A MACRO-DEVELOPMENT PERSPECTIVE ON EURO AREA IMBALANCES

POLICY STUDY

Written by
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EXECUTIVE SUMMARY

Current account imbalances in the Euro Area are widely regarded as a threat to the sustained viability of the euro project. This policy study provides a macro-development perspective on the euro imbalances and their potential long-run costs. It argues that the macroeconomic structure of the Euro Area, and in particular its 'one size fits all' monetary regime, has disproportionately benefited German industrial growth at the expense of the long-run development of the periphery economies.

The policy study begins with a non-technical overview of economic theories linking external imbalances to an economy's industrial structure. In order to clarify these links and relate them to the euro area context, it presents a stylised representation of macroeconomic policy to understand how the introduction of the euro has altered the production-structure of a representative periphery economy (for example Spain).

On this basis, the introduction of the euro can be understood as a surge of capital flows from Germany to the Euro Area periphery. This boosts demand in deficit economies and leads to a rise in the domestic price level – a real effective exchange rate appreciation. In order to accommodate the increased demand for domestic goods, factors of production must be diverted from export sectors towards domestic non-tradable goods. The result is a loss of competitiveness and

shrinking exports. Since productivity gains tend to be concentrated in knowledge-intensive export sectors (for example manufacturing), this temporary loss of competitiveness can translate into slower growth and persistently lower productivity.

Recent macroeconomic trends support this interpretation. This policy study discusses evidence that the euro is significantly undervalued from Germany's perspective relative to its trading partners. This is likely at least partially responsible for a trend of de-industrialisation in the Euro Area's periphery economies relative to Germany. There are also signs that the periphery's loss of competitiveness may leave behind a persistent drag on their productivity growth.

The policy study concludes with tentative policy suggestions to address these structural imbalances. A German-led rebalancing could be engineered through a combination of a more expansionary fiscal stance and policies aimed at promoting wage growth in Germany. A coordinated European-wide approach could aim to address the productivity differentials directly, through a multilateral system of industrial subsidies and incentives targeting deficit economies. A system of taxes and 'speedbumps' on financial flows between Euro Area economies may help to prevent future misalignments and could complement these mechanisms.

> *The macroeconomic structure of the Euro Area, and in particular its 'one size fits all' monetary regime, has disproportionately benefited German industrial growth at the expense of the long-run development of the periphery economies.*

1. INTRODUCTION

At a broad level, the macroeconomic legacy of the euro two decades after its introduction can be told with just two figures. First, the well-known pattern of current account imbalances: large and persistent current account surpluses in Germany, accompanied by deficits in Italy, Greece, Portugal and Spain during the first decade of the euro, and the subsequent dramatic adjustment following the euro crisis (see Figure 1). Second, although Germany's economy has expanded by around 22 percent in per capita terms since the euro was introduced, the latter peripheral economies have stagnated, growing by a meagre 2.5 percent (see Figure 2).

The imbalances have three proximate causes.

- First, and perhaps most importantly, the euro is too weak from Germany's perspective given its level of manufacturing productivity relative to its peers. Since the euro monetary union necessarily rules out nominal exchange rate adjustments, this gives German exports a persistent competitiveness boost.

- Second, German fiscal policy is too tight and prevents the rebalancing of demand necessary to narrow its current account surplus.

- Third, the introduction of the euro coincided with financial integration and concomitant capital flows to the Euro Area periphery, which have put upward pressure on these economies' real effective exchange rates (REER).

Figure 1: Current account balances in Germany and periphery countries (percent of GDP)
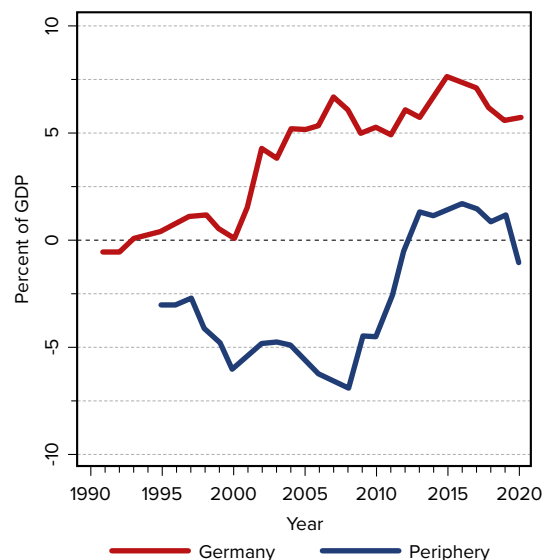
Note: Periphery refers to the weighted average of Italy, Greece, Portugal and Spain.
Source: Author's calculations based on Eurostat data.

Figure 2: Real GDP growth since euro adoption (cumulative percent growth)
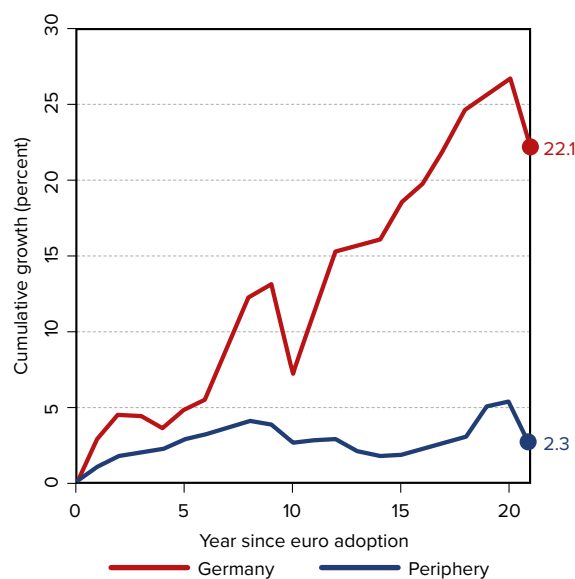
Note: Periphery refers to the weighted average of Italy, Greece, Portugal and Spain.
Year = 0 refers to the first year the Euro was introduced in each country.
Source: Author's calculations based on Eurostat data.

This is all well known. And so are the implications for the ability of euro area countries to respond to negative economic shocks when traditional macroeconomic policy instruments are either lacking (monetary policy) or severely constrained (fiscal policy).[1] Indeed, when the Centre for Macroeconomics (CFM) and Centre for Economic Policy Research (CEPR) surveyed a wide range of Europe-based economists, nearly 70 percent of respondents agreed or strongly agreed that Germany's current account surplus is a 'threat to the Eurozone'.[2] What has arguably received less attention, however, are the long-term implications of these imbalances for the productive development of the euro area's periphery economies.

> ## "
> *Without a concerted policy effort, there is no reason to expect these imbalances will be corrected anytime soon.*
> ## "

The aim of this policy brief is to interpret the euro area imbalances through the lens of development macroeconomics and shed light on the potential consequences on the periphery economies if these structural imbalances are not addressed. I will argue that the macroeconomic structure of the Euro Area, and in particular its 'one size fits all' monetary regime, has disproportionately benefited German industrial growth at the expense of the long-term development of the periphery economies. Moreover, without a concerted policy effort, there is no reason to expect these imbalances will be corrected anytime soon.

My argument is as follows. The introduction of the euro led to a surge of capital flows from Germany to the euro area periphery. This boosts demand in deficit economies and leads to a rise in the domestic price level – a REER appreciation. In order to accommodate the increased demand for domestic goods, factors of production must be diverted from export sectors towards domestic non-tradable goods.[3] The result is a loss of competitiveness and shrinking exports. Since productivity gains tend to be concentrated in knowledge-intensive export sectors (such as manufacturing), this temporary loss of competitiveness can translate into slower growth and persistently lower productivity.

In order to ground our analysis in economic theory, I will begin with a stylised representation of the macroeconomic situation facing periphery economies since adopting the euro. I will draw on a textbook macroeconomic model featuring domestic non-tradable goods and exportable tradables.[4] My aim is to articulate the link between international competitiveness, the introduction of the euro, and de-industrialisation in periphery economies.

Having laid the conceptual groundwork, I will then turn to a broad review of the theory and empirical evidence linking external imbalances to long-term economic growth. Here, I will draw lessons from development economics and will devote special attention to theories of endogenous productivity growth that ascribe a central role to tradable industries in the growth process.

Next, I will examine recent macroeconomic and industrial trends in the euro area to see how well the theories discussed above fit the data. First, I will discuss evidence that the euro is severely undervalued from Germany's perspective and that its current account surpluses are consistent with a type of 'neo-mercantilism' that imposes negative externalities on its trading partners. From the periphery economies' perspective, there are indications that the euro has led to a type of Dutch disease. Second, I will discuss some tentative signs that this pattern of deindustrialisation may leave permanent scars.

Finally, I conclude with a discussion of potential policy interventions. These include options for a German-led rebalancing, as well as multilateral mechanisms aimed at ensuring the long-term sustainability of the Euro Area.

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1   See, for example, Bernanke (2015); De Graul and Ji (2016); and Stiglitz (2016).

2   See the survey results reported by Den Haan et al (2016).

3   See Benigno, Converse and Fornaro (2015) for international evidence on this reallocation channel.

4   In particular, I will develop a version of the well-known Salter-Swan model. See Uribe and Schmitt-Grohe (2020) for a recent formulation.

# 2. INTERNATIONAL COMPETITIVENESS AND STRUCTURAL CHANGE

To fix ideas and conceptualise the link between external competitiveness and structural change, Figure 3 presents a stylised diagram of the macroeconomic situation of a peripheral economy in the euro area. To keep things simple, I will assume that the country under consideration is too small to have any feedback effects on the rest of the Euro Area economies and therefore takes the macroeconomic conditions of its trading partners as given.[5] Our two variables of interest are the *REER* and the share of labour employed in the tradable goods sectors, which I will denote by L_T. In order to determine the equilibrium level of these two variables, I need two macroeconomic balance conditions describing how they are related.

The first of these conditions requires that the aggregate supply of domestic goods is equal to domestic demand. In other words, the total domestic goods consumed in the economy must be equal to the amount produced. I will refer to this condition as the 'market clearing' or *MC* curve on the diagram. The *MC* curve is upward-sloping and captures the combinations of the REER and tradable employment for which domestic demand is consistent with domestic supply. In this simple framework, equilibrium in the domestic goods market is achieved either by changes in competitiveness or by reallocating labour between the domestic goods and tradable sectors. Intuitively, an increase in domestic demand – driven, for example, by a sudden inflow of foreign capital – can be accommodated by a rise in the price level, which appreciates the REER and brings down domestic demand back in line with supply. Alternatively, the increase in domestic demand can be accommodated by increasing supply, which requires producers of domestic goods to hire more labour and decreases the share of employment in the tradable sector.

The second of our conditions captures how the relative price of domestic and tradable goods (ie the REER) depends on the relative productivities of each sector. I refer to this condition as the 'relative productivity' condition or *RP* curve. The *RP* curve is downward-sloping in our diagram because firms in the tradable sector require a competitiveness boost relative to domestic goods (a fall in the REER) in order to hire more workers (an increase in L_T).

The level of competitiveness and the production structure of the economy are determined when the domestic market is balanced and the relative productivity condition is met. This is the economy's equilibrium and occurs at a point of intersection between the *MC* and *RP* curves. Point A in Figure 3 is an example of an equilibrium. The REER implied by this equilibrium can be found by tracing the dashed line from point A to the vertical intercept. The relative size of the tradable sector is L_T^*. This example captures the macroeconomic situation of a country receiving moderate capital flows and that, as a result, has a competitive REER and a relatively large tradable sector. One can also think of point A as representing a periphery economy prior to the adoption of the euro.

Figure 3: Structural effects of euro adoption
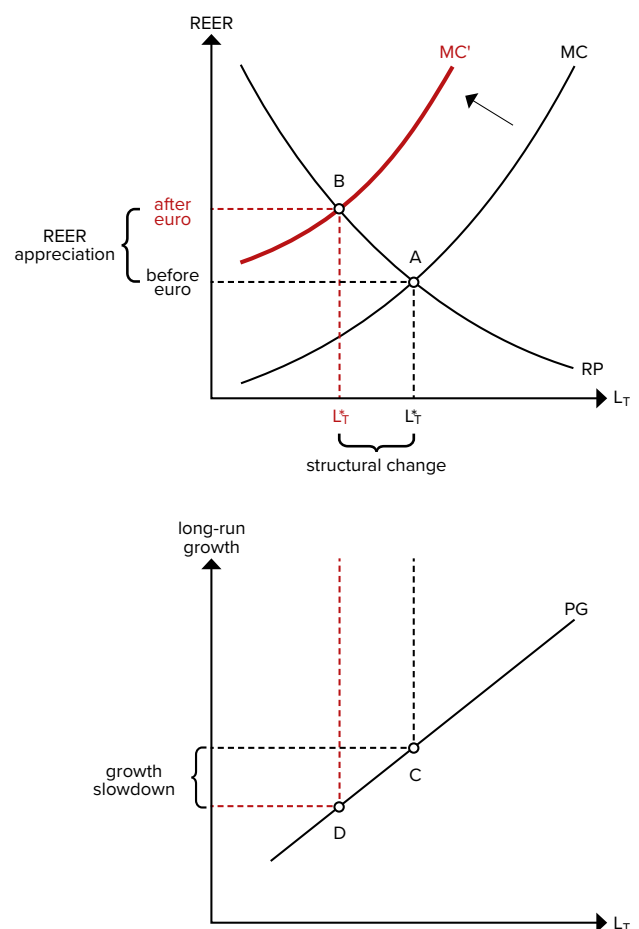
structural change

In this framework, we can think about the adoption of the euro as a large increase in capital flows to the peripheral economies. This is consistent with the widening current account imbalances between Germany and the peripheral economies observed since the introduction of the euro, which are shown in Figure 1. The immediate effect of these large capital flows is to stimulate demand for domestic goods and services. The higher demand must be accommodated by a combination of an increase in the domestic price level or an increase in supply, which requires reallocating factors of production towards producing domestic goods and away from production for the export market.

Graphically, this corresponds to an upward shift in the *MC* curve, indicated in red by *MC'*. Tracing the *RP* curve, the new equilibrium after the adoption of the euro is at point B. Our diagram therefore predicts that the increase in capital flows experienced by periphery economies since joining the Euro Area should lead to a significant loss of external competitiveness (that is, a large REER appreciation) and structural change (a decrease in the size of the tradable sector). We will see below that this stylised framework does a good job of describing the recent macroeconomic trajectory of peripheral economies relative to Germany.

> *We can think about the adoption of the euro as a large increase in capital flows to peripheral economies. The immediate effect of these large capital flows is to stimulate demand for domestic goods and services. The higher demand must be accommodated by a combination of an increase in the domestic price level or an increase in supply, which requires reallocating factors of production towards producing domestic goods and away from production for the export market.*

3. LONG-TERM GROWTH CONSEQUENCES

What are the likely long-term effects of the 'euro competitiveness shock' for the peripheral economies? Predictions about long-term productivity and growth trends are inherently uncertain. Nevertheless, there are good reasons to suspect that this pattern of REER overvaluation coupled with a shrinking export sector may leave lasting scars on the euro area's peripheral economies.

The idea is as follows: the export sector, and in particular modern manufacturing, is the engine of economic growth due to its high concentration of complex and knowledge-intensive activities with economies of scale. If this is true as a rough approximation, temporary losses of competitiveness may have permanent effects on an economy's productive capacity and technological development by reallocating economic activity towards non-tradable sectors lacking these positive growth effects. This idea is captured in the bottom panel of Figure 3. Here, the *PG* curve depicts a positive relationship between the size of the tradable sector and the economy's long-run growth. In our conceptual framework, the adoption of the euro has moved our hypothetical peripheral economy from point C to point D on the *PG* curve, which predicts a productivity growth slowdown.

But where might the productivity growth curve outlined above come from? I now discuss theoretical mechanisms that have featured prominently in the academic literature. I will discuss their empirical relevance in subsequent sections.

> " *Temporary losses of competitiveness may have permanent effects on an economy's productive capacity and technological development.* "

4. THEORETICAL UNDERPINNINGS

Learning-by-doing is the idea that knowledge spillovers between economic actors can give rise to economies of scale in production. This idea dates back to early work by the economist and Nobel laureate Kenneth Arrow (1962) and has figured prominently in theories of endogenous growth. Put simply, firms and workers naturally acquire new knowledge during the production process; knowledge that can be used also by other firms and economic actors. Productivity, therefore, is endogenous and driven by the intensity of production in activities with large knowledge spillovers.

Models featuring learning-by-doing externalities have two important features. First, because individual firms do not appropriate the full economic value of the knowledge they generate, learning spillovers imply a market failure and a role for active government policy. Put differently, since knowledge has the characteristics of a public good, it will be under-supplied by the market. As such, knowledge-generating sectors will be inefficiently small relative to an efficient benchmark that takes into account the social value of the positive externalities.

Second, the existence of learning spillovers implies that an economy's comparative advantage is dynamic and that temporary competitiveness shocks and trade distortions generate path dependence in a country's pattern of specialisation. In contrast to textbook trade theory, this means that an economy's trade specialisation is malleable and evolves in response to macroeconomic conditions and policy interventions. This idea is perhaps as old as the field of development economics itself and is often invoked as a rationale for promoting 'infant industries' through trade protectionism and industrial policy. Indeed, economies of scale arising from learning spillovers are the basis of Krugman's (1987) classic analysis of the long-term development benefits of temporary trade protections. More recently, Greenwald and Stiglitz (2006) have argued that when learning spillovers are concentrated in industrial sectors, temporary trade protections are necessary to prevent developing economies from stagnating and promoting productivity convergence.

As alluded to above, learning spillovers are important in debates about so-called 'export-led growth' as these are thought to be concentrated primarily in tradable goods sectors. Rodrik (2008), for instance, argues that producing for the export market exposes domestic entrepreneurs to international best practices as well as new managerial and production techniques. Similarly, tradable goods – and manufacturing in particular – may entail complex and non-codifiable tasks for which on-the-job experience and tacit knowledge-accumulation are key. This implies that the size of the tradable sector is an important determinant of productivity growth and that macroeconomic shocks that appreciate the REER and shift factors away from tradable sectors will leave lasting scars on an economy's development.

Development economists have long recognised that REER appreciations may cause an economy to deindustrialise. This has perhaps been studied most intensely in the context of the so-called Dutch disease or 'resource curse', in which an economy with a booming natural resources sector will deindustrialise and experience a REER appreciation. This is the result of a re-allocation of factors of production away from industry and was first studied in seminal work by Corden and Neary (1982).

In more contemporary debates, several studies have pointed out that a surge of capital inflows may lead to Dutch disease in a similar fashion as a booming primary resource sector. For example, Benigno and Fornaro (2014) show that unregulated capital flows can lead to a *financial resource curse.* In their framework, an improvement in access to foreign finance leads to booming demand for non-tradable goods, which appreciates the REER and reduces the size of the tradable sector. Since the tradable sector is the engine of growth, the temporary surge of capital inflows has permanent negative effects on productivity. Benigno and Fornaro also demonstrate that these effects are unambiguously inefficient from a social perspective and that properly deployed capital account regulations – that is, capital controls – can improve welfare.[6]

It is worth noting that the above arguments do not necessarily depend on positive externalities that are exclusive to the tradable sector, so long as these are relatively stronger than in non-tradables.[7] Nor do they necessarily depend on the specific nature of the externality in question, as long as it generates dynamic economies of scale. For example, Itskhoki and Moll (2019) have shown that, under some assumptions, credit frictions have similar qualitative properties to learning spillovers.

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6   Similarly, see Korinek and Servén (2016) for a model in which foreign reserve accumulation enhances growth by promoting learning externalities in the tradable sector.

7   See Torvik (2001) for a formal model featuring productivity spillovers in both tradables and non-tradables.

4. THEORETICAL UNDERPINNINGS

Taking stock, a common theme in the studies cited above is that large current account deficits can permanently hurt productivity growth and precipitate de-industrialisation. On the flip side, large surpluses are beneficial from a development perspective as these re-allocate production towards sectors with positive externalities. The theories therefore suggest a rationale for engineering an undervalued REER through some combination of foreign reserve accumulation and capital account regulations as part of a broader macroeconomic regime based on export-led growth.

There are, however, important distributional caveats to this argument. *Within* countries, a persistent REER undervaluation amounts to suppressing wage growth in order to increase exports competitiveness. Put differently, undervaluation acts as an effective subsidy to exporter profits at the expense of labour income. It can therefore be expected to increase inequality. A more subtle point concerns inequality across time and between current and future generations. While suppressing wages today in order to stimulate productivity growth, undervaluation may redistribute consumption between current workers taking the wage cuts and those working in the future once the productivity gains have been realised.

Undervaluation may also lead to inequality *between* countries, especially if the surplus economy is large relative to its trading partners. Put differently, a competitive undervaluation in one economy requires a relative overvaluation for its trading partners. The implication is that growth driven by external surpluses is potentially beggar-my-neighbour and generates negative international externalities. In our context, this means that Germany's surpluses impose long-term costs on the Euro Area's peripheral economies.

An analogy to China's development experience is perhaps instructive. Combining large current account surpluses and a substantially undervalued REER, China engineered a dramatic expansion of its manufacturing sector.[8] While this development model has been credited with contributing to rapid growth, critics have accused China of pursuing a type of neo-mercantilism, whereby faster industrial growth in China came at the expense of de-industrialisation and slower growth in its trading partners.

A perhaps underappreciated point is that the combination of market failures and strong path dependence implies that market forces, on their own, cannot be trusted to ensure imbalances are corrected, even in the very long run. Indeed, Greenwald and Stiglitz (2006) argue that less-developed countries, absent policy interventions, will stagnate forever and never converge to the living standards of industrialised countries.

The issue of international spillovers from macroeconomic policy has received extensive attention from academic economists in recent years.[9] While the academic literature is too vast to summarise here, there is one key lesson worth highlighting: if countries have access to sufficient external policy instruments, they can effectively insulate themselves from negative international spillovers.[10] But if these policy instruments are ruled out, for example due to political constraints or membership in a monetary union, the international spillovers may prove quite costly.[11]

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8   See, for example, Jeanne (2013).

9   See, for example, Fratzscher et al (2018) and Georgiadis (2016).

10   See Blanchard (2016) for a strong version of this argument, in which the use of capital controls is sufficient to entirely neutralise international spillovers.

11   In the language of game theory, the issues comes down to whether co-operation can attain a Pareto improvement relative to the Nash equilibrium. See Korinek (2018) for an analysis of the welfare properties of international spillovers.

5. EMPIRICAL RELEVANCE OF PRODUCTIVITY CHANNELS

Much of the debate on the relevance of the theories discussed above has centred on China's rapid development over the last several decades, which was characterised by a persistent REER undervaluation and strong export-led growth. In seminal work, Rodrik (2008) showed that there is a strong link between real exchange rate under-valuation and real GDP growth per capita. Rodrik also provided evidence that the effect appears to operate through the size of the tradable sector. Subsequent studies have broadly corroborated Rodrik's (2008) original findings while introducing caveats and nuances. For example, Rapetti et al (2012) showed that the positive effects on growth are stronger and possibly non-linear for developing economies.

Further evidence of a financial Dutch disease operating through the REER is provided by Rajan and Submaranian (2009), who study the effects of foreign-aid inflows on manufacturing growth. Here, foreign aid has similar macro-economic effects as the capital inflows buffeting the Euro Area periphery economies, increasing the demand for non-tradables and appreciating the REER. Rajan and Sub-maranian show that manufacturing sectors more exposed to competitiveness shocks – which is to say, sectors that tend to export more intensely – experience significantly slower growth of real value-added. Experiencing a 1 per-centage point increase in foreign aid flows slows growth by 0.5 percentage points relative to non-tradable sectors. Consistent with our stylised conceptual framework, REER overvaluations appear to drive the results: a 1 percentage point overvaluation slows growth in tradable value-added by up to 0.2 percent.

Cross-country studies also suggest that economies with an overvalued REER are less likely to experience growth accelerations (Hausman et al 2005) and often fail to sustain growth once it takes off (Berg et al 2012). Overval-uations also appear to inhibit accelerations in investment (Libman et al 2018). These results suggest that REER over-valuations may have lasting development consequences by preventing structural change (Libman et al 2021). In addition, there is evidence that REER *volatility* is particu-larly harmful in developing economies (see for example Guzman, Ocampo, and Stiglitz 2018).

Recent research has shown that dynamic economies of scale – likely due to learning-by-doing externalities – not only predict an economy's industrial develop-ment but also have highly persistent effects historically. For example, Juhász (2018) provides evidence of the effects of temporary trade protections during the Napo-leonic Wars. The French blockade of Britain during the Napoleonic Wars is an ideal setting for studying these questions as it led to temporary trade protections that were driven by strategic war-time considerations and are therefore plausibly exogenous. This means that the impact of these protections can be assessed without fear of contamination by the typical factors influencing a policymaker's decisions to protect an industry against foreign competition. Comparing regions in France with differential exposure to trade protection, Juhász shows that these had large causal effects on the location and scale of mechanised cotton-spinning, a highly innova-tive industry that played a large role in the first industrial revolution. In addition, these effects persisted for nearly a century after the protections were removed, with more heavily protected regions displaying larger cotton-spin-ning capacity and higher industrial value-added per capita by the end of the 19th century.

More evidence of the historical persistence of industrial structure is provided by Weber et al (2021). Using a novel historical database of trade during the first era of glo-balisation, Weber and co-authors provide evidence that an economy's export structure on the eve of the 20th century strongly predicts its contemporary pattern of spe-cialisation. In addition, measures of trade diversification and economic complexity a century ago appear to be highly correlated with average per capita income today.

There is also evidence that a REER depreciation may stimulate innovation by increasing spending on research and development (R&D). Alfaro et al (2018) pro-vide evidence through both structural and reduced-form methods that REER depreciations can boost the profit-ability of innovation and thereby incentivise R&D. This effect, however, depends on the structural characteris-tics of an economy and in particular is stronger for more export-oriented firms.

6. GERMAN NEO-MERCANTILISM?

How well do the scenarios described above fit the situation of the euro area? I now review some key macroeconomic trends pertaining to competitiveness and structural change in the euro area. I will argue that the data suggests that the euro has conferred a structural competitiveness-boost to Germany and there are signs that this has come at the cost of de-industrialisation in the periphery economies.

Our first clue comes from the evolution of the REER across euro area economies. Figure 4 shows the cumulative percent appreciation of the REER since the first year in which the euro was adopted in each respective country. I use a measure of the REER weighted exclusively by trade with other euro economies, in order to highlight relative divergences within the Euro Area. As can be seen in Figure 4, Germany is a clear outlier, having persistently depreciated since the adoption of the euro. At the opposite extreme, Spain has seen the largest persistent appreciation.

Figure 4: REER appreciation since euro adoption (cumulative percent change)
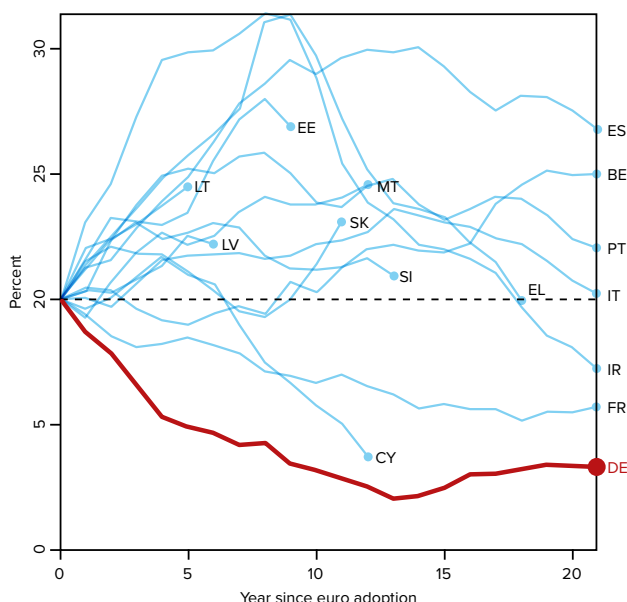
Note: CPI-based REER relative to Euro Area trading partners.
Year = 0 refers to the first year the euro was introduced in each country.
Source: Author's calculations based on Eurostat data.

Although Germany's REER has clearly depreciated significantly relative to its trading partners since adopting the euro, is it fair to say it is *undervalued*? Put differently, is there evidence that its REER is misaligned? Indeed, the observed trends could be driven by Germany's underlying economic fundamentals, not the structural effects of the euro monetary union. While this distinction may seem overly technical, it has normative implications for (for example) who should bear the burden of macroeconomic adjustment.

Assessing REER misalignment is tricky and requires making assumptions – informed by economic theory – about its long-term equilibrium level free of distortions. For example, the International Monetary Fund (IMF) employs two broad approaches in its *External Balance Assessment* (EBA). First, it defines a set of fundamentals that are thought to determine the equilibrium REER. These include macroeconomic variables such as the net foreign assets position, medium-term growth forecasts, demographic trends and the level of GDP per capita relative to its trading partners. The fundamentals are then used to estimate an ideal equilibrium level of the REER. The level of misalignment is thus measured as the difference between the actual REER and the equilibrium level.[12]

The second approach for measuring misalignment is the so-called 'elasticities' method, which defines the REER adjustment necessary in order to bring the current account into balance. This requires econometric estimates of how the various components of the current account react to changes in the REER – their elasticities. It also requires a judgement call about the desired level of the current account that is consistent with normative considerations – a so-called 'current account norm'.

The evidence suggests that Germany's REER is most likely significantly undervalued. Figure 5 reports IMF undervaluation estimates from its recent Article IV consultations. The shaded bars depict the range of IMF staff estimates based on a variety of methods and the circles report estimates based on the REER fundamentals model alone. As we can see in Figure 5, Germany's REER undervaluation was in the region of 20 percent in 2015, depending on how it is measured. And according to the most recent estimates, the undervaluation may have remained as large as 15 percent in 2020, with a conservative lower bound of around 5 percent.

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12   Please refer to Cubeddu et al (2019) for a detailed account of their EBA methodology.
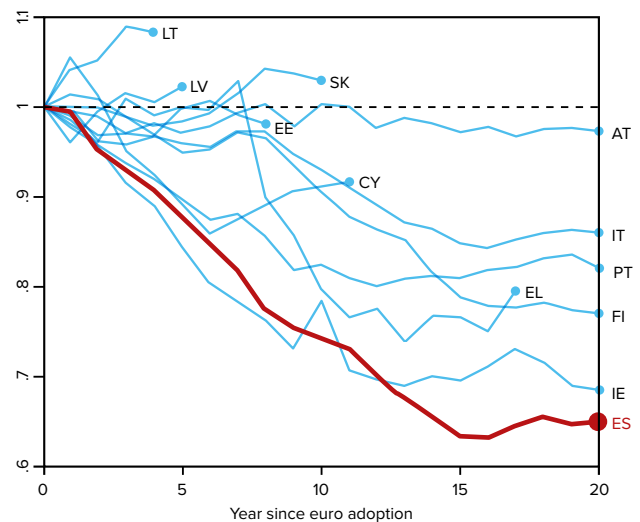
Figure 5: IMF estimates of German REER undervaluation (percent undervaluation)

Staff Range | EBA Level Model
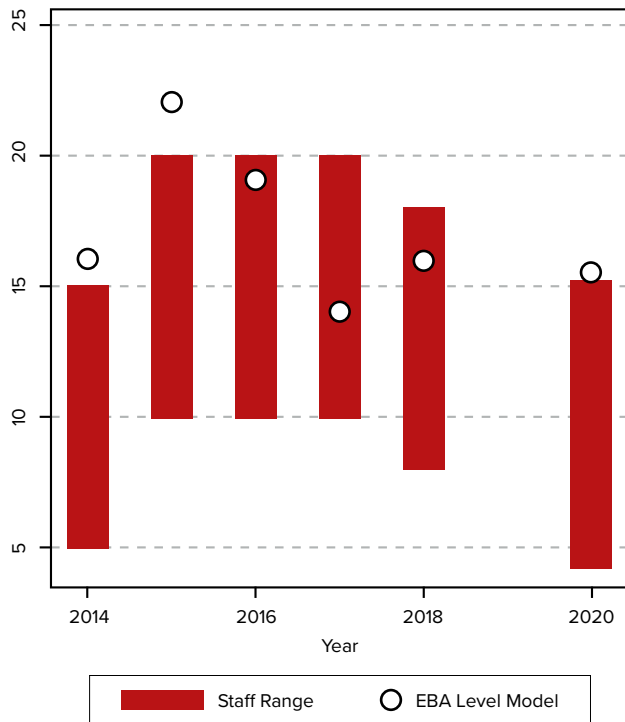
Note: EBA Level Model refers to IMF misalignment estimates for the REER in levels.
Staff Range takes into account misalignment estimates from
the EBA current account model.
Source: IMF Article IV reports (various years).

Figure 6: Manufacturing share of employment (index relative to Germany)

Note: Index of the share of employment in manufacturing relative to Germany.
Year = 0 refers to the first year the euro was introduced in each country.
Source: Author's calculations based on Eurostat data.

A natural consequence of Germany's competitive undervaluation is overvaluation and a loss of competitiveness for its trading partners. In light of the theory discussed above, we should expect to observe relative declines in the size of tradable industries in other euro area economies. Figure 6 shows the path of the manufacturing share of employment in selected countries relative to Germany. The index is normalised to equal one in the first year the euro was introduced in each country. As can be seen in Figure 6, with the exception of three newcomers, Latvia, Lithuania and Slovakia, manufacturing has shrunk relative to Germany in most euro economies.

Together, the evidence on REER misalignment and observed pattern of de-industrialisation suggest that Dutch-disease-like effects are already present. This is perhaps not surprising, as the euro has tilted the playing field in Germany's favour for two decades. What remains less clear, however, are the long-term consequences for the periphery economies. Here, our analysis will be strictly speculative and motivated by the theory discussed above.

One suggestive clue comes from measures of so-called 'economic complexity'. Figure 7 reports the change in countries' complexity ranking between 1999 and 2019. Intuitively, a country's complexity ranking captures the knowledge-intensity of its export basket. Improvements in the ranking thus serve as a bellwether of technological upgrading and productivity gains, while drops in the ranking suggest an economy is lagging behind. As I can see in Figure 7, with the exception of Greece (EL), the periphery economies have all fallen in the complexity ranking since the adoption of the euro. These trends are potentially alarming since measures of economic complexity have been shown to be correlated with economic growth.[13]

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13   See, for example, the seminal work on economic complexity, Hausmann and Hidalgo (2008). A detailed analysis of production complexity trends in the Euro Area is provided by Gräbner et al (2020).

6. GERMAN NEO-MERCANTILISM?
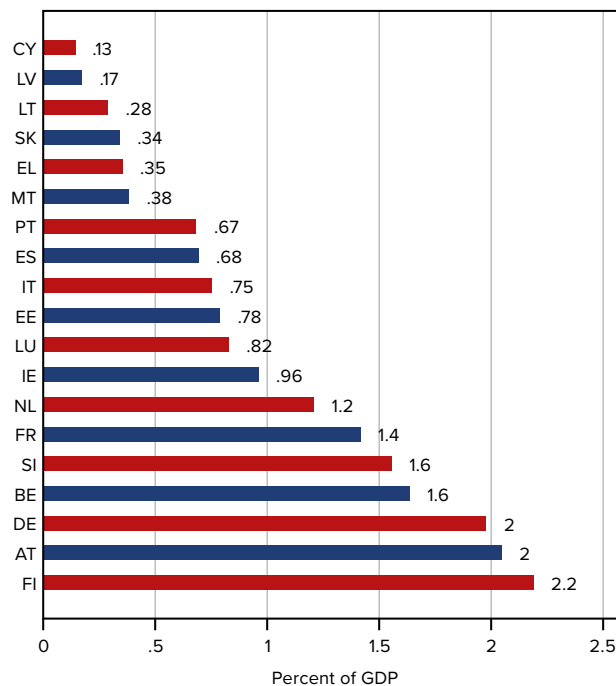
Figure 7: Economic complexity ranking (1999-2019)
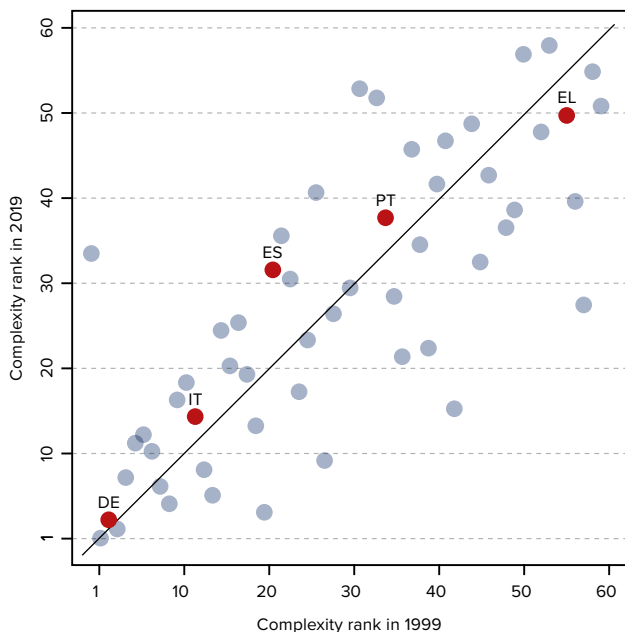
Note: Economic complexity rank in 2019 vs 1999. Selected countries.

Source: The Growth Lab at Harvard University (2019).

Figure 8: Private R&D expenditures (2008-2020) (percent of GDP)

Note: Spending on research and development in the 'business enterprise' sector as a percent of GDP. Average between 2008 and 2020.

Source: Author's calculations based on Eurostat data.

Another hint comes from private research and development expenditures. As mentioned above, Alfaro et al (2018) showed evidence that REER depreciation, by boosting exporter profitability, incentivises investment in R&D and thereby raises productivity. Figure 8 shows average private R&D expenditures as a percent of GDP in a sample of Euro Area economies between 2008 and 2020. R&D spending has clearly stagnated in the peripheral economies. We can also observe that average R&D has been lower in countries that have experienced greater REER appreciation since joining the euro (Figure 9). While this negative correlation is weak and clearly not causal in nature, it is qualitatively consistent with the empirical evidence and theory discussed above.

Figure 9: Average R&D vs REER appreciation
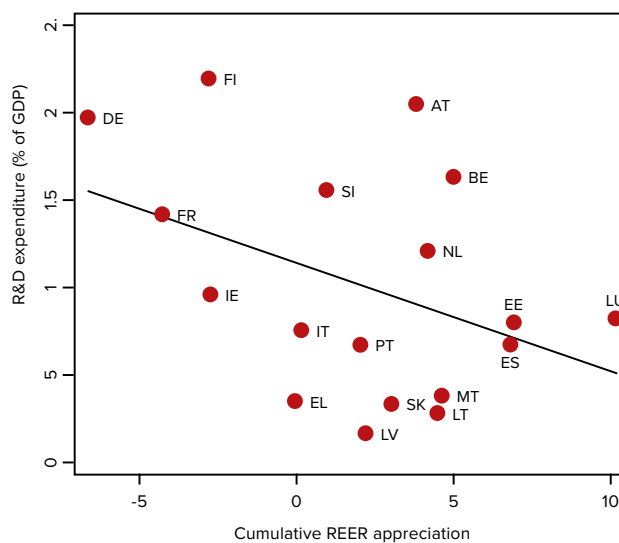
Note: Spending on research and development in the 'business enterprise' sector as a percent of GDP. Average between 2008 and 2020. CPI-based REER relative to Euro Area trading partners. Cumulative appreciation since euro adoption.

Source: Author's calculations based on Eurostat data.

7. MACROECONOMIC ADJUSTMENT MECHANISMS

Recent macroeconomic trends suggest that the euro has led to profound structural imbalances between Germany and the peripheral economies. In particular, I have argued that the large surpluses in Germany constitute a type of neo-mercantilism that, while boosting the competitiveness of German exports, is producing Dutch-disease-style de-industrialisation in the periphery economies. There are also tentative signs that this could leave scars and permanently retard economic growth. This calls into question the long-term sustainability of the euro, unless the need for adjustment is taken seriously.

Starting with a normative consideration, who should bear the burden of adjustment? The obvious candidate is Germany, especially since, as the analysis above implies, it has benefited disproportionately from the introduction of the euro and has imposed negative externalities on its trading partners.

The good news is that this should be a win-win for German consumers and the Euro Area at large. On Germany's side, rebalancing is achieved by increasing consumption of tradable goods, which essentially amounts to raising the real wages of German workers. This should stimulate export growth in the periphery countries and bring their respective REERs closer to a sustainable long-term equilibrium. German rebalancing is also arguably individually desirable from a development-strategy perspective. Indeed, most theoretical models featuring dynamic economies of scale predict that development policy should subsidise the tradable sector (for example through a REER undervaluation) during early stages of development and subsequently switch to encouraging domestic consumption and reaping the benefits of higher productivity.[14] As a wealthy and highly productive economy, Germany is arguably well within this latter stage of development.

> *German rebalancing is also arguably individually desirable from a development-strategy perspective. Indeed, most theoretical models featuring dynamic economies of scale predict that development policy should subsidise the tradable sector during early stages of development and subsequently switch to encouraging domestic consumption and reaping the benefits of higher productivity.*

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14   See, for example, Korinek and Servén (2016). Itskhoki and Moll (2019) obtain similar qualitative results.

7. MACROECONOMIC ADJUSTMENT MECHANISMS

Two potential mechanisms for achieving a German-led rebalancing are:

- **A fiscal expansion in Germany**. This would stimulate domestic demand, increasing consumption and putting upward pressure on wages. Since the aim should be to correct the REER undervaluation, the additional government purchases should be concentrated on domestic non-tradables. Increasing the generosity of social programmes or upgrading domestic infrastructure are natural candidates.

- **Wage policies.** Another avenue is to pursue policies that directly target wage growth. In this respect, increasing the share of workers covered by collective bargaining agreements would help. Similarly, the introduction in 2015 of Germany's first statutory minimum wage and the plan to increase the minimum wage further to €12 per hour are excellent steps in the right direction. This is an attractive option, as studies suggest that raising the minimum wage has negligible employment impacts but large effects on wages at the bottom of the income distribution.[15] There is also evidence that Germany's minimum wage has increased total productivity by reallocating workers from less productive to more productive firms.[16]

Germany, however, does not need to bear the full burden of adjustment. Nor does the adjustment mechanism necessarily need to exclusively address the external imbalances and REER misalignments. Instead, European policymakers could target the industrial productivity divergences directly. Well-designed industrial policies targeting lagging industries in the periphery could help undo some of the harm done by the two decades of imbalances. In broad strokes, an expert committee could identify which industries and regions have been most impacted by REER overvaluation and on this basis recommend subsidies aimed at boosting production and dynamic comparative advantage.

Although industrial policy has fallen out of favour among economists since the 1980s, in recent years the pendulum has begun to swing back, with the release of a string of new research papers showing their potential positive effects.[17] Much uncertainty remains about how to best design effective industrial policies, but a co-ordinated system of subsidies and incentives aimed at boosting industrial development in periphery economies is worth experimenting with. Industry-level policy interventions are also complementary to the necessary macroeconomic adjustments, especially since the latter may produce sectoral distortions that could be avoided by more precisely targeted subsidies.[18]

Returning to the stylised macroeconomic framework introduced above, we can conceptualise the effects of industrial policy targeting tradable sectors in peripheral economies as an upward shift in the relative productivity or *RP* curve. Subsidies or other interventions boosting profitability in tradable industries effectively increase the productivity of labour employed in those sectors, raising wages and employment. This is depicted in Panel (a) of Figure 10. Point A represents the current situation in a peripheral economy, characterised by a low share of workers employed in tradable industries. The new equilibrium after the introduction of industrial policies occurs at point B. As we can see in Figure 10, the REER appreciates and the tradable sector expands.

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> *A co-ordinated system of subsidies and incentives aimed at boosting industrial development in periphery economies is worth experimenting with.*
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> **"**

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15   See Dube (2019) for a comprehensive review of the international evidence.

16   See Dustmann, Lindner, Schönberg, Umkehrer and von Berge (2021).

17   Most recently, several studies on the impacts of the Heavy Chemical Industry (HCI) drive in South Korea have shown that industrial policies increased the dynamic comparative advantage of targeted industries, had large multiplier effects through input-output networks on the rest of the economy, and were responsible for significant improvements in welfare (see Lane 2021; Kim et al 2021; Choi and Levchenko 2021).

18   Guzman, Ocampo, and Stiglitz (2018) have referred to this as promoting a system of 'multiple effective real exchange rates', allowing policymakers to directly target the external competitiveness of industries with high productivity spillovers.

Figure 10: Structural effects of industrial policy and financial regulation

(a) Effect of industrial policy (IP)

structural change

(b) Effect of IP + financial regula

combined effect
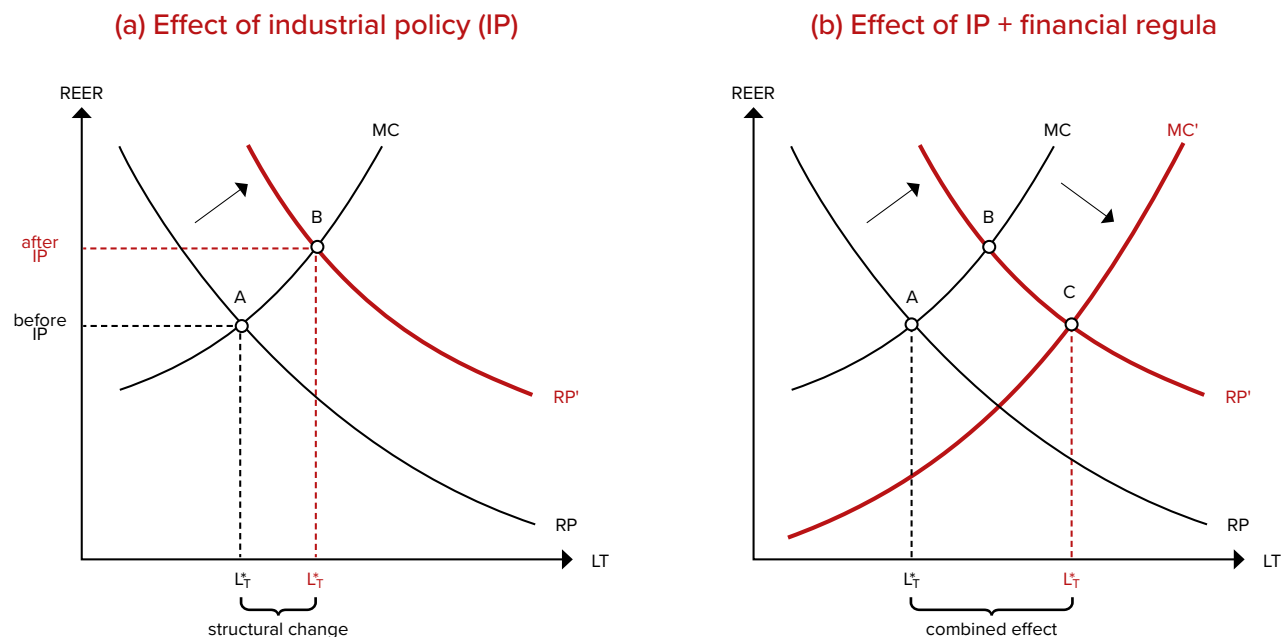
The scenarios outlined in these policy suggestions are intended to address the long-term structural consequences of the euro area imbalances but may not be sufficient to prevent new imbalances from arising in the future. To minimise future imbalances, the euro area's macroeconomic policy framework, and in particular its 'one size fits all' monetary policy regime, needs to evolve. To accomplish this, some market-based compromise on capital mobility is not only desirable, but also arguably unavoidable.

To illustrate the impact of some types of regulation on capital mobility, consider Panel (b) of Figure 10. Here, I show the combined effects of targeted industrial policy and regulating capital flows to the euro area periphery. Regulating capital flows would act like the initial shock of joining the euro, only in reverse. This is represented by a downward shift in the market clearing *MC* curve, to *MC'*. The hypothetical scenario with both policies is shown by point C. As I can see in Figure 10, the boost to tradable industries is bigger when both policies work together and complement each other.

One possibility is a multilateral system regulating capital flows between euro area economies. These could consist of a set of taxes on cross-border financial transactions aimed at discouraging flows to economies with REER overvaluations. By tuning these taxes based on domestic macroeconomic conditions, these would act as a surrogate for an independent monetary policy. The broad outlines of this hypothetical system are as follows:

- **Measurement of imbalances.** A technical committee would be charged with monitoring and measuring external imbalances and REER misalignments. These would be estimated in line with best practices from the empirical literature. In addition, the committee would be responsible for assessing the industrial consequences of the misalignments on each affected economy.

- **Multilateral equity principle.** The measurement of misalignments and assessments of their costs should take into account normative principles based on multilateral equity. This requires recognising which member countries are generating externalities and who is most affected. For example, taxes could be levied in order to focus the adjustment on surplus economies proportionally to the extent of implied misalignment and negative external costs.

- **Long-term development principle.** The external adjustments should be consistent with long-run economic development. In practice, this means that countries with different levels of industrial development should bear different burdens of adjustment. For example, taxes should react more strongly to surpluses generated by relatively high-income economies. Conversely, greater leeway should be granted to relatively lower-income economies.

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This policy study provides a macro-development perspective on the euro area imbalances. Drawing on insights from development economics, the author provides an overview of the link between external competitiveness, current account imbalances and an economy's long-term productivity growth. The study argues that recent macroeconomic trends in the Euro Area suggest that Germany's current account surpluses are responsible for a 'Dutch disease'-style de-industrialisation in periphery economies. There are also tentative signs that the loss of competitiveness may leave lasting scars on these economies' levels of productivity. The study concludes with some tentative policy recommendations to help address these structural imbalances. On the core country level, these include adopting an expansionary fiscal stance and pursuing wage growth. On the European level, re-engineering industrial policy and the use of targeted subsidies could re-align the real effective exchange rates of core and periphery countries and contribute to solving the problem.