The Geography of Capital Allocation in the Euro Area

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Abstract

We reassess the pattern of Euro Area financial integration adjusting for the role of "onshore offshore financial centers" (OOFCs) within the Euro Area. While the Euro Area records large levels of international investment both within and outside of the currency union, much of these flows are intermediated via the OOFCs of Luxembourg, Ireland, and the Netherlands. These countries have dual roles as both hubs of investment fund intermediation and centers of securities issuance by foreign firms. We look through both roles and restate the pattern of Euro Area investment positions by linking fund sector investments to the ultimate underlying holders and securities issuance to the ultimate parent firms. Our new estimates of Euro Area investment allow us to document a number of stylized facts. First, the Euro Area's estimated gross external position is smaller than in official data. Second, the Euro Area is more biased towards euro-denominated assets and away from US dollar and other foreign currency assets than in official data. Third, the Euro Area is less financially integrated than it appears. Fourth, European financial integration occurs disproportionately through securities issued in OOFCs rather than via domestic capital markets. Fifth, there is a North-South bias in Euro Area financial integration whereby Northern European countries are relatively underweight securities issued by Southern European countries.

Keywords: Financial Integration, Offshore and Onshore Financial Centers, Capital Markets Union, Residency and Nationality, Home Currency Bias.

JEL Codes: F3, F4, G2, G3.

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1 Introduction

The creation of the Euro Area (EA) has been one of the most important economic developments of the post World War II economic architecture. The EA is at its core an attempt of countries to unite their monetary and financial systems. By moving to a common currency, integrating capital markets, and harmonizing regulation, the EA was expected to generate one of the largest capital markets in the world. Financial integration remains a key policy objective, with the Capital Markets Union initiative an ongoing priority for the European Commission.[1]

Policymakers and researchers have long lamented that a full empirical assessment of European financial integration is difficult because of heavily concentrated financial intermediation in Ireland, Luxembourg, and the Netherlands that obscures the underlying capital allocation. We refer to these countries as "onshore offshore financial centers" (OOFCs) because they are onshore markets in the Euro Area and at the same time their financial activities have parallels to those of offshore financial centers. These OOFC countries have dual roles both as a hub of investment fund intermediation and as centers for securities issuance by foreign firms. The role of these financial centers has grown enormously over time (Kindleberger 1973, Eichengreen 1996, Cassis 2010). When investment funds domiciled in these countries hold securities on behalf of other Euro Area or global investors, these holdings are recorded as belonging to these OOFCs rather than the ultimate owners. Similarly, when firms issue bonds through subsidiaries based in these jurisdictions, official statistics record these bonds as the liabilities of the OOFC countries rather than the country of the ultimate parent company.

In this paper, we look through both of these OOFC roles and restate the pattern of Euro Area portfolio investment positions by unwinding fund sector investments—linking them to the ultimate underlying investors—and by associating securities issuance with the ultimate parent firms. We use our resulting estimates to reassess European financial integration: we document that Euro Area financial integration is qualitatively and quantitatively different from what can be ascertained using routinely available aggregate data. The Euro Area is less internally integrated than it appears, it is more inward-looking both in terms of currency and country exposures to the rest of the world, its markets are more fragmented, and some of the integration that has occurred is linked more to tax and regulatory arbitrage than to risk-sharing as in the standard economic view.

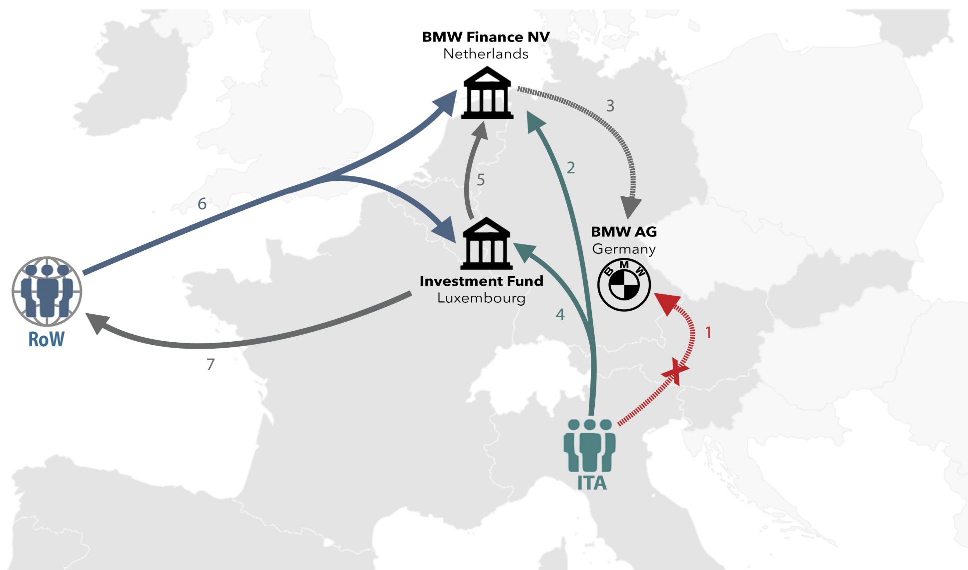
On the surface, a boom in Euro Area financial integration around the time of the introduction of the Euro is clearly visible in public data, as we review in Section 2. However, beneath the surface, there is a complex web of financial relationships. Consider as an example BMW AG, the German automaker. Figure 1 illustrates how BMW raises capital from foreign investors, including from the rest of the Euro Area—for example, Italian investors.[2] One might reasonably imagine that

[1] There were several milestones on the road towards European financial integration, including the European Commission's Financial Services Action Plan for the harmonisation of the EU financial services markets starting in 1999, the Lamfalussy architecture to improve regulatory processes introduced in 2001, the launch of the banking union in 2012, and the two subsequent action plans for the capital markets union (CMU) in 2015 and 2020.

[2] No data from the European Central Bank was used in the production of Figure 1, which should be

BMW would simply issue bonds in Germany that are then bought by the Italian investors (arrow labeled 1 in the figure), but in fact this is not what happens, as BMW does not carry out issuance through any corporate entity resident in Germany. In practice, BMW has established a financing subsidiary domiciled in the Netherlands, BMW Finance NV, through which it issues bonds which are then largely bought by foreign investors (arrow 2). The capital might then be on-lent to the German parent (arrow 3). This is an example of the role of OOFCs as places of securities issuance: this occurs for a variety of reasons, including favorable regulatory and withholding tax regimes in these jurisdictions. International financial statistics are typically assembled on a *residency* basis, and therefore holdings in bonds issued by BMW Finance NV would be considered portfolio assets issued in the Netherlands, and correspondingly as portfolio liabilities of the Netherlands. For many practical applications, economists would rather measure these positions under a *nationality* view, which instead associates the positions with Germany by linking them to the ultimate corporate parent, BMW AG (Avdjiev, McCauley and Shin 2016).

Figure 1: **The dual roles of European OOFCs: an illustrative example**



Notes: This figure provides a schematic representation of the dual roles of European OOFCs, focusing on the example of BMW AG raising bond capital from Italian investors as well as investors outside the Euro Area (labeled Rest of the World, or RoW).

Further, in this example the Italian investors may not hold these bonds directly, but rather part of these positions are likely to be intermediated through investment funds domiciled in Luxembourg or Ireland. In the example given in the figure, a Luxembourg fund holds the securities on behalf of the Italian investors (arrows 4 and 5). This illustrates the second role of European OOFCs, as hubs of fund intermediation. Luxembourg and Ireland are not used just by Euro Area investors, but also by investors in the rest of the world (RoW). RoW investors might buy bonds issued by BMW Finance directly, or they might also go through investment funds in Luxembourg or Ireland

understood as an illustrative example only, constructed from public information.

(arrow 6). RoW investors will also often hold securities issued by firms and governments outside the Euro Area: in this case, the intermediation through Luxembourg and Ireland funds simply reflects a form of "round-tripping", or spurious foreign investment (arrow 7).

In all these cases, Euro Area balance of payments statistics record large levels of international investment, as each of the arrows shown in the graph is recorded separately in disparate categories of portfolio investment and FDI, leading to double-counting and a murkier picture of capital allocation. Our methodology allows us to consolidate all these various positions, leading us—for example—to consider arrows 2 through 5 as a single portfolio debt investment from Italy to Germany.

The issues discussed above are not unique to the EA and are common in other financial centers. However, in the EA they have grown to such proportions, probably due to these centers being onshore and to their role in the overall process of integration of the EA, as to make it nearly impossible to understand Euro Area portfolio investment. This topic is of pressing policy interest due to the divergent credit risks among EA member countries, with highly rated countries in the North (e.g., France, Germany, Netherlands, Finland) and lower rated sovereigns in the South (e.g., Italy, Spain). Sorting out these issues also has implications for public finance, as the decisions of firms and funds to locate in the OOFCs are connected to their tax regime—in terms of both corporate and, especially, withholding taxes. Finally, the analysis of the ultimate ownership of fund shares in Luxembourg and Ireland is important for long-standing debates on wealth inequality.

The starting point of our analysis is the European Central Bank's Securities Holdings Statistics (SHS), which covers the EA countries' securities investments. This dataset is the micro data behind the EA aggregate investment portfolio investment statistics. It is collected on a residency basis at the security level with the holder recorded at the country-sector level (for instance, SHS will record holdings of the French banking sector, but not of individual French banks). We combine this data with estimates on fund-level investment for funds domiciled in Luxembourg and Ireland from commercial sources, to not only unwind fund investment by EA residents, but crucially to also analyze the portfolio of non-EA investors intermediated through OOFC funds. We further combine the resulting data with a mapping algorithm that assigns each security not to its immediate issuer but to the ultimate parent entity and determines its nationality. Finally, we combine information on the immediate counterpart owner of fund shares in Luxembourg and Ireland with the portfolio composition of the funds to investigate who these RoW investors and missing owners are likely to be. One goal of this research project is to develop and provide estimates of bilateral investment positions for the Euro Area that account for these issues.[3]

Using the resulting estimates, we document several facts about Euro Area capital allocation. First, the Euro Area as a whole is less financially integrated with the rest of the world than it appears. Its gross assets and liabilities are smaller than reported in official data. Quantitatively, this happens in large part because Luxembourg and Ireland intermediate fund investment on behalf of the rest of the world. We estimate that only around half of the assets of the fund sectors of Luxembourg

[3]The paper is part of a research collaboration between the ECB and the Global Capital Allocation Project and we aim to make aggregate estimates publicly available.

and Ireland are reported to be owned by EA investors, with the rest potentially owned by non-EA investors. Using our fund unwind methodology, we document that the underlying portfolio of securities held by EA and non-EA investors in these funds is highly heterogeneous. Funds held by EA investors are more likely to invest in securities issued by EA entities (exhibiting stronger home and EA bias) and, within bond investment, are more likely to hold euro-denominated bonds (a home currency bias), as compared to funds held by non-EA investors. Overall, rather than the officially reported positions of 5 trillion euros in non-EA bonds and 4 trillion euros in non-EA equity, we estimate that the Euro Area owns around 2.8 trillion of non-EA bonds and 2 trillion of non-EA equity at the end of 2020. Similarly, the amount of bonds held by EA investors denominated in non-euro currencies falls from 3.8 to 1.6 trillion euros, implying roughly a halving of the non-euro share in the overall EA bond portfolio (from 23% to 12%).

Second, Euro Area financial integration is lower than official data implies. Most obviously, this occurs because many claims of one EA member country on another represent only one step in a long chain of intermediation. Going back to the example in Figure 1, the direct route would have resulted in two euros in recorded gross positions within the EA for each euro of investment: one in portfolio assets booked by Italy and one in portfolio liabilities booked by Germany. The indirect route, in contrast, leads to six euros in recorded gross positions. More subtly, attempts to either consider the EA as a single block or to naïvely distribute the full Luxembourg and Ireland fund portfolio to the rest of the EA member states (either proportionally to reported fund shares holdings or by GDP weights) would still result in estimates of financial integration in the Euro Area that are too high. This occurs, despite the netting of fund shares, because the positions of Luxembourg and Ireland funds not held by EA investors are large and more diversified within the EA (on top of being more diversified in the rest of the world) than those held by each respective EA member state. For instance, there is home country bias within the EA even when investing indirectly via Luxembourg and Ireland. Additionally, remapping the securities by nationality rather than residency shrinks the cross-border positions held by all investors in the EA.

Third, we show that securities issued in OOFCs are more widely held by EA investors (bringing portfolios closer to an international CAPM benchmark) than those issued in national capital markets. Firms which raise capital through OOFCs therefore better approximate the policy goal of a Capital Markets Union in the EA, with their liabilities held widely by investors around the currency area. We show that this integration is not purely the result of selection, but rather that there is an allocative causal effect of moving issuance to the OOFCs. We demonstrate that *within* a given firm's issuance (using firm fixed effects) the rest of the EA members are more likely to hold bonds issued in the OOFCs (in the same currency, i.e. euros) than those issued domestically in the country of nationality of the firm. Further, we document that this effect is heterogeneous and related to a North-South bias in EA investment patterns. We establish the North-South bias by showing that investors in the North are more likely to invest in each other (excluding the domestic effect) than in the South, and vice versa. We establish this effect in bonds, and show that it is particularly strong for sovereign bonds. For corporate issuers, one way to overcome home bias and North-South bias

within the Euro Area is to issue in the OOFCs, as this allocative effect is quantitatively larger for countries in the South, like Italy, and smaller for countries in the North, like Germany.

Fourth, we document who the RoW investors in Ireland and Luxembourg funds are likely to be and how their portfolio holdings differ from known EA investor holdings. The identity of these investors is notoriously difficult to ascertain. The range of possibilities is wide, with papers in the literature assuming everything from all of these unrecorded investors being EA-based to none of them being resident in the EA. We show that for Ireland both the immediate counter-party data and the composition of the portfolio point to investors based in the United Kingdom accounting for the bulk of fund investment. In particular, the Irish investment fund sector has large holdings of UK assets and especially UK gilt bonds denominated in pounds. These assets are mostly indirectly held by British investors via fund shares.[4] For Luxembourg, custodial accounts in Switzerland (potentially constituting hidden household wealth) can account for at most 800 billion euros of holdings in 2020 (Zucman 2013). Further, the underlying portfolio is very different in composition from that known to be held by EA investors in Luxembourg funds. This supports the notion that there are additional EA holdings unaccounted for, but that these are not the bulk of the holdings.

Related Literature. Our paper makes progress on long standing issues in international macroeconomics and finance that have implications both within the field but also in the areas of public finance and corporate finance.

First, a voluminous literature has studied international financial centers, both onshore and offshore, and documented their growing role and how they complicate economic analysis, both generally and in the context of the Euro Area. An early landmark study is Kindleberger (1973) on the history and formation of these centers (see also Eichengreen 1996 and Cassis 2010). Hines and Rice (1994), Lane and Milesi-Ferretti (2001), and Zucman (2013) all stress the importance of these centers and analyze their impact on global capital flows.

Second, a literature has focused on the increased financial integration among Euro Area member countries following the creation of the monetary union. Lane and Milesi-Ferretti (2005) and Lane (2005) emphasized that the introduction of the euro was associated with an increase in cross-border bond and equity holdings within the Euro Area, a Euro Area bias. Coeurdacier and Martin (2009), Kalemli-Ozcan, Papaioannou and Peydró (2010), and Fornaro (2022) point to the elimination of exchange rate risk and the legal and administrative harmonization lowering transactions costs within the Euro Area as important drivers of financial integration. Hale and Obstfeld (2016) study how, with the introduction of the euro, the core EA countries levered up to gain exposure to the periphery. Floreani and Habib (2018) use gravity models to document asymmetric exposures to high-rated and low-rated economies in the EA and the importance of fund intermediation in Luxembourg and Ireland. Gopinath et al. (2015), Garcia-Santana et al. (2016), and Dias et al. (2016) investigate the

[4] In fact, liability-driven investment (LDI) vehicles of British pension funds are often domiciled in Ireland and to a lesser extend in Luxembourg and have a core investment strategy of buying (levered) gilt bonds. These positions, spuriously considered foreign positions, were central in the turmoil of gilt markets in September 2022 following the Truss government budget proposal.