Mercantilism in a Liberal World Order:  
The Origins of Persistent Current Account Imbalances

Mark Manger  
University of Toronto  
mark.manger@utoronto.ca

Thomas Sattler  
Université de Genève  
thomas.sattler@unige.ch

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Abstract

Why do some countries run persistent current account surpluses? Why do others run deficits, often over decades, leading to enduring global financial imbalances? Such persistent imbalances are the root cause of many financial crises and a major source of international economic conflict. We propose that differences in wage-bargaining institutions explain a large share of imbalances through their effect on the trade balance. In countries with coordinated wage bargaining, wage growth can be restrained to ensure competitiveness, leading to long-term trade surpluses. We estimate the contribution of these institutions to trade balances in OECD member countries since 1977 and find ample support for our hypothesis. Although the introduction of the euro has clearly exacerbated the problem, no substantial difference otherwise exists between fixed and floating exchange rates. In other words, internal adjustment in surplus countries trumps external adjustment by deficit countries.

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1 Introduction

Why do some countries run persistent current account surpluses? Why do others run deficits, often over decades, leading to enduring global imbalances?\(^1\) Such imbalances are a long-standing source of political friction between states (Simmons, 1997). Most of today’s surplus and deficit countries have prominently starred in the same roles since the 1960s. Examples of such frictions are the debates about the American “exorbitant privilege” in the 1960s, the “locomotive conflict” within the G7 in the 1970s, and the Louvre and Plaza Accords in the 1980s.\(^2\)

Imbalances remain politically highly salient: In April 2016, the US Treasury published its first monitoring report mandated as part of implementing the Trade Facilitation and Trade Enforcement Act of 2015. One of three criteria is a “current account surplus larger than 3% of that economy’s GDP [gross domestic product],” putting China, Japan, Germany, and Korea on a monitoring list (US Treasury, 2016, 1). The implicit charge is that these countries are pursuing a “mercantilist strategy,” a point repeatedly made by commentators like Paul Krugman (2016) and Martin Wolf (2014\(^b\)).

What is at stake in this debate? In financial terms, capital exported from surplus countries drives down interest rates in the deficit countries, a likely cause of financial crises (Bernanke, 2005; Frieden and Chinn, 2012; Caballero, Farhi and Gourinchas, 2008; Copelovitch and Singer, 2016). Yet more relevant to most voters and hence politicians is a different perception: that “mercantilists” pursue unfair trade policies, that they support their manufacturing sector where workers have stable jobs and earnings that have been lost in the United States and other deficit countries

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\(^1\)A current account deficit means that a country spends more on imports and interest payments than it earns from exports and investments abroad, so it accumulates international liabilities. A surplus means that a country earns more from exports and investments than it spends on imports and interest payments and, therefore, accumulates claims on deficit countries.

\(^2\)The “exorbitant privilege,” a term coined by Valérie Giscard d’Estaing while French finance minister in 1965, refers to the ability of the United States to finance current account deficits by issuing dollars, the main reserve currency (Eichengreen, 2011, 4). This growing conflict over current accounts led to the demise of the Bretton Woods system and prompted the creation of the G7 in the 1970s to address external imbalances (Eichengreen, 1996, ch. 4). Shortly thereafter, the Bonn G7 summit was the stage for the conflict over the “locomotive strategy” in 1978, when the United States called upon Germany and Japan to follow more expansionary policies to decrease their large external surpluses (G7 1978, esp. points 3 and 20). The 1985 Plaza Accord was a concerted effort by the major powers to depreciate the US dollar. This measure was taken in response to the growing US trade deficit, which spurred protectionist tendencies in Congress to save American jobs (Eichengreen 1996, ch. 5).
Persistent surpluses are seen as an indicator of a policy that beggars neighbours and redistributes export earnings at the expense of others. Arguments over current account imbalances, thus, are conflicts over the distributional consequences of globalization.

And yet, in stark contrast to the political and economic importance of persistent imbalances, our understanding of their causes is limited. Prominent economic theories point to factors that generate short- and medium-term fluctuations in current accounts, but they do not answer the fundamental question: why have major countries remained either in deficit or in surplus for most of the post-war period. This lack of understanding distorts the public debate and hobbles effective policy choice.

In this paper, we shed light on the domestic origins of these persistent surpluses and deficits. We offer an institutional explanation that highlights the variations in wage bargaining across countries (Hall and Soskice, 2001; Hancké, 2009; Iversen, Pontusson and Soskice, 2000). Our analysis shows that wage bargaining that is centralized along company or industry lines and coordinated across economic sectors systematically pushes a country towards surpluses, while decentralized bargaining leads a country to run deficits. Our estimations predict that countries with the least centralized bargaining systems have a long-term trade deficit of –2.47 percent of GDP. By contrast, the most centralized system yields a predicted long-term trade surplus of +3.5 percent of GDP. This variation occurs because centralized countries experience a systematically slower appreciation of their real exchange rate, which then translates into trade and current account surpluses. A case study of Germany after its reunification illustrates this mechanism.

We show that this mechanism holds, irrespective of the exchange rate regime in place—that is, whether countries fix or float their currencies or join the euro. Although its effects are stronger when the exchange rate regime prevents “competitive devaluations” —findings consistent with analyses of the eurozone crisis (Höpner and Lutter, 2014; Johnston, Hancké and Pant, 2014; Johnston and Regan, 2016)—the underlying problems are not just defects of the currency union. Instead, the tendency towards deficits or surpluses in countries with different wage bargaining systems has existed throughout the whole post-Bretton Woods era.
Our study makes several contributions and has important policy implications. First, we account for long-term patterns in international economic outcomes that present a challenge for standard macroeconomic theory. Second, we show that much of what is sometimes labeled a mercantilist strategy really has its origins in the domestic political-institutional variation across countries. Finally, we clarify that an automatic resolution of global imbalances is unlikely as long as these institutional differences continue to exist. Solutions need to take into account their importance and persistent hectoring against alleged government policy (e.g. Wolf, 2014a) misses the mark.

2 Patterns of Current Account Imbalances

Our analysis begins with the finding that the external imbalances of many countries are not a new phenomenon but, rather, have persisted over decades. Even though the balance of payments is one of the most central concepts in international economic affairs, current accounts exhibit long-term empirical patterns that are difficult to reconcile with existing theories.

2.1 Current Accounts since Bretton Woods

A striking, yet unexplored pattern of current accounts is the persistence of imbalances over many decades. A persistent imbalance means that a country has been almost permanently in deficit throughout the postwar period, while another has been quite consistently in surplus. Figure 1 illustrates this pattern in Australia and Japan: Australia has, for practical purposes, never achieved a current account surplus, except in 1974 and 1975, when resource prices surged unexpectedly due to the first oil shock. Meanwhile, Japan has been consistently in surplus since 1981, with a brief interruption after a surge of fossil fuel imports following the shutdown of its nuclear plants in 2011.

Such extreme values are not peculiar to these two economies, but rather a characteristic of many industrialized countries, as Figure 2 shows. Portugal, New Zealand, Greece, Canada, the UK and the US are other examples of long-term deficit economies. Germany, the Netherlands,
and Switzerland are long-term surplus countries. Finally, some show regular ups and downs, for example, Italy and France, while the Scandinavian countries switched from long-term deficit to long-term surplus after the 1980s.

It is puzzling that some major economies have a “built-in” tendency to run either a deficit or a surplus for such long periods. Although the existence of imbalances per se is not surprising, we would expect imbalances to adjust eventually via the exchange rate or relative prices. Accordingly, most existing research has focused on factors that explain short- or medium-term term variation, but not the kind of long-term patterns that our figures reveal.

2.2 Current Knowledge

Work in economics has focused on four arguments. The “twin deficits” hypothesis suggests that large public deficits coincide with current account deficits (Volcker, 1987). The large holdings of foreign exchange reserves by developing countries have raised the question whether these policies are primarily export-promotion through undervaluation (Dooley, Folkerts-Landau and Garber,
Figure 2: Current account balances within and between OECD countries
—with reserves as a byproduct—or whether reserves themselves are the objective as a means of self-insurance (Aizenman and Lee, 2008; Jeanne and Rancière, 2008). A related argument revolves around financial market imperfections: Although people in fast-growing emerging markets seek a safe store of value, investment opportunities are not keeping up with savings because of associated risks (Bernanke, 2005). In consequence, capital flows to locations that produce safe assets (Caballero, Farhi and Gourinchas, 2008; Kraay and Ventura, 2000).  

Although these studies point to important factors, they are unable to explain the long-term, cross-country variation that we see in Figures 1 and 2. Current account balances tend to change very little in their relative levels over time. Meanwhile, fiscal deficits have varied considerably in all countries. Reserve accumulation for insurance purposes and financialization are rather new phenomena that arose during the 1990s. Even more slowly changing variables like demographic structure offer little explanatory power (Chinn and Ito, 2007; Chinn and Prasad, 2003).

To explain these long-standing patterns, we suggest that specific institutional features allow some countries to become systematically more competitive in tradables production, with fundamental effects on their current accounts. Accordingly, our work relates to the comparative economy literature examining the divergent growth and inflation histories of developed countries (Hall and Soskice, 2001; Hancké, 2009; Iversen, Pontusson and Soskice, 2000). To the extent that this literature explores the international implications of institutions, it is mostly concerned with export dynamics within the European Monetary Union (EMU) (Hancké, 2013; Johnston, Hancké and Pant, 2014; Johnston and Regan, 2016).

Our approach subsumes these works but has a much broader scope. While the comparative political economy literature offers a compelling account of the different growth and inflation performance in particular of Northern Europe rather than Southern Europe, it does not explain why Anglo-Saxon countries, with their superior growth but also low inflation rates, nonetheless run persistent external deficits. Moreover, although the euro has exacerbated the problem, imbalances

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3 The Appendix reviews the economic explanations in greater detail.
4 Figure 2 is an updated and expanded version of the graph presented in Ventura (2003).
5 Large financial flows notwithstanding, the current account remains largely driven by the trade balance, and is treated as equivalent in many textbooks (see, e.g., Krugman and Obstfeld, 1997, 308).
arise even when countries have nominal exchange rate depreciation at their disposal. In the following, we offer a theoretical argument to account for these puzzles.

3 Theory

Our theoretical argument centers on institutional differences between deficit and surplus countries that shape collective wage bargaining. The comparative political economy literature identifies two intimately linked features of a wage bargaining system that are relevant for the trade balance: the centralization and demarcation of unions and employer organizations that specify whether the interests of firms and workers coincide; and the coordination of sectoral wage agreements across the whole economy. Clearly demarcated labor market institutions are either enterprise unions bargaining with management on behalf of all firm employees (as in, e.g., Japan), or industry-wide confederations (as in, e.g., Germany) that bargain for wage increases for a whole industry with employer “peak” federations, as opposed to the craft- and company-specific unions in decentralized systems (Hancké, 2013). Coordinated wage bargaining means that unions can enforce wage settlements across sectors (Calmfors and Driffield, 1988). Following Iversen (1999), we refer in this paper to the combination of external and internal demarcation of bargaining as centralization.

3.1 Wage Bargaining, Demarcation and Competitiveness

The nature of wage bargaining matters for the trade account through its impact on cost competitiveness of firms in the tradable sector—that is, firms that compete in the domestic market against imports from abroad or those that sell their products on foreign markets. Wage bargaining institutions influence the cost competitiveness of firms primarily because it determines whether firm and union interests overlap. A clear demarcation along enterprise or industry lines, when combined with union authority to enforce agreements for all workers in the relevant unit—“centralized bargaining” in Iversen’s (1999, 53) terminology—offers an important advantage: with such institutions, firms can achieve cost competitiveness by ensuring that wage increases develop in line with
productivity gains. The firm remains competitive because it does not need to raise prices when productivity fully offsets labor costs.

In such a setting, wage settlements will converge on a division of productivity gains between workers and firms. Firms will have an incentive to inform unions about productivity improvements, and they in turn will adapt their wage demands to ensure cost competitiveness, with the ultimate aim of protecting employment in the industry. In the tradable sector, wages will therefore rise only slowly relative to the corresponding sector or industry in other countries, and employment in the tradable sector will either be maintained or grow. By contrast, if the interests of unions and management are not closely aligned, unions will not internalize the consequences of excessive wage settlements, and firms will price themselves out of their markets (Calmfors, 1993, 163).

A necessary assumption for this logic is that firms in the tradable sector have limited pricing power when they sell into foreign markets and receive information about the prices of their competitors. To be sure, small manufacturing firms in Germany, Sweden, and Japan sometimes have a near-monopoly in highly specialized goods, but the demand for automobiles, machinery, and chemicals is considerably more price elastic. Furthermore, firms can directly observe their own productivity gains, so, in combination, they can assess how much wages can be raised without making their own products uncompetitive. Nonetheless, such attempts would be futile without coordination of wage settlements across sectors and other impediments to labor movement.

### 3.2 Wage Bargaining, Coordination and Sectoral Movement

The bargain described above addresses the problem of wage costs for employers and job security for workers, but only within the bargaining unit. A firm, industry, or even whole sector may address its own wage costs in relation to productivity gains, but all such efforts are in vain if wages and prices rise elsewhere in the economy. Most importantly, wage moderation in the tradable sector works only if wage increases in this sector become a ceiling for wages in the whole economy. Prices elsewhere, whether of services or of goods, also feed indirectly as the cost of inputs into the prices of export products. Wage increases in the public sector may put an additional fiscal burden
on firms and workers, who may in turn be inclined to ask for higher wages. In this situation, coordination of wage bargaining across sectors helps to control costs in the whole economy.

Coordination of wage settlements across sectors means that wage increases in the nontradable and public sectors do not exceed those in the tradable sector. It is particularly important when wages in the nontradable sector are rising because of growing government spending, an expansion of public sector employment, or a demand shock in the form of, for example, a credit-driven expansion of construction and real estate prices. By imposing a common ceiling, coordination helps avoid large divergence in wage increases. Such coordination is prevalent in Northern Europe, the Benelux (Belgium, Netherlands, and Luxembourg) countries, Austria, Germany, Japan, and Korea. It dominated Irish wage bargaining until the eurozone crisis, but is largely lacking in other English-speaking countries, aside from brief attempts in Canada and the United Kingdom in the late 1970s, and nearly as uncommon in Southern Europe (Visser, 2015).

Coordination is furthermore crucial for wage moderation in the tradable sector and hence cost competitiveness because it discourages labor movement across sectors. After all, if wages in the tradable sector are held in check, workers might choose to leave for other sectors of the economy. This would limit the supply of labor in the tradable sector and exacerbate the very problem that wage moderation is meant to solve. Coordinated wage increases make such inter-sectoral movement far less attractive for workers. An economy with tight sectoral coordination could still experience growth in the nontradable sector by adding workers, but this would not affect the cost base of the tradable sector.

Coordination therefore has two effects on the trade balance. First, it limits real exchange rate appreciation. All else being equal, the prices of tradable goods from coordinated-wage-bargaining countries will grow more slowly than those of countries with uncoordinated institutions. This means that the effective real exchange rate, defined as the cost of an equal basket of consumption (i.e., purchasing power parity, or PPP) divided by the nominal exchange rate and weighted by the country’s trade partners, will appreciate only slowly. Because an appreciation in the real exchange rate reduces the cost competitiveness of exporting and import-competing firms, a slow appreciation
in relation to trade partners will result in a positive shift in the trade balance.

Second, if wages in the nontradable sector and thus the prices of these nontradable services rose rapidly, the real incomes of workers in the tradable sector would be negatively affected, making them less inclined to accept wage moderation.\(^6\) By protecting the real incomes of workers in the tradable sector, coordination helps maintain competitiveness and ultimately boosts the current account surplus.

Although we are primarily concerned with the immediate effect of domestic institutions on current accounts, this argument has important implications for the wider debate about the distribu-
tional consequences of globalization through structural change. Although all developed countries experience structural change away from manufacturing and toward services, countries with a coordinated, centralized wage-bargaining system will retain a relatively larger share of manufacturing. The political benefits are clear, in particular for countries with strong left-leaning parties, which win votes among manufacturing workers. Political conflict, though, is not averted; it is merely shifted to the international level.

### 3.3 Competitiveness and the Exchange Rate Regime

How does the nominal exchange rate regime interfere with this mechanism? In addition to relative prices, the nominal exchange rate is a key component of the real exchange rate. If countries with decentralized bargaining institutions have floating currencies, as is true of many of them, then a gradual depreciation of the nominal rate vis-à-vis those of countries with coordinated institutions would offset the negative effect of decentralized bargaining on the real exchange rate through relative prices.

The effect of wage bargaining on current accounts can be expected to persist even with flexible exchange rates for several reasons. A trade deficit could induce depreciation because demand for

\(^6\)Existing analyses of the eurozone crisis (e.g., Baccaro and Simoni, 2010; Johnston, Hancké and Pant, 2014) have (correctly) diagnosed this problem in some countries in Southern Europe: wages rose quickly in some nontradable sectors, e.g., construction, drawing workers to these sectors, while prices rose and the real exchange rate appreciated quickly.
the currency of the deficit country decreases when fewer consumers want to buy goods from that country. But if current account deficits are matched by an equivalent inflow of capital through the capital account, which can easily counteract the depreciation tendencies, in particular if the deficit countries, such as the United States, the United Kingdom, Australia, and Canada, offer safe financial assets and sophisticated financial markets (Caballero, 2006). In other words, currencies of deficit countries can be in high demand and, hence, depreciation that equalizes the effect of wage bargaining may not be forthcoming.

Nonetheless, the effect of wage bargaining on current accounts may be more pronounced in fixed-exchange-rate regimes. Fixed exchange rates are a widespread phenomenon because they reduce transaction costs in international trade (Frieden, 2002), help to solve credibility problems (Bearce and Hallerberg, 2011; Sattler and Walter, 2010) and stabilize external liabilities (Walter, 2013). Although most fixed-rate regimes in the post-war period included escape clauses that provide for the possibility of external adjustment (Bodea, 2015),7 invoking the escape clause comes with substantial political costs. Devaluations, for instance, harm international reputation (Gray, 2013) or are interpreted as a signal of policymaker incompetence (Stein and Streb, 2004). Politicians, therefore, devalue the currency only when political pressure in the tradable sector mounts and the gains from competitiveness exceed these costs.

The possibility of realignment disappears entirely in a currency union. By definition, unions do not include escape clauses that provide the legal basis for temporary opt-outs or other forms of realignment. We should therefore see the strongest effect of wage moderation by far in a currency union, followed by fixed-exchange-rate regimes.

3.4 Empirical Predictions

Wage-bargaining centralization implies a tendency toward a trade surplus, as expressed in Hypothesis 1. By extension, as expressed in Hypothesis 2, these countries are also more likely to

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7The classic example is the Bretton Woods system with its “fixed-but-adjustable” exchange rates, in which devaluations were allowed in case of a “fundamental disequilibrium” (IMF Charter, Schedule C.6). Similarly, the European Monetary System beginning in 1979 also allowed for devaluations when countries faced large imbalances.
sustain a current account surplus, although we expect the relationship to be less strong, because the profitability of overseas investments directly affects the current account, but only very indirectly the trade account via exporter profits. Moreover, countries that intervene in the foreign exchange market can achieve a current account surplus, at least temporarily.

**Hypothesis 1** Countries with greater wage-bargaining centralization are more likely to sustain a trade surplus in the long run.

**Hypothesis 2** Countries with greater wage-bargaining centralization are more likely to sustain a current account surplus, but the relationship should be weaker than for the trade balance.

**Hypothesis 3** The more rigid the exchange rate regime, the stronger the effect of wage-bargaining centralization on the long-run trade balance and the current account.

### 4 Analysis

We focus our analysis on the 20 largest member countries of the Organization for Economic Co-operation and Development (OECD) in the period after 1976, when the Bretton Woods financial regime officially ended with the ratification of the Jamaica Accord and floating exchange rates were permitted by the International Monetary Fund (IMF), and end our analysis in 2007.\(^8\) The endpoint is due to data constraints on several control variables.

#### 4.1 Data

We first examine the trade balance, that is, the difference between exports and imports, which is the key component of the current account. The mechanism that we outline above primarily affects the relative competitiveness of production and therefore export and import activities of a country. We then show that these mechanisms translate into the current account as a whole, which is the sum

\(^8\)Following Iversen (1999, 151-152) we exclude Austria because its wage-setting is coordinated, but the distribution of wage increases throughout the economy is highly particularistic.
of the trade balance and net foreign transfers. For both, we use the ratio of trade balance (TB) and current account (CU) to GDP. All data on these variables are from the IMF Balance-of-Payments Statistics (BOPS) and selected national sources.

Our central explanatory variable is wage bargaining centralization. The most frequently used measure of centralization is from Iversen (1999), a composite that rates union confederations based on whether they have strong external or internal cleavages that lead to conflict and competition. A closely related measure is made available by Visser (2015) at the Amsterdam Institute for Advanced Labour Studies (AIAS) who provides a broad index for all OECD and European Union (EU) as well as several other industrialized countries in the ICTWSS dataset. We rely primarily on this different indicator because of its coverage. Both are highly correlated ($\rho = 0.79$). Alternatively, we use the Visser measure for coordination directly, but our results are virtually identical. Centralization and coordination are strongly correlated, too ($\rho = 0.58$ to 0.71, depending on the year). In other words, centralization and coordination go hand-in-hand, and it provides little benefit for unions or employers to maintain one without the other: without sufficient centralization, unions will compete and coordination is difficult, while centralization has few economic benefits for unions in the absence of coordination.\footnote{In fact, only one country has low centralization and high coordination scores—Japan—but we believe that this coding is erroneously low. It does not sufficiently appreciate that Japanese labor law favors enterprise unions, and that on average more than three-quarters of employees at unionized firms are union members (Flath, 2005, 325–326).}

We also use two other indicators: the unionization rate, measured as union members as a proportion of wage earners in employment (Visser, 2015, 26), and the level of wage bargaining that we call peak (called “cwb” in the ICTWSS data) which denotes the “actual” level at which bargaining takes places, from peak labour organizations to the firm level (Visser, 2015, 15). We expect unionization to have effects similar to those of centralization because it is a precondition of the latter. Meanwhile peak should not have an effect because it does not matter functionally at which level the bargaining takes place as long as it is binding and coordinated.

The empirical models include a variety of control variables that previous research identifies as important determinants of the current account and its components (Chinn and Ito, 2007; Chinn
Table 1: Summary statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
<th>N</th>
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</thead>
<tbody>
<tr>
<td>Trade balance</td>
<td>0.916</td>
<td>4.817</td>
<td>-20.201</td>
<td>17.841</td>
<td>651</td>
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<td>Current account</td>
<td>-0.264</td>
<td>4.435</td>
<td>-14.624</td>
<td>17.106</td>
<td>651</td>
</tr>
<tr>
<td>Centralization</td>
<td>3.656</td>
<td>1.297</td>
<td>1.253</td>
<td>5.482</td>
<td>620</td>
</tr>
<tr>
<td>Coordination</td>
<td>3.188</td>
<td>1.121</td>
<td>1</td>
<td>4.677</td>
<td>651</td>
</tr>
<tr>
<td>Peak</td>
<td>3.112</td>
<td>1.107</td>
<td>1</td>
<td>5.331</td>
<td>651</td>
</tr>
<tr>
<td>Unionization</td>
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<td>18.803</td>
<td>11.48</td>
<td>79.634</td>
<td>651</td>
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<tr>
<td>CoordXUnion</td>
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<td>2.239</td>
<td>0</td>
<td>7.316</td>
<td>651</td>
</tr>
<tr>
<td>Fiscal balance</td>
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<td>4.367</td>
<td>-13.371</td>
<td>20.932</td>
<td>651</td>
</tr>
<tr>
<td>Stock market capitalization</td>
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<td>48.639</td>
<td>-53.163</td>
<td>261.991</td>
<td>651</td>
</tr>
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<td>Financial intermediation</td>
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<td>1.577</td>
<td>-3.653</td>
<td>7.797</td>
<td>651</td>
</tr>
<tr>
<td>Dependency ratio (old)</td>
<td>0</td>
<td>3.505</td>
<td>-8.887</td>
<td>10.709</td>
<td>651</td>
</tr>
<tr>
<td>Dependency ratio (young)</td>
<td>0</td>
<td>5.645</td>
<td>-9.053</td>
<td>23.033</td>
<td>651</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>0</td>
<td>7.061</td>
<td>-16.107</td>
<td>25.556</td>
<td>651</td>
</tr>
<tr>
<td>Growth</td>
<td>0</td>
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<td>-10.24</td>
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<td>651</td>
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<tr>
<td>Exchange rate regime</td>
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<td>-1.21</td>
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<td>651</td>
</tr>
<tr>
<td>Fixed exchange rate</td>
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<td>0.466</td>
<td>0</td>
<td>1</td>
<td>651</td>
</tr>
<tr>
<td>Euro</td>
<td>0.149</td>
<td>0.356</td>
<td>0</td>
<td>1</td>
<td>651</td>
</tr>
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</table>

and Prasad, 2003). This research finds that the fiscal balance/GDP is an important determinant of the current account, as greater fiscal deficits are generally associated with greater current account deficits. Data on fiscal balances comes from the OECD and national accounts. To capture differences in demographic structures, we use two variables. Dependency ratio (young) is the share of people under age 15 compared to those between 15 and 65. Dependency ratio (old) is the share of people over 65 compared to those between 15 and 65. High dependency rates should lower the savings rate and hence the current account balance, because old and young individuals are more likely to spend more rather than save (Ando and Modigliani, 1963). Because the share of the working age population has already peaked in industrialized countries, there may be a general downward pressure on current accounts. As measures of financial deepening, we use the values of stock market capitalization and financial intermediation as a share of GDP. We also include GDP per capita to control for the possibility that capital flows “downhill” from rich to poor countries to achieve greater returns in a relatively capital-scarce setting (Abiad, Leigh and Mody, 2009).

The economic analyses also identify the initial stock of net foreign assets/GDP as one of the
strongest determinants of the current account. Net foreign assets are the difference between foreign assets of domestic residents and domestic assets owned by foreigners. Foreign assets generate income from abroad, while foreign liabilities require the payment of interest to parties abroad. Net foreign assets are equivalent to the sum of past current account balances. This variable only enters the current account regressions because it affects the current account through net transfers and not the trade balance.

In the basic regressions, we also include a variable for flexible exchange rates to control for the exchange rate regime. We use the coarse classification of de facto exchange rate regimes by Ilzetzki, Reinhart and Rogoff (2008), which classifies regimes in four categories that range from fully fixed to fully flexible regimes.\textsuperscript{10} For further analyses of the interaction between wage bargaining and exchange rate regimes, we also construct binary indicators that distinguish fixed and adjustable fixed rates (categories 1 and 2) from managed and fully flexible exchange rates (categories 3 and 4); and fixed rates (category 1) from all others. We also use a binary variable that reflects membership in the eurozone. Summary statistics are shown in Table 1.

4.2 Hierarchical model

Our empirical analysis faces two challenges. First, we are primarily concerned with long-term variation across countries. In other words, we want to explain why some countries are notorious deficit countries over many decades, others are notorious surplus countries, and still others fluctuate between deficits and surpluses. At the same time, we need to take into account and control for the variables discussed above that produce temporal variation in the current account and that are potentially correlated with wage bargaining institutions. As the previous economics literature has shown, the effect of these variables on current accounts can be substantial. Second, and related to the first concern, wage bargaining institutions vary only little over time, precluding the use of standard fixed-effects models for pooled country time series data. Ignoring country-specific constants, however, may be problematic because the slowly-moving institutional variable would

\textsuperscript{10}The fifth category, freely falling exchange rates, does not occur in our dataset.
pick up country-specific effects not directly related to our variable of interest.

To address these issues, we use a hierarchical empirical model that exploits the multi-level nature of our data (Gelman and Hill, 2007; Kedar and Shively, 2005). This model accounts for the fact that wage bargaining institutions are (almost) time-invariant, while the most important control variables vary within countries over time. In this approach, the time dimension within a country and and the cross-country dimension are treated as different levels. We opt for a “partial pooling” compromise (Gelman and Hill, 2007, ch. 12.2-12.3), which fixes the coefficient on the time-varying variables across countries, but allows that the coefficients on the key variables, notably the intercept and the exchange rate regime, to vary with wage bargaining. We chose the partial pooling approach because our theory primarily motivates varying coefficients for the constant and the exchange rate regime and because the number of observations within countries is small compared to other multilevel studies.

In the first step, we use a varying-intercept model to estimate the effect of wage-bargaining centralization:

\[
y_t = \alpha_{j[t]} + \beta X_t + \varepsilon_t, \quad \text{for } t = 1977, ..., 2007;
\]

\[
\alpha_j = \gamma_0 + \gamma_1 C_j + \eta_j, \quad \text{for } j = AUS, ..., USA; \quad (1)
\]

where \(y_t\) is either the trade balance or the current account, \(X_t\) is a vector with time-varying control variables described above, and \(C_j\) is wage-bargaining centralization. In the second step, we use a varying-intercept, varying-coefficient model to estimate the effect of wage-bargaining centralization conditional on the exchange rate regime:

\[
y_t = \alpha_{1j[t]} + \alpha_{2j[t]} \text{Fix}_t + \beta X_t + \varepsilon_t, \quad \text{for } t = 1977, ..., 2007;
\]

\[
\alpha_{1j} = \gamma_0^{\alpha_1} + \gamma_1^{\alpha_1} C_j + \eta_j^{\alpha_1},
\]

\[
\alpha_{2j} = \gamma_0^{\alpha_2} + \gamma_1^{\alpha_2} C_j + \eta_j^{\alpha_2}, \quad \text{for } j = AUS, ..., USA; \quad (2)
\]
where Fix$_t$ is a variable indicating how fixed the exchange rate is.

For additional analyses, we also use a two-step estimation procedure based on alternative modeling assumptions: We estimate the effect of the time-variant variable using a standard pooled, country-fixed-effects model. We then regress the estimated, country-specific constants on the wage-bargaining variable using the FGLS estimator proposed by Lewis and Linzer (2005). These results, all of which lead to similar conclusions, are shown in the Appendix.

### 4.3 Results

Our results show that wage-bargaining systems have a strong effect on the trade balance and the current account. Countries with more centralized and more coordinated wage-bargaining systems have substantially higher, long-term trade balances and current accounts than those with less centralized and coordinated systems. This relationship is magnified in the eurozone. In countries that adopted the euro, greater wage-bargaining centralization leads to even more positive trade balances and less centralization to even more negative trade balances.

#### 4.3.1 Wage Bargaining, Trade Balance and Current Account

The results for specification (1) in Table 2 show that the trade balance increases by 1.4 percentage points when wage-bargaining centralization increases by one unit. This translates into an overall increase of ca. 5.97 percentage points if we move from the country with the lowest level (Great Britain) to the country with the highest level of centralization (Norway). The upper panel of Figure 3 illustrates this effect. It shows the estimated country-specific intercepts from specification (1) on the $y$-axis, which represent the country-specific trade balance over the whole period net of the influence of the time-varying control variables. The centralization variable is on the $x$-axis. As we can see, the predicted long-term trade balance conditional on centralization ranges from $-2.47$ percent to $+3.5$ percent of GDP. Countries with a low level of wage-bargaining centralization tend to have a negative trade balance in the long term; and countries with a high level of centralization tend to have a positive long-term trade balance.
Table 2: Effect of wage bargaining system on trade balance and current account (hierarchical models)

<table>
<thead>
<tr>
<th></th>
<th>Trade balance</th>
<th>Current account balance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) (2) (3) (4) (5)</td>
<td>(6) (7) (8) (9) (10)</td>
</tr>
<tr>
<td>Central$_i$</td>
<td>1.405*** (0.488)</td>
<td></td>
</tr>
<tr>
<td>Coord$_i$</td>
<td>1.440*** (0.553)</td>
<td></td>
</tr>
<tr>
<td>Peak$_i$</td>
<td></td>
<td>0.493 (0.387)</td>
</tr>
<tr>
<td>Union$_i$</td>
<td>0.093*** (0.032)</td>
<td>0.054*** (0.020)</td>
</tr>
<tr>
<td>CoXUn$_i$</td>
<td>0.867*** (0.260)</td>
<td>0.585*** (0.145)</td>
</tr>
<tr>
<td>NFA$_{i,t-1}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal$_{i,t}$</td>
<td>0.124*** (0.044)</td>
<td>0.078* (0.043)</td>
</tr>
<tr>
<td>Stock$_{i,t}$</td>
<td>0.012*** (0.004)</td>
<td>0.027*** (0.004)</td>
</tr>
<tr>
<td>Intermed$_{i,t}$</td>
<td>0.047 (0.143)</td>
<td>-0.270** (0.136)</td>
</tr>
<tr>
<td>Old$_{i,t}$</td>
<td>-0.434*** (0.069)</td>
<td>-0.078 (0.065)</td>
</tr>
<tr>
<td>Young$_{i,t}$</td>
<td>-0.204*** (0.047)</td>
<td>0.000 (0.065)</td>
</tr>
<tr>
<td>GDPpc$_{i,t}$</td>
<td>0.141*** (0.040)</td>
<td>0.045 (0.038)</td>
</tr>
<tr>
<td>Growth$_{i,t}$</td>
<td>-0.006 (0.057)</td>
<td>0.007 (0.057)</td>
</tr>
<tr>
<td>Regime$_{i,t}$</td>
<td>-0.045 (0.211)</td>
<td>0.173 (0.193)</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.209** (1.893)</td>
<td>-3.168*** (1.038)</td>
</tr>
</tbody>
</table>

Sd(Cons) 2.75 2.77 3.20 2.70 2.57 1.41 1.29 1.79 1.53 1.31

p | 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000 0.000
N | 620 651 651 651 651 620 651 651 651 651

Notes: standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. 
Figure 3: Effect of wage-bargaining centralization on trade balance and current account

Notes: dots represent country-specific intercepts $\alpha_j \pm$ standard errors plotted against country-level wage-bargaining centralization from model (1); solid line represents estimated multilevel regression line $\alpha = \gamma_0 + \gamma_1 C$. 

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The estimated intercepts for the individual countries are located closely around the estimated regression line. In particular, the relative positions of “modern mercantilists” such as Germany can be almost perfectly explained by the wage bargaining system. Many of the larger deviations are intuitive. The trade deficit of the United States is larger than predicted because it issues the main reserve currency. Norway has a higher trade surplus than predicted because of its large oil exports. We address the cases of Greece, Portugal, and Australia in our Appendix. For now, we just note that Greece and Portugal do not affect the slope of the regression line much and that Australia diminishes rather than magnifies the estimated effect of wage bargaining.

The positive effect of wage-bargaining centralization on the trade balance feeds directly into the current account. In specification (6), a one-unit increase in centralization leads to a one-percentage point increase in the current account. Again, countries with low centralization are predicted to have a negative, long term current account while countries with a high centralization tend to have a positive current account in the long term. As the bottom panel in Figure 3 illustrates, the magnitude of the effect is slightly smaller than for the trade balance. The predicted current account varies from ca. –2 percent to +2 percent of GDP when we move from low to high wage-bargaining centralization.

The results are nearly identical for the main alternative measure, wage-bargaining coordination. Columns (2) and (7) show that more coordination improves trade and current account balances, with an estimated substantive effect very similar to the one of the centralization variable. The results for alternative measures of wage bargaining support our argument. The variable in specification (3) captures at which level wage bargaining takes place, with higher values denoting less freedom of bargaining at the enterprise level. Absent coordination, there is no evidence of an effect on the trade or current account balance. In contrast, the degree of labor unionization has a positive effect, suggesting that wage-bargaining coordination is easier with greater unionization. This finding runs counter to the argument that decentralization and an undifferentiated crackdown of labor unions facilitates wage compression and export-led growth. Finally, the last variable confirms once more that the combination of coordination and unionization has a very strong, positive effect on trade
balances and current accounts. The effects of these alternative measures are displayed in Appendix Figures A4 to A6. Overall, the graphs for the other wage bargaining variables underscore how robust our results are to alternative measures of the wage-bargaining system.

Our results for the control variables substantially match those of Chinn and Ito (2007) and Chinn and Prasad (2003). For the models of the trade balance, a positive fiscal balance leads to a more positive external balance. For the current account, the effect of the fiscal balance is not statistically significant. The most important predictor for the current account, in addition to the wage-bargaining system, is the past level of net foreign assets. The estimated coefficients on this variable and on stock market capitalization, demography and per-capita GDP are almost the same as in Chinn and Prasad (2003, tables 2 and 5).

4.3.2 Fixed Exchange Rate Regimes and the Euro

Table 3 shows the results for model (2), which examines how the effect of the wage-bargaining system on the trade and current account balance changes when a government adopts a different exchange rate regime. In these models, we allow not only for varying intercepts but also for varying coefficients on the exchange rate variable.

The results in column 1 show that the original classification of exchange rates into four regimes from fixed to flexible does not have a statistically significant effect. When we use a binary variable that distinguishes between fixed rates (pegs and narrow, horizontal bands) and nonfixed rates (managed floats, crawling bands, and pegs), the effect is more evident. The results indicate that wage bargaining in centralized systems has a stronger effect on the trade balance when the exchange rate is fixed because trading partners find it more difficult to adjust externally through currency depreciation. The statistical uncertainty is substantial, however.

\footnote{The signs on the fixed-exchange-rate variable and the interaction are the reverse of the signs for the broader exchange rate regime variable in column 1. The reason is that higher values for the latter variable mean less fixed regimes, while a higher value for the former indicates a fixed regime.}
<table>
<thead>
<tr>
<th></th>
<th>Trade balance</th>
<th>Current account balance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(11)</td>
<td>(12)</td>
</tr>
<tr>
<td>Central$_i$</td>
<td>0.990*</td>
<td>1.149**</td>
</tr>
<tr>
<td></td>
<td>(0.516)</td>
<td>(0.481)</td>
</tr>
<tr>
<td>Regime$_{i,t}$</td>
<td>0.860</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.907)</td>
<td></td>
</tr>
<tr>
<td>Central$<em>i$*Regime$</em>{i,t}$</td>
<td>-0.139</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.500)</td>
<td></td>
</tr>
<tr>
<td>Fix$_{i,t}$</td>
<td>-5.411*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2.937)</td>
<td></td>
</tr>
<tr>
<td>Central$<em>i$*Fix$</em>{i,t}$</td>
<td>1.389*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.751)</td>
<td></td>
</tr>
<tr>
<td>Euro$_{i,t}$</td>
<td>-9.625***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3.143)</td>
<td></td>
</tr>
<tr>
<td>Central$<em>i$*Euro$</em>{i,t}$</td>
<td>2.295***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.791)</td>
<td></td>
</tr>
<tr>
<td>NFA$_{i,t-1}$</td>
<td></td>
<td>0.060***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.005)</td>
</tr>
<tr>
<td>Fiscal$_{i,t}$</td>
<td>0.198***</td>
<td>0.154***</td>
</tr>
<tr>
<td></td>
<td>(0.042)</td>
<td>(0.043)</td>
</tr>
<tr>
<td>Stock$_{i,t}$</td>
<td>0.007</td>
<td>0.014***</td>
</tr>
<tr>
<td></td>
<td>(0.004)</td>
<td>(0.004)</td>
</tr>
<tr>
<td>Intermed$_{i,t}$</td>
<td>0.100</td>
<td>-0.095</td>
</tr>
<tr>
<td></td>
<td>(0.145)</td>
<td>(0.140)</td>
</tr>
<tr>
<td>Old$_{i,t}$</td>
<td>-0.420***</td>
<td>-0.411***</td>
</tr>
<tr>
<td></td>
<td>(0.067)</td>
<td>(0.070)</td>
</tr>
<tr>
<td>Young$_{i,t}$</td>
<td>-0.431***</td>
<td>-0.393***</td>
</tr>
<tr>
<td></td>
<td>(0.053)</td>
<td>(0.051)</td>
</tr>
<tr>
<td>GDPpc$_{i,t}$</td>
<td>0.001</td>
<td>0.018</td>
</tr>
<tr>
<td></td>
<td>(0.041)</td>
<td>(0.041)</td>
</tr>
<tr>
<td>Growth$_{i,t}$</td>
<td>-0.064</td>
<td>-0.053</td>
</tr>
<tr>
<td></td>
<td>(0.053)</td>
<td>(0.055)</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.528</td>
<td>-3.182*</td>
</tr>
<tr>
<td></td>
<td>(1.996)</td>
<td>(1.853)</td>
</tr>
<tr>
<td>Sd(Cons)</td>
<td>2.67</td>
<td>2.67</td>
</tr>
<tr>
<td>Sd(Regime)</td>
<td>2.61</td>
<td>2.61</td>
</tr>
<tr>
<td>Corr(Cons, Regime)</td>
<td>-0.00</td>
<td>0.32</td>
</tr>
</tbody>
</table>

Notes: standard errors in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; results are from one-step hierarchical model; ‘Fix’ refers to horizontal pegs/bands (category 1 on the Reinhart and Rogoff (2004) scale).
**Figure 4:** Effect of the euro conditional on wage-bargaining centralization

*Notes:* dots represent country-specific slopes on the euro variable $\alpha_{2j} \pm$ standard errors plotted against country-level wage-bargaining centralization from model (2); solid line represents estimated multilevel regression line $\alpha_2 = \gamma_0^{\alpha_2} + \gamma_1^{\alpha_2} C$; euro countries are in red, non-euro countries in black.
Finally, the effect of eurozone membership is clear: If a country joins the eurozone, the positive effect of centralization on the trade balance is substantially magnified. For a country that is not part of the eurozone, a one-unit increase in wage-bargaining centralization leads to an increase in the trade balance of 1.21 percentage points. For a country in the eurozone, the same increase in centralization leads to an increase in the trade balance by 3.51 percentage points. The difference of 2.3 percentage points between euro and non-euro countries is statistically significant. Note that our previous results and conclusions about the unconditional effect of centralization on the trade balance are not simply are results of the euro. The effect of centralization for non-euro countries in Table 3 is only slightly lower than the effect of centralization for all countries in Table 2. The substantive effect of wage-bargaining centralization is still very large, with a low standard error for the coefficient on the centralization variable in the third specification in Table 3.

We obtain similar results for the current account. A one-unit increase in wage-bargaining centralization leads to an increase in the current account of 0.70 percentage points for non-euro countries. The same increase in centralization leads to an increase in the current account of 2.62 percentage points in countries that are members of the eurozone. For both groups of countries, the effect of wage-bargaining centralization is statistically significant. The statistical significance of the difference between euro and non-euro countries is lower than for the trade balance. This suggests that some of the benefits of the euro, in particular, greater integration of financial markets, has counteracted the incompatibility of different wage-bargaining regimes to some extent (cf. Abiad, Leigh and Mody, 2009).

Another way to look at this mechanism is to examine the impact that the euro has on the trade balances of different countries with different wage-bargaining systems. Figure 4 plots the country-specific coefficients on the euro variable against the wage-bargaining variable. These country coefficients, represented by the dots, show the effect of joining the eurozone on the trade balance (top panel) and the current account (bottom panel) for the individual countries. The plots show

\footnote{The estimation includes not only euro countries but also countries that did not join the euro because these countries provide information about the effect of wage bargaining in non-euro countries. The standard errors on the estimated coefficients are larger for non-euro countries, but the estimates fit well into the general picture. Estimation without the non-euro countries produces similar results.}
that the trade balance of those countries with a centralized system increases when they joined the euro, while the trade balance of those with a decentralized system decreases. With the exception of Ireland, the trade balance plot even correctly segregates euro countries with greater economic difficulties from those that have not experienced a crisis.

Our results are robust to exchanging the wage-bargaining coordination variable for centralization, shown in Appendix Table A2, and to using a two-step estimation, shown in Appendix Table A3. Furthermore, we also examine the effect of the wage bargaining variables within countries over time. To this end, we use an error-correction model with country-fixed effects and add the annual values of the wage-bargaining variables as independent variables (Appendix Table A6). Our results lead to the same substantive conclusion.

5 Case Study: Germany After Reunification

To supplement these quantitative analyses, we further explore the causal mechanism behind our results with a case study. Germany is at the center of the current discussions about mercantilism and eurozone imbalances. Most importantly, the country offers a rare case of within-country variation on our dependent variable over time that we can exploit.\footnote{The only other cases are Finland and Sweden, as shown in Appendix Figure 1. Belgium and the Netherlands also went through phases of wage compression, but produced consistently large current account surpluses, so there is very little variation over time in the dependent variable.} Despite having a fully floating currency, West Germany posted consistent current account surpluses until 1989, but then experienced nearly a decade of current account deficits. Following a period of considerable internal adjustment, the now reunified Germany’s current account swung back into surplus. As noted earlier, the relationship between the current account surplus and the nominal value of the currency is weak. The Deutsche Mark appreciated vis-à-vis the USD during the latter half of the 1980s, yet West Germany’s current account surplus continued to grow and peaked at 5 percent of GDP in 1989. (West) Germany until 1990 therefore represents the archetypical persistent-surplus economy in our framework.
What permits us to examine our causal mechanism is that Germany is unique in receiving a clearly exogenous shock in the form of reunification in 1990. Although East Germany’s productivity was only a fraction of West Germany’s, the treaty on the union of currency, economy, and social systems (Währungs-, Wirtschafts- und Sozialunion) stipulated an exchange rate of 1:1 for wages, salaries, pensions, rents, and other regular payments, as well as small savings. Crucially, at the insistence of West German unions, East German wages would be adjusted rapidly to about 80 percent of the West German level, and the West German tariff system expanded to the newly admitted provinces, bringing them into the fold of coordinated wage bargaining.

For Chancellor Helmut Kohl, the introduction of the DM promised to stabilize the German Democratic Republic (GDR) and to allow for an orderly process of reunification, although conveniently, it also helped secure his re-election in the first pan-German polls. The president of the Bundesbank (Germany’s central bank), Karl-Otto Pöhl warned (correctly, it turned out) that this decision would devastate East Germany industry and cause mass unemployment, so that a population exodus was at best delayed, a prediction that also turned out to be correct (Lehmbruch, 1994).

In consequence, Germany suffered an increase in the real effective exchange rate of about 20 percent within five years, coupled with a demand shock that boosted West German GDP growth to 4.6 percent in 1990. Overall inflation was low at 2.8 percent, but this figure obscured high wage settlements in key industries in West Germany. Recognizing that demand exceeded noninflationary output possibilities, the Bundesbank raised its discount rate first to 6.0 percent at the end of 1990, then 8.0 percent in 1991, and finally 8.75 percent in 1992.

With the surge in demand subsiding, East and West German employers faced wage settlements that either exceeded productivity gains (in the West) or were wholly unrelated to them (in the East). Extension of these settlements to the public sector implied an additional fiscal burden. Unemployment soared to unprecedented levels of over 10 percent, while real economic growth averaged only 1 percent, earning Germany the name of “sick man of Europe.”

The solid parliamentary majority of the conservative-market liberal coalition of the Christian
Democratic Union with the Christian Social Union—Free Democratic Party (FDP) responded with several supply-side reforms. In particular, within the ostensibly free-market FDP there was considerable resistance to eliminating barriers to entry into the protected crafts of its many small firms during times of high unemployment. If implemented, the macroeconomic effect of such reforms would likely have been a large-scale move of workers from manufacturing sector into (usually nontradable) services. This is not, however, what materialized.

Instead, faced with a relative loss of competitiveness, symbolized by the unprecedented current account deficit close to 2 percent, German employer associations sought lower wage settlements. This reflected the usual conditions of coordinated wage bargaining, in which wage increases are primarily related to the price signals that firms receive from international markets, as we outline above. In Germany, the metalworking sector unions and employer associations representing globally oriented machine tools and vehicle industries in the country’s southwestern regions set the pace for the rest of the economy (Iversen, 1999, 160). Typically, wage settlements are negotiated for whole industries, but separately by region (Bundesland) (Bispinck, 2007). The union peak federations regularly calculate the size of the “pie,” consisting of overall inflation and hourly labor productivity gains in the past year, that can be divided between employers and employees, as shown in Table 4, even though these are at best suggestive in a globalized economy.14

In the mid-1990s, unions and employers cooperated to preserve employment in exchange for essentially stagnant real wages. Moreover, the role of “works councils” consisting of representatives of unions and employers increased, as firms and employees sought consensual decisions on wages relative to productivity (Carlin and Soskice, 2009, 72).15 Nonetheless, it took time for information on international competitiveness to work its way through the system. Manufact-

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14 Views are divided about the state of coordination in wage bargaining in Germany, with some arguing that Germany has become purely export-focused at the expense of domestic demand (Baccaro and Benassi, 2014). We do not dispute that the expansion of a low-wage sector has depressed demand, but this sector is by definition weakly unionized. In the exposed sector, the coordination Überbau persists and functions effectively. Moreover, since 2009 real wages and domestic consumption have been growing. This puts us closer to Thelen (2014) who emphasizes the continuities in German industrial relations.

15 Note that works councils do not bargain over wages or employment conditions, but they play a crucial role in facilitating the information flow between management and unions, because works council representatives on the company board have access to all the firms’ accounting data.
Table 4: Productivity gains and inflation versus negotiated wage settlements in Germany, 1995–2005, in percent

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution room</td>
<td>4.3</td>
<td>3.9</td>
<td>4.4</td>
<td>2.1</td>
<td>2.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Nominal wage increase</td>
<td>4.6</td>
<td>2.4</td>
<td>1.5</td>
<td>1.8</td>
<td>3.0</td>
<td>2.4</td>
</tr>
<tr>
<td>2001</td>
<td>3.8</td>
<td>2.9</td>
<td>2.3</td>
<td>2.5</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>2.1</td>
<td>2.7</td>
<td>2.5</td>
<td>2.0</td>
<td>1.6</td>
<td></td>
</tr>
</tbody>
</table>

Source: Bispinck (2007, 10)

Turing employment decreased by almost 15 percent between 1991 and 1994. The last excessive wage settlement (from the point of view of an appreciating real exchange rate) was reached in February 1995 after a two-week strike in the metalworking industry. Only in 1996 did the two-year collective agreement lock in considerable wage moderation in exchange for job guarantees, a bargain praised by employers and the metalworking union IG Metall alike. In addition, employers and unions struck “Pacts for Employment and Competitiveness” (betriebliche Bündnisse zur Beschäftigungs- und Wettbewerbssicherung). More than half of these agreements in the 120 biggest German manufacturing companies entailed income cuts, retrenchment of bonuses, and in many cases longer working hours (Hassel and Rehder, 2001, 8). Remarkably, many companies increased employment in Germany and abroad in their overseas subsidiaries around the same time (Deutsche Bundesbank, 2006), as enhanced competitiveness at home also benefited subsidiaries abroad through supply-chain effects.

Why were such job protection pacts attractive for employers and employees in coordinated wage bargaining systems? Such pacts are partly endogenous to the economic structure of economies with highly coordinated systems. Coordinated systems favour sophisticated manufacturing industries in which employees and employers have an incentive to invest in company-specific skills. This correlates with relatively high costs of dismissal and strong employment protections. Employees are more likely to invest in company-specific skills if they are likely to retain their position even in an economic downturn. By comparison, in a highly deregulated labour market, employees will try...
to improve general skills that allow them to quickly find work again if they have been fired. To the extent that employers benefit when workers become more productive because they have acquired company-specific skills and expertise, they will therefore accept high firing costs. By extension, employers will therefore also prefer to retain workers rather than lay them off, provided they can keep wage costs in line either temporarily or permanently by flexibly reducing working hours.

In Germany, these are called pacts to safeguard employment, sustain regional production, and boost competitiveness (Bündnisse zur Beschäftigungssicherung, Standorterhaltung und Wettbewerbsstärkung). Their central element is a trade of job guarantees by employers in exchange for wage cost reduction by employees. A comprehensive study by Büttner and Kirsch (2002) finds that such pacts became widespread in German companies in the mid-1990s, after proposals by unions for an economy-wide pact failed (Heidemann, 2005, 10). They were typically initiated by workers’ representatives, either works councils or unions, after the employer had signaled an intention to reduce the cost of personnel. Compared to layoffs, which provide only a short-term reprieve, such pacts benefit companies by reducing personnel costs in the long run. In exchange, workers accept lower pay per hour, longer working hours for the same pay, and greater flexibility in their working hours, or any combination thereof (Büttner and Kirsch, 2002, 19–20).

The “coordination” aspect of such pacts at first appears limited. In practice, however, industry-wide collective bargaining agreements have become a ceiling that only the most profitable companies reach. Less successful companies then resort to pacts to lower personnel costs relative to the agreement, a measure requiring “opening clauses” conceded by German trade unions during the second half of the 1990s (Lehmann, 2002, 236–238).

Although quantitative studies of the direct effect such jobs pacts are lacking, the case studies assembled by Büttner and Kirsch (2002) all show a similar pattern: By 1994/1995, the employers in question had begun to reduce their headcount in response to operational losses, prompting workers to propose bargains to secure the remaining employment, typically negotiated in 1996 and 1997. The timing of these pacts is important, as they clearly predate the Agenda 2010 and the “Hartz Reforms,” which primarily reduced unemployment insurance payments and introduced elements
of “welfare-to-work”, and generally either coincide with or precede the adoption of the euro by a year or two (Dustmann et al., 2014).

These pacts were not limited to the manufacturing sector. A central element of the coordination in German wage bargaining is that the collective agreements in the exporting industries set the ceiling for agreements in other sectors as well. It appears that more pacts were concluded in mature manufacturing industries than in services, very few in the public sector, and none in “new” industries such as software engineering (Heidemann, 2005, 13). Nonetheless, wage growth was controlled in services and the public sector through coordination.

These developments are evident in the evolution of Germany’s real exchange rate and the trade balance as shown in Figure 5. The dashed line indicates the year of German reunification. The wage moderation phase that began in 1995-1996 (shown in the upper panel) helped reduce the real exchange rate by almost 40 percent. The German trade balance shown in the lower panel moved from nearly –2 percent to a historical high of 7 percent between 2000 and 2007, even though the euro nominally appreciated over 44 percent against the USD in the same timeframe. This underscores that the link between the nominal exchange rate and the current account balance is tenuous. In fact, much of the increase in Germany’s real exchange rate after 2003, despite ongoing wage moderation, may be attributed to movements in the euro’s external value. Note that the implementation of the Agenda 2010 and Hartz reforms between 2002 and 2005 came after the wage moderation phase and coincided with an increase in the real exchange rate. This suggests that wage moderation, rather than an expansion in the low-wage sector, was the main contributor to the trade surplus. It is also noteworthy that the Bundesbank had begun to lower interest rates in 1993 while unions were still negotiating large wage increases, whereas in normal times, interest rates would be raised to signal a willingness to prevent wage-push inflation (Franzese and Hall, 2000). Following reunification, Germany was temporarily pushed out of its institutional equilibrium. Limited liberalization and the creation of a low-wage sector notwithstanding, it returned to its institutional equilibrium in the late 1990s.
The German case therefore provides direct evidence of our central claims. Countries with coordinated wage-bargaining institutions tend to run persistent current account surpluses in their institutional equilibrium. Given an exogenous shock to competitiveness, the same institutional mechanism also allows for wage moderation, which restores competitiveness and thus moves the current account back into surplus. The consequence is, of course, that such countries must export their way out of recessions, because wage moderation delays an increase in domestic demand until export earnings wind their way through the economy.

6 Conclusion

This paper sheds new light on the origins of global financial imbalances. These imbalances are among the most important determinants of international financial crises and present one of the
most urgent policy problems for the current liberal world order (Copelovitch and Singer, 2016). In this debate, analysts often see surplus countries as mercantilists and deficit countries as spendthrifts that manipulate exchange rates and promote too little or too much consumption or too much or too little savings. Although the studies identify very different policies as decisive, a common theme of all analyses is the focus on short- or medium-term government policies.

As our paper emphasizes, such imbalances are not a temporary phenomenon but, rather, have characterized the international economy for a long time. To account for these highly persistent current account deficits and surpluses, we concentrate on the long-term effects of the domestic political-economic system, which determines how relative prices evolve in OECD economies. We find that countries with a more coordinated wage-bargaining system are able to moderate price changes in response to economic shocks more effectively than countries with a less coordinated system. This means that a continuously slower increase in relative prices translates into a favorable trade balance and, hence, current account.

These findings have important implications for the distributional consequences of the liberal international order with its open trading system. It suggests that countries with coordinated wage-bargaining systems successfully slow down the pace of their own industrial transformation from manufacturing to services. They continue to export manufactured goods to countries with less coordinated wage-bargaining systems that are undergoing a much more pronounced transformation and where the manufacturing sector is shrinking rapidly (Hays, 2009, 94). The loss of manufacturing jobs then fuels populist anger at the “mercantilist” trade partners and turns the mood against free trade in many manufacturing industries (see also Owen 2016; Owen and Quinn 2016, 104; Jensen and Rosas 2016). Insofar as wage-bargaining systems help some countries retain manufacturing jobs at the expense of others, persistent imbalances are the manifestation of an intense political conflict.

Such “mercantilism,” however, is not the result of policies that a government chooses on a day-to-day basis. Instead, they have their origins in the deeper differences in domestic institutions among countries. In that sense, current account imbalances are “built into” the international eco-
nomic system, in which countries have complementary roles as producers, consumers, creditors, and debtors in economically tranquil times. Problems arise when this variety of institutions is amended with a rigid international framework, such as the euro system, which ignores the distinct adjustment ability of individual domestic systems.

Although, in the aftermath of the global financial crisis, some external deficits have shrunk, balance-of-payments imbalances will persist for the near future. The IMF’s 2014 World Economic Outlook underlines that “external imbalances in 2013, although declining, remained almost twice as large as would be consistent with fundamental and desirable policies” (IMF, 2014, 12). Chinn, Eichengreen and Ito (2014, 489) note that “(…) global imbalances are unlikely to disappear.” In short, global financial imbalances remain problematic and may again cause financial crises. Our analysis explains why this is the case, even if the problems of regional arrangements were fixed (see, e.g., Baerg and Hallerberg, 2016). The domestic institutional features will consistently perpetuate imbalances in the future in a highly integrated world economy with plenty of trading opportunities.
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