell, we multiply the retention rate by the amount of total dividends from the respective country, as reported in German current account statistics.¹¹

Figure 4: The Concentration of Foreign Retained Earnings (Outbound Side)



Note: Foreign retained earnings (corporate savings) are calculated from Refinitiv Eikon without weighting for German ownership.

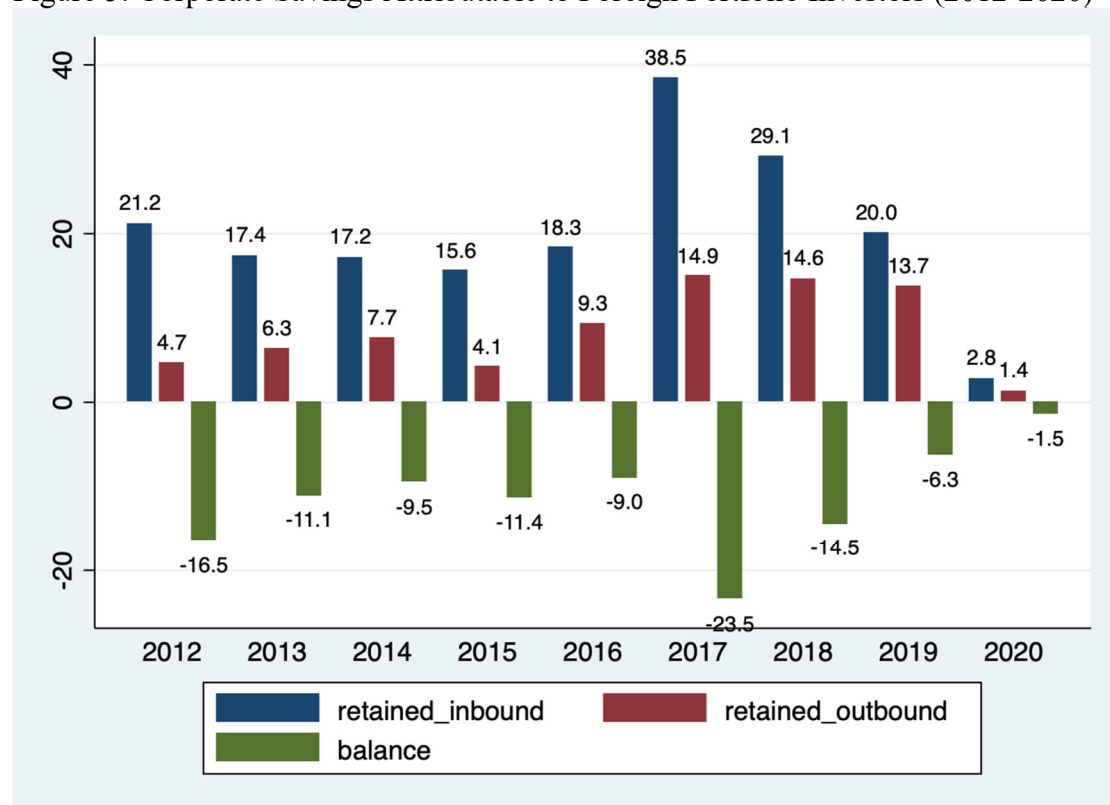
As on the inbound side, the retained earnings and losses of firms across our 38 jurisdictions are heavily concentrated on large firms. Figure 4 illustrates the concentration (separately for increases and reductions in retained earnings) for the year 2016.

¹¹ Fortunately, in the German current account statistics portfolio dividends received by domestic investors are separately available on a pre-tax basis. Foreign withholding taxes on the dividends are booked as a separate item. Note that if data (in other jurisdictions) were available after foreign withholding taxes only, these after-tax dividends needed to be grossed-up to arrive at pre-tax dividends. This grossing-up would be required since dividends in the corporate accounts are reported before withholding tax.

4 Results

This section reports our results that were derived by the two approaches for the inbound and outbound side of German portfolio investment as described above. For each year, Figure 5 reports the size of the absolute corrections to the German current account in billions of euro (green negative bars). We find that a downward correction of the German current account surplus applies throughout, with a maximum of €23.5bn in the year 2017. In 2020, probably due to the Covid-19 crisis, profits and consequently corporate savings were meager; therefore, corrections were small. On average across years, we calculate an annual correction of €11.5bn.

Figure 5: Corporate Savings Attributable to Foreign Portfolio Investors (2012-2020)



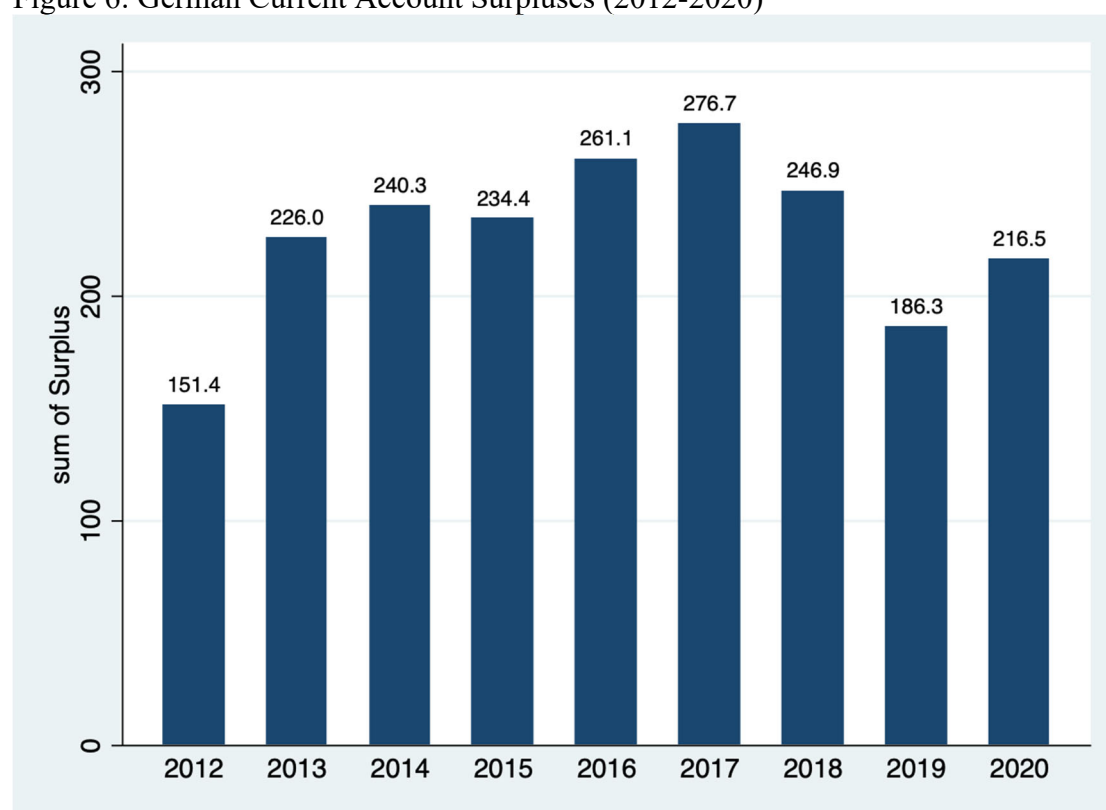
Note: The bars “retained_inbound” (blue) measure German corporate savings that should be attributed to foreign portfolio investors; “retained_outbound” (red) reflects foreign corporate savings that should be attributed to German portfolio investors; “balance” denotes the difference between these values, i.e., “retained_outbound” minus “retained_inbound”.

The blue and red bars show the components on which the net figures — as depicted by the green bars — are based. In all years, the corporate savings that occurred in

Germany, but should have been allocated to foreigner investors (blue bars), were higher than the corporate savings that occurred outside of Germany but should have been allocated to German investors (red bars). This corresponds to the fact that the share of foreign stocks in Germany's total foreign assets is lower than the share of German stocks owned by foreign investors in Germany's total foreign liabilities.

The average correction of €11.5bn amounts to approximately five percent of the average yearly current account surplus in these years (€226.6bn). See Figure 6 for a year-by-year plot of recent German current account surpluses.

Figure 6: German Current Account Surpluses (2012-2020)



Note: German current account surplus in billions of euro. Source: Deutsche Bundesbank.

5 Sensitivity Analysis

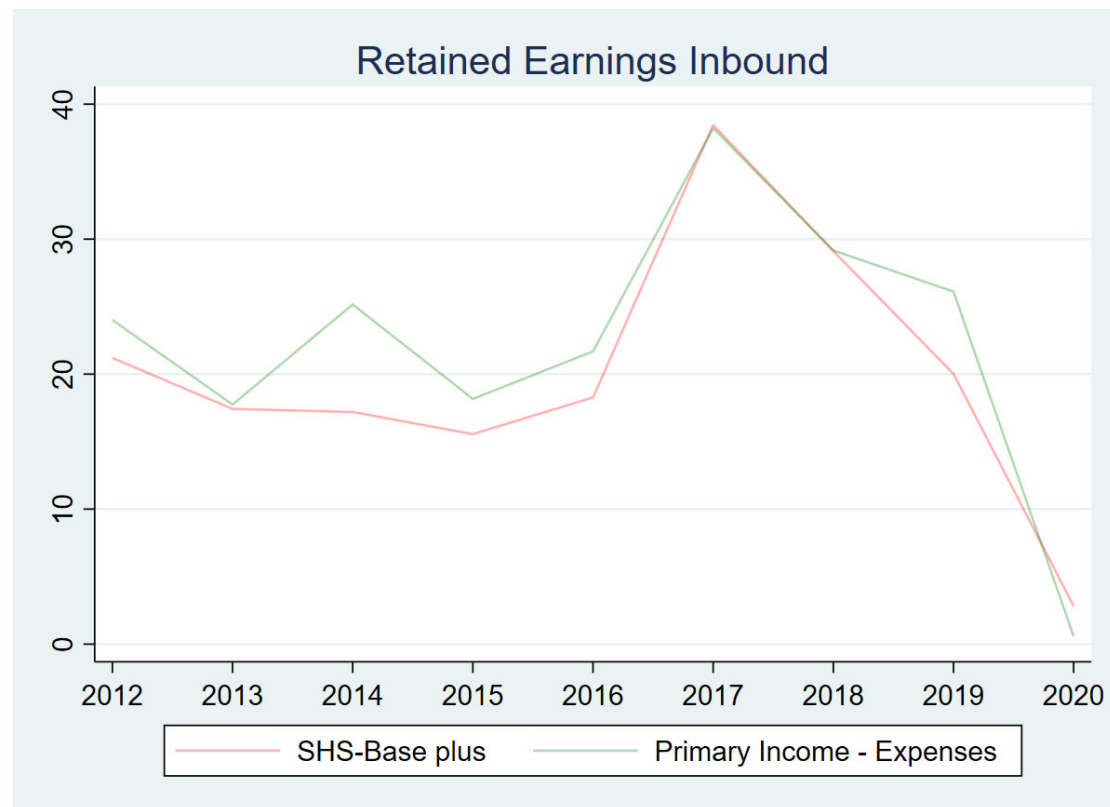
The concept used in Section 3 for the outbound side may be imprecise. Thus, instead of using firm-specific data on retained earnings and German ownership (micro approach), we combined country-year-specific retention rates – as listed in the appendix – with information on total portfolio dividends received from these countries (macro approach).

To shed light on the possible error from this macro approach, we used it on the German inbound side and compare it with the micro approach presented in Section 2.

In Figure 7, the red line represents the retained earnings based on the micro concept actually used in Section 2. Here, retained earnings attributed to foreign portfolio investors are calculated on a firm-by-firm basis making use of Bundesbank's SHS-Base plus data base to identify foreign ownership. The green line uses the macro concept as applied in Section 3 for the outbound side: for each year, available firm observations are used to calculate a country-year specific retention rate, and the retention rate for a given country is combined with information on total dividends received by German investors from that country. As the graph illustrates, the two alternative approaches lead to comparable results in absolute numbers, which are the ones relevant for correcting current account figures. This said, the *relative* magnitudes may differ more pronouncedly. In 2014, the year of the greatest absolute difference, the micro-based figure (€17.2bn) is 32 percent below the macro-based figure (€25.2bn).

Note that this exercise, while being important in its own right, also allows an assessment of the accuracy of the “macro” approaches used by other contributions on this issue (Adler et al., 2018; IMF, 2018; Fischer et al., 2019). If our findings for the German example can be transferred to other countries, it suggests that the macro approach – with its substantially lower information requirements – yields reasonably reliable results.

Figure 7. German Retained Earnings Attributed to Foreign Investors: Comparing Micro and Macro Approaches (Billions of Euro)



Note: The green line (macro approach) displays the retained earnings of German companies attributable to foreign portfolio investors using a year-specific retention rate applied to *all* dividends flowing to foreign portfolio investors. The red line (micro approach) displays company specific information of retained earnings combined with company-specific ownership information from the SHS-Base plus and the CSBD data bases.

6 Conclusions

Balance of payments accounting is complex and is associated with difficult measurement problems. This paper singles out the problem of correctly attributing corporate savings that have become increasingly important over time (Chen et al. 2017). When foreign investors have small minority stakes in domestic firms (below 10% of total equity), current practice stipulates that the corporate savings are completely credited to the domestic economy of the corporation. This practice is misleading, from an economic point of view, because the ownership of these savings is partly foreign. Indeed, international accounting practice under current BPM6

guidelines prescribes such an allocation to foreign investors in the case of large ownership stakes (FDI), but not for FPI.

The implications can be particularly important for a country as Germany, with its asymmetric international structure of foreign assets and liabilities.

Our findings are in line with expectations: for the years 2012-2020, a corrected allocation of the ownership of corporate savings would reduce German savings by an average of €11.5bn per year or €103.5bn, cumulatively. Since capital exports and the current account are two sides of the same coin, such a correction also reduces the German current account by the same magnitude. In relative terms, across the years 2012 to 2020, this reduces the official German current account surpluses by approximately 5%.

A correction of corporate savings not only affects the current account balance, but it also reduces German gross national income (GNI) by the same absolute numbers, as additional primary income is allocated to foreigner investors. In relative terms, this adjustment, on average, reduces yearly German GNI by 0.36 percent.¹²

Our study proposes two concepts – a micro and a macro approach – to re-attribute corporate savings. Both concepts require balance sheet data on yearly increases in retained corporate earnings of (traded) firms.¹³ The differences between the two approaches lie in their different information requirements on firm-specific foreign ownership.

A first “micro approach”, as applied on the German inbound side, makes use of such information on firm-specific foreign ownership. Although the information is confidential and not publicly available, it can be derived from the SHS-Base plus data base.

A second “macro approach” is proposed if firm-by-firm data on foreign ownership is not available, but country-pair data on cross-border portfolio dividends exists. In this case, it is possible to calculate country-year specific ratios between corporate savings (increase in retentions) and dividends paid based on the traded firms accounting information. A country that receives portfolio dividends from a foreign jurisdiction can

¹² Average German GNI across 2012-2020 was 3211.23bn (destatis.de). $\left(\frac{11.5}{3211.23} = 0.358\%\right)$.

¹³ While minority stakes are possible in non-traded corporations, we expect these cases to be negligible as the governance cost argument suggests the prevalence of large investments in this case (FDI).

then apply the respective country-year ratio to the received dividends. This allows the estimation of the undistributed profits as they have been accrued abroad, but should be attributed to domestic investors. Reassuringly, our calculations for Germany show closely comparable results for the two concepts. This insight is important to assess the accuracy of studies that quantify measurement biases in the current account for a larger number of countries, but must rely on the “macro approach” due to the lack of precise ownership information at the firm level.

We hope that our findings and proposed concepts will stimulate the discussion to further develop the guidelines for international accounting practices. Although the application of our concepts may render the computation of current account balances somewhat more complex, the procedure should not necessarily trigger further processing delays. After all, information on retained earnings of corporations is already needed under the BPM6 guidelines, if only for foreign affiliates of multinational corporations.

7 Appendix: Country-Year Ratios of Retained Earnings to Dividends

Our calculation on the outbound side (foreign retained earnings attributed to German portfolio investors) relies on country-year specific ratios of retained earnings to dividends for the period 2012-2020. While our paper only encompasses the years 2012-2020, the table below also shows average values for 2010 through 2021. The data include Germany plus 38 jurisdictions, which represent the most important destination countries based on portfolio dividends received by German investors. The country set has been constructed to ensure that, in each year, the 38 jurisdictions cover at least 95% of portfolio dividends received by German portfolio investors.

For each country-year, Table A.1 reports two ratios derived from aggregating data from Refinitiv Eikon. The measure “Ratio” reports the yearly change in retained earnings after tax and puts it in relation to the amounts earmarked for dividend distribution. Because the latter amount is still part of this year’s balance sheet, it can only be paid to shareholders in the subsequent year. For this reason, our calculations in the main text use a different ratio tagged as “Ratio (lagged)”. It uses the present year’s increase in retained earnings and divides this figure by the dividends tagged for distribution last year (payable this year). For the simple average across all years and countries, we calculated this number to be 1.29. For the years 2012-2020, used in the main text, we calculated an unweighted average of 1.06 when excluding Germany and a value of 1.07 for Germany.

Table A.1: Retained Earnings Relative to Dividends (Country Averages 2010-2021)

Country	Ratio	Nr. of Corporations	Ratio (lagged)	Nr. of Corporations
AUS	0.2	875	0.3	849
AUT	1.1	39	1.2	40
BEL	1.1	81	1.3	82
BRA	0.8	206	0.9	204
BUL	2.8	27	-2.0	33
CAN	0.7	1209	0.8	1201
CAY	-0.2	37	-0.2	32
CHE	1.0	172	1.1	169
CHN	2.0	3581	2.4	3276
COL	1.3	25	1.3	25
DEN	1.4	75	1.8	78
FIN	0.2	77	0.2	77
FRA	0.7	344	0.7	349
GBR	0.5	970	0.5	938
GER	1.1	345	1.2	351
GRE	-5.5	68	-4.3	74
HKG	1.4	1122	1.6	1077
HUN	1.4	8	1.6	10
IDN	0.5	249	-8.5	265
IND	1.9	1453	2.1	1460
IRE	0.9	61	1.0	60
ITA	0.0	106	0.1	107
JPN	1.8	3052	2.0	2975
KOR	3.8	1605	4.4	1517
LUX	1.3	29	1.4	28
MEX	1.2	114	1.3	112
NED	1.3	61	1.5	59
NOR	0.2	101	0.2	99
PHL	1.7	111	1.9	118
POL	1.1	199	0.9	205
RUS	2.2	74	2.7	80
SAU	0.9	86	1.1	86
SGP	0.8	320	0.8	327
SPA	0.7	59	0.6	62
SWE	1.0	247	1.1	239
TWN	0.6	1422	0.7	1412
UKR	-7.8	18	20.4	20
USA	1.4	4154	1.6	3891
VIE	2.8	127	3.3	124
ZAF	0.5	129	0.6	129
Average (2010-2021)	0.8		1.29	

8 Bibliography

- Adler, G., D. Garcia-Macia, and S. Krogstrup (2018): “The measurement of external accounts”, IMF Working Paper 19/132.
- Braml, M. and G. Felbermayr (2019): "What do we really know about the transatlantic current account?", *CESifo Economic Studies* 65, 255-274.
- Braml, M., G. Felbermayr, and L. Wilbert (2018): "Exportieren Länder mit Leistungsbilanzüberschüssen Arbeitslosigkeit?", *ifo Schnelldienst* 16 / 2018, 20-25.
- Chen, P., L. Karabarbounis and B. Neiman (2017), “The global rise of corporate saving”, *Journal of Monetary Economics* 89, 1-19.
- Deutsche Bundesbank (2017): "The German balance of payments in 2016", Monthly Report 69(3), 15 – 31.
- European Union (2011): "Regulation (EU) No 1176/2011 of the European Parliament and of the Council of 16 November 2011 on the prevention and correction of macroeconomic imbalances", *Official Journal of the European Union*: L 306/25 – 32.
- Felbermayr, G., C. Fuest and T. Wollmershäuser (2017): "The German current-account surplus: Causes and consequences", in: Thorsten Beck, Hans-Helmut Kotz (Hrsg.), *Ordoliberalism: A German oddity?*, CEPR Press, London.
- Fischer, A.M., H. Groeger, P. Sauré and P. Yesin (2019), “Current account adjustment and retained earnings”, *Journal of International Money and Finance* 94, 246-259.
- Hoffmann, M., I. Stewen and M. Stiefel (2021): "Growing like Germany: Local public debt, local banks, low private investment", [ECON-Working Papers](#) 380, Department of Economics - University of Zurich.
- IMF (2013): Sixth edition of the IMF's balance of payments and international investment position manual (BPM6), Washington DC.
- IMF (2018): “2018 external sector report - Refinements to the external balance assessment methodology - Technical supplement”, Washington DC.
- IMF (2022a): “2022 external sector report - Pandemic, war, and global imbalances”, Washington DC.

IMF (2022b): “2022 external sector report - Online annex 1.1.: EBA methodology 2022 refinements”, Washington DC.

Mintz, J. and A.J. Weichenrieder (2010), The indirect side of direct investment. Cambridge (MA).