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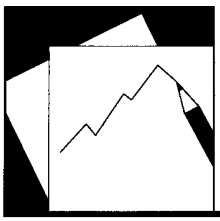

IMF Working Paper

Current Account Imbalances: Can Structural Policies Make a Difference?

Anna Ivanova

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Current Account Imbalances: Can Structural Policies Make a Difference?[1]

Prepared by Anna Ivanova

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Abstract

The discussion of global and regional imbalances has put the spotlight on the possible link between current accounts and structural policies. Drawing on standard empirical current account models, the paper finds that the commonly recommended structural factors cannot explain the widening of imbalances prior to the 2008–09 crisis. That said, structural factors do help explain some part of long-standing cross-country differences in the current account levels. In particular, countries with stricter credit market regulation, higher taxes on businesses, lower minimum wage (in particular,in slow growing economies) and generous unemployment benefits tend to have higher current account balances than others.

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Author's E-Mail Address: aivanova@imf.org

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I. INTRODUCTION

Although the relationship between global current account imbalances and the financial crisis of 2008–09 is far from being obvious, the concern remains that such imbalances are a continuing source of global instability and a threat to a sustainable recovery (Blanchard and Milesi-Ferretti 2009). The seriousness with which the imbalances are viewed is reflected in the far-reaching actions that have been proposed to limit them, including a suggestion for imposing quantitative targets on the current account balances.[2] Underlying these proposals is the premise that some sizeable fraction of both the surpluses and the deficits represents "distortions." In other words, where the current account balance is the outcome of an "optimal" allocation of resources ("good imbalance"), they are not a problem; but the imbalances that result from policy distortions or externalities are "bad." Since distortions are undesirable even from the country perspective, their mitigation by policy action is twice blessed since the threat from global instability is also scaled back.

In this paper, I empirically examine the contribution of "structural factors"—the presumed locus of the distortions—to current account imbalances. While the analysis covers an extended period, 1975–2009, I use the results to interpret developments during the last phase of the sample period. It was in those years that the unprecedented global expansion and exuberance were accompanied by widening imbalances. I conclude that a significant fraction of the imbalances in the run up to the crisis reflected the global cycle. Yet, since much policy attention has been focused on possible structural causes and remedies, the bulk of the paper is devoted to an assessment of the link between structural policies and the current account. I apply these findings in particular to Germany, where the current account surplus surged to 7½ percent of GDP in 2007.

In practice, the specific distortions at the root of imbalances remain a matter of some speculation, with competing explanations for the observed behavior of the current account. For example, high current account surpluses due to low investment may reflect a variety of factors, including the lack of competition in the financial sector, high corporate taxation, or expectations of low potential growth. More seriously, the same package of structural policies is at times prescribed to both surplus and deficit countries. That package often includes deregulation of product, services and credit markets, reduction in employment protection, removal of rigidities in the labor market and taxation. While these policies may be good for many reasons, their impact on the current account *a priori* is not clear. Structural policies, which may influence productivity growth and/or access to credit, could impact both savings and investment decisions. The variety of channels, and the complex interactions between them, makes the issue an empirical one, a perspective that I adopt.

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[2] See, for example, the proposal by the U.S. Treasury Secretary Timothy F. Geithner to the meeting of G-20 ministers in South Korea in 2010 (http://graphics8.nytimes.com/packages/pdf/10222010geithnerletter.pdf).

For a panel of 106 advanced, emerging and developing countries, I estimate an equation to determine the correlates of the current account balance, using five-year non-overlapping averages. As is standard practice, to represent the intertemporal consumption and investment decisions underlying the current account, I include such control variables as income growth and level, population age structure, fiscal balance, initial net foreign asset position, and the degree of financial integration. In line with other recent studies, I find that these standard determinants of the current account did not evolve significantly during the final years of the global exuberance and so cannot be used to explain the emergence of global imbalances. I then add a number of variables representing structural factors. Even more so than the standard variables, structural factors changed little over time or changed in the same direction in the surplus and deficit countries. Thus these can also explain very little of the emergence of imbalances prior to the crisis.

I infer from these findings that the emergence of imbalances was likely linked to the cyclical factors. Germany, in particular, was able to benefit from the global increase in demand for technology-intensive goods, in the production of which Germany has a comparative advantage. The "windfall" profits of German firms due to their export success, however, did not immediately translate into the increase in domestic investment as German firms, apparently, viewed the boom as temporary and the German growth potential remained low.

As a further consideration, I ask if structural policies, while not directly influential, may have helped shape the response of the current account to the standard variables. The evidence presented in this paper suggests that even in their role as absorbers or amplifiers of changes in fundamentals, structural factors account only a small fraction of the imbalances.

To be clear, even if not a candidate for explaining the rise in imbalances, I do find that some structural factors do have a meaningful correlation with the current account balance and hence can explain long-standing differences in the current account balance across countries. Even these findings need to be qualified, however, as they are often not robust across country samples and time periods, with some commonly recommended policies increasing and some reducing the current account balance. With these caveats, the empirical results suggest that lower business taxation, credit market regulation,[3] and unemployment benefits can reduce the current account surplus. Consistent with earlier studies, I find that a lower minimum wage and less strict employment protection, often recommended for making the labor market "more flexible," are associated with larger current account surpluses. In the application to Germany, this would imply that the minimum wage would have to be raised and employment protection strengthened to reduce the current account surplus but this may not be desirable

[3] The measure of credit market regulation employed in this paper includes four components measuring the degree of public ownership of the banking system, control of interest rates, percentage of credit extended to private sector, and competition from foreign banks.

since a higher minimum wage and stricter employment protection may raise unemployment. Hence, these findings' relevance to Germany is unclear. However, reducing minimum wage and lowering employment protection in some of Europe's peripheral economies could contribute to a reduction in their current account deficits.

Hence, the empirical evidence points to select structural measures that would need to be tailored to particular countries rather than a broad structural policies' package for addressing imbalances. For Germany, these results suggest that lower taxes on businesses, further reduction in the gross unemployment replacement rate, and a smaller public share in the banking system[4] could reduce the surplus. Altogether, however, the impact on the German current account surplus will likely be modest.

II. LITERATURE REVIEW

The relationship between structural policies and the current account remains an open one. The literature agrees that fundamentals such as income per capita, demographics, fiscal policy and other traditional factors are important determinants of the current account. But beyond that, while several recent studies point to imbalances in the run up to the 2008–09 crisis as "excessive" compared to the fundamentals, the role of the structural factors in the emergence of these imbalances remains an open question. The overall impact of the commonly recommended package of structural policies such as liberalization of product, services and credit markets, reduction in employment protection, removal of other labor market rigidities as well as reduction in business taxation remains unclear.

Chinn and Prasad (2003), Abiad, Leigh and Mody (2009), Jaumotte and Sodsriwiboon (2010), and Lane and Milessi-Ferretti (2011) find that current account balances are, to a large extent, driven by such "fundamentals" as relative per capita income, fiscal stance, demographics, oil prices, the initial net foreign assets position and the degree of financial integration conditional on income level. The studies find positive and significant relationship between relative income per capita and the current account, possibly, capturing the fact that capital flows from rich to poor countries where there are higher growth "catching up" opportunities. The current account balances are also found to be relatively large where the fiscal balances are relatively large, suggesting that the private sector savings provide only a partial Ricardian offset to changes in public savings (the coefficient is often found to be less than one).

Higher old and young dependency ratios are associated with the lower current account balance as relatively higher dependency ratios are associated with the lower aggregate

[4] Germany scores well on all of the subcomponents of the index of credit market regulation except the degree of public ownership of the banking system due to the large presence of publicly-owned banks (Landesbanken and Sparkassen).

savings. However, the expected change in the old dependency ratio has a positive association with the current account as countries that age rapidly are saving more. For oil producers, the current account is positively related to the oil balance, which captures fluctuations in the oil price. The literature also finds that the current account is positively associated with the initial net foreign assets position. While somewhat counterintuitive, this finding likely reflects the fact that the net foreign assets position is generating net investment income, which is part of the current account. Financial integration is also found to facilitate access to capital for poor countries; hence, poorer countries tend to have lower current account balances at a given state of financial integration. Some studies also find that among developing countries the degree of trade openness is negatively associated with the current account balance. Chinn, Eichengreen, and Ito (2011) also find weak evidence that countries with more developed financial markets have weaker current accounts but the result is not robust.

While a substantial body of literature exists on the link between current accounts and macroeconomic fundamentals, the literature on the link between structural policies and the current account is scarce and inconclusive. Below is a summary of the recent studies, which allows placing this paper in perspective.

Kennedy and Sløk (2005) conclude that current account imbalances are structural in nature because they deviate from the current accounts projected under unchanged fiscal policies, unchanged real exchange rates and monetary policy aimed at closing the output gap in the medium term. They also find that cyclically-adjusted current accounts are correlated with the potential growth but this correlation is largely driven by cross-country differences. On the other hand, they do not find a robust link between specific structural policies and the current account in the reduced form pooled time series and cross-country regressions for a sample of 14 OECD countries though there is some evidence that more open *product and financial markets* are associated with the weaker current accounts. The other variables under investigation included indicators of labor market regulation, FDI restrictiveness, financial market development (stock market capitalization), and labor market performance (trend participation rate, NAIRU). Nevertheless, they encourage policymakers to undertake structural policies because the faster growing economy will improve the welfare, though may or may not reduce the imbalances.

Kerdain, Koske and Wanner (2010) estimate reduced form regressions in a large panel of 117 advanced, emerging and developing countries to assess the impact of structural policies on savings, investment and the current account. They conclude that structural policies may influence savings, investment and the current account through their impact on macroeconomic conditions such as productivity growth or public revenues and expenditures but also directly. In particular *social spending*, notably, on healthcare is associated with the lower savings rate, possibly due to lower precautionary savings, and lower current account. Stricter *employment protection* is associated with lower savings rates if unemployment benefits are low as well as higher investment rates, perhaps, due to greater substitution of

capital for labor, leading to lower current account balances. Product market liberalization is found to temporarily boost investment though the direct impact on the current account could not be detected. Financial market deregulation may lower the savings rate though only in less developed countries and again the direct impact on the current account could not be detected.

While the Kerdain, Koske and Wanner (2010) study is rather comprehensive, their regression includes country-specific fixed effects, which may absorb some of the cross-country variation in the current account, possibly, related to the structural variables, which do not change significantly over time. Also, some of their other variables, such as user cost of capital and productivity growth potentially reflect structural conditions. As a result, this study does not allow to fully answering the question of the individual impact of various structural policies on the current account.

Kerdain, Koske, and Wanner (2010) find little evidence that structural policies affect the speed of adjustment of the current to the equilibrium. In contrast, Ju and Ii (2007) provide evidence that *rigid labor markets* reduce the speed of adjustment of the current account to the long run equilibrium. The authors use a two-step approach: first, they estimate a speed of convergence of the current account ratio to the steady state for each country separately using vector-error correction model, and, second, they relate the speed of convergence to the degree of labor market rigidity in a cross section of countries. However, large economies such as the United States, Japan, and Germany are excluded from this analysis because the authors suggest that the current accounts in large economies could behave systematically differently due to the importance of not only their domestic labor market flexibility but also foreign labor market flexibility.

Jaumotte and Sodsriwiboon (2010) estimate pooled current account regressions with traditional determinants as controls in a smaller sample of 49 advanced and emerging economies to test for the importance of European Monetary Union and the potential impact of policies. They find that *financial liberalization and higher minimum wage* lower the current account, while no direct link between the level of *employment protection* as well as the level of *unemployment benefits* and the current account could be detected. Bayoumi et al (2010) in an econometric study covering 100 advanced, emerging and developing countries for the period 2001–09 (annual data) find that countries with more (less) *credit market regulations* have higher (lower) current account balances while controlling for traditional fundamentals.[5]

Berger and Nitsch (2010) investigate the link between employment protection and product market regulation and the bilateral trade balances as a fraction of total bilateral trade in a

[5] Bayoumi et al (2010) employ an index of credit market regulation constructed by Fraser Institute, which is also utilized in this paper (see Appendix for details).

sample of 18 European countries over a long time horizon (1948 through 2008). They find that countries with less *flexible labor and product markets* exhibit systematically lower bilateral trade surpluses than others.

A recent body of literature also identifies imbalances in the period preceding the crisis as "excessive" compared to fundamentals. These studies including Barnes, Lawson, and Radzwill (2010), who estimate current account regression with traditional factors in sample of 25 OECD countries, Lane and Milessi-Ferretti (2011), in sample of 65 advanced and emerging economies, and Chinn, Eichengreen, and Ito (2011), in a sample of 109 industrial and developing countries. Barnes, Lawson, and Radzwill (2010), and Chinn, Eichengreen, and Ito (2011), find some evidence that "excesses" could partly be explained by housing investment, real housing appreciation and stock market performance. However, large residuals remain, in particular, for the U.S. and China. Lane and Milessi-Ferretti (2011) conclude that the countries with the largest excesses before the 2008–09 crisis have experienced the largest corrections thereafter and the adjustment in deficit countries has been achieved primarily through the demand compression rather than expenditure switching. They assess further that the high output costs that have been associated with the rapid current account corrections provide support for research that assesses whether current account deficits during good times might partly reflect distortions that fail to internalize the risk of a subsequent sudden stop. It is not clear, however, what exactly these distortions are.

Finally, theoretical literature (see, for example, Vogel 2011) suggests that while structural policies targeting mainly supply-side weaknesses may help regain competitiveness in economies with competitiveness problems in the short run, this effect is offset by the income effect as imports rise in the longer run. Hence, the lasting long-term rebalancing of external accounts also requires the correction of demand imbalances.

The current paper contributes to the existing empirical literature in the following three dimensions. First, it attempts to shed some light of the role of structural policies in the emergence of imbalances in the run up to the 2008–09 financial crises. Second, it assesses the *direct* impact of a commonly recommended package of structural policies on the current account in a large sample of advanced, emerging and developing countries while controlling for traditional macroeconomic fundamentals. Third, it assesses the potential size of the current account reduction due to these policies in Germany, which has come under a spotlight due to its large current account surplus.

While the results in this paper support some of the earlier findings, they point to the lack of robustness of many results in determining the level of the current account. Moreover, the paper emphasizes the muted role of structural factors in causing the growth of imbalances just prior to the recent crisis. For Germany, the paper offers some policy directions for change but cautions that the quantitative effects may be small.

III. BASELINE MODEL

In this section I introduce the results of the baseline econometric model. The baseline model is estimated using random effects model in a sample of 106 advanced, emerging and developing countries. It includes traditional fundamentals, which were found to be important current account determinants in the earlier literature. As a robustness check, an OLS model with cluster robust standard errors (not including fixed effects) is also estimated and yields similar results. The current account is averaged over five-year non-overlapping periods spanning the period of 1975–2009 since the goals is to identify the determinants of the medium term or so to speak "structural current account." Many of the explanatory variables enter as deviations from the PPP-weighted sample average in a given period, which captures the fact that current accounts are determined by relative positions of the countries versus their trading partners. Data sources are described in Appendix.

The baseline model (Table 1) largely confirms findings in the literature. Higher relative income per capita, fiscal balance, and initial net foreign assets position as well as higher oil prices for oil producer are associated with the higher current account balances.[6] Countries with relatively high current dependency ratios have lower current account balances as the elderly tend draw on savings more. However, countries with the higher expected increase in the dependency ratio, capturing the speed of aging, are found to have higher current account surpluses.

The regression also included the degree of financial integration measured by the sum of foreign assets and liabilities in percent of GDP and the interaction of the financial integration with the GDP per capita growth in the previous period (column 2). The link between financial integration and the current account works more robustly through growth rather than the income level. In particular, it reduces the current account balance in the countries with higher previous period growth. High growth countries, however, also tend to be poorer countries, hence, this finding is consistent with that in Abiad, Leigh and Mody (2009).

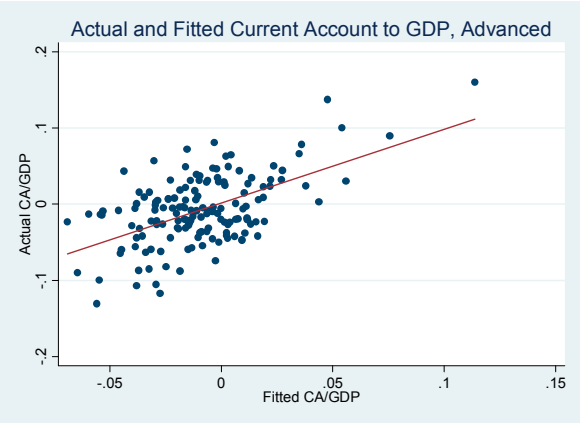
The model presented in the paper does not include any crisis dummies unlike some of the earlier studies. The reason is that the goal is to explain the developments in the current account with the known set of factors, including structural policies, while the dummies could capture some of the effects without identification of the policies and factors behind the crisis.

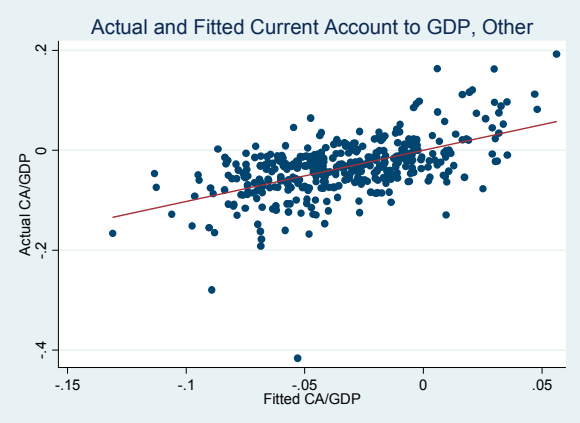
The relationship between the fundamentals and the current account balance in the sample of OECD countries is somewhat different (Table 2, columns 1 and 2). The relationship between income-per capita, fiscal balance, the ratio of net foreign assets to GDP, old dependency

[6] Although some of the variables e.g. financial integration, openness and oil price may be non-stationary, the residuals from the baseline regression estimated on annual data are found to be stationary using an augmented Dickey-Fuller test though exhibit serial correlation. Therefore, the results of random effects model were estimated using standard errors robust for heteroscedasticity and serial correlation.

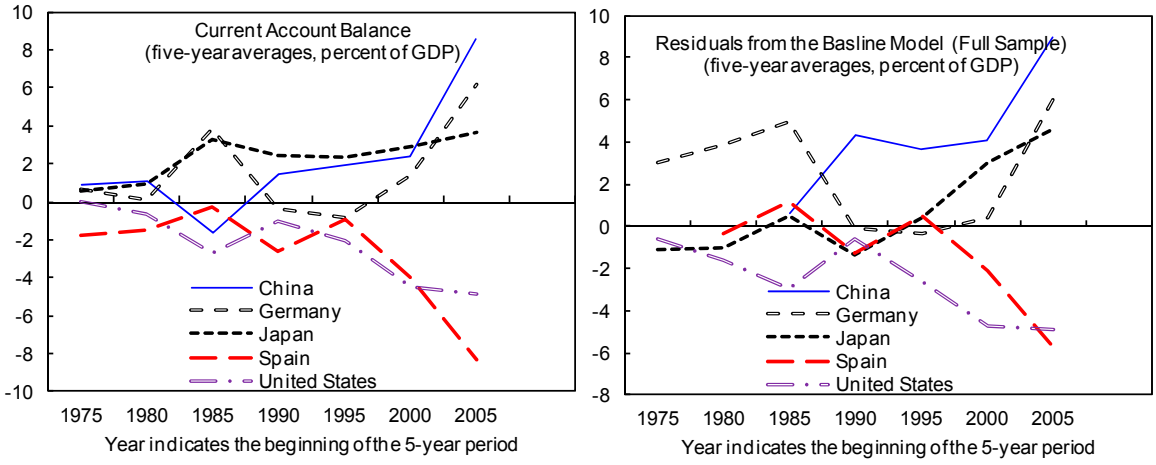
ratio, an increase in the old dependency ratio and interaction of financial integration and past growth with the current account remains broadly unchanged in the OECD sample though in some cases the coefficients become insignificant. In contrast, the coefficient on young dependency ratio becomes positive and significant. While this result appears counterintuitive it is consistent with the findings of Kerdrain, Koske, and Wanner (2010) as well as Barnes, Lawson and Radziwill (2010) and could, perhaps, be explained by the fact that richer OECD countries could afford to save more for future generations e.g. for education purposes. The degree of trade openness also appears to matter more in a sample of OECD countries, in particular, the higher the trade openness the higher is the current account surplus, perhaps, reflecting the fact that richer countries that are also more open tend to export capital to the poorer countries.

The baseline model generates a fairly good fit, especially for advanced countries, explaining about 35 percent of the variation in the current account balances in the sample. The model explains better cross-country variation with the between R-square of 0.5.





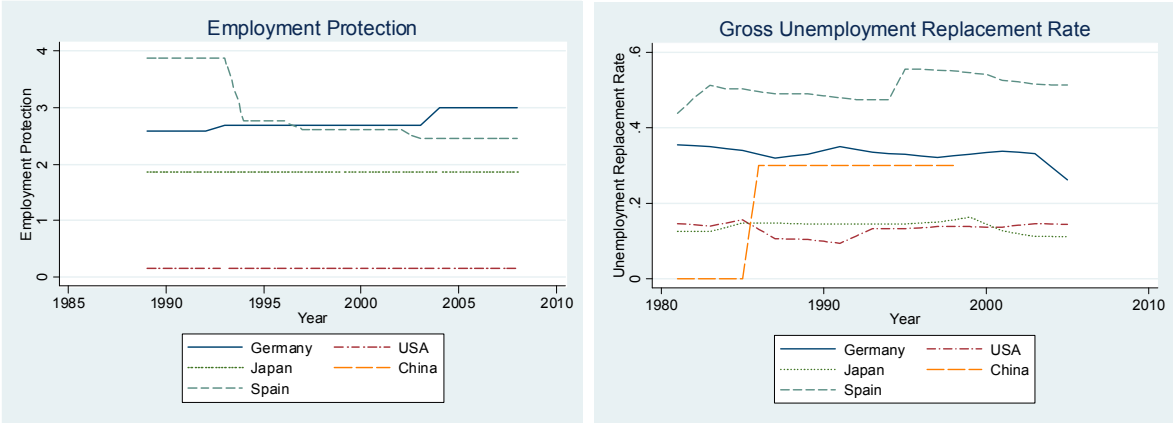
Nonetheless, the residuals from the current account regression largely mirror the imbalances that emerged in mid-2000. Hence, the "fundamentals" did not evolve to generate the imbalances. This is so even accounting for the potential impact of the financial integration and trade openness. The fact that imbalances widened across the globe suggests that some global forces were at work though country-specific factors probably determined the direction of change in the current accounts.

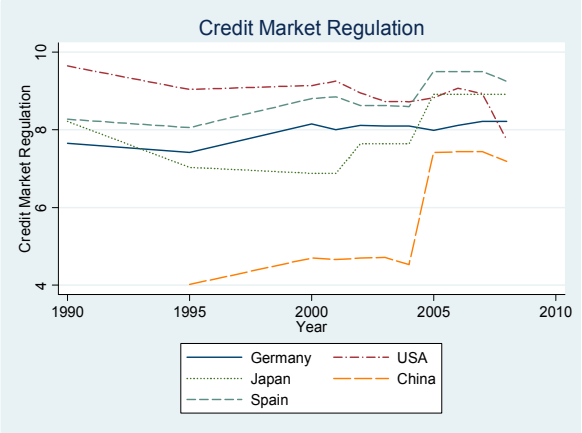


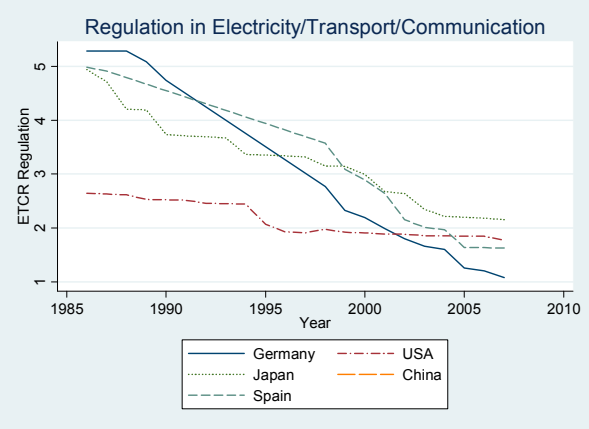
IV. Structural Policies and the Current Account

In this section, I introduce structural policies such as regulation, taxation, the level of minimum wage and unemployment benefits, and the results of the estimation when these factors are added to the baseline regression as five-year averages.

With respect to the emergence of imbalances, there are two distinct possibilities of what role structural policies could have played. First, structural policies on their own could have directly impacted the current accounts. For example, high level of business taxation may have reduced investment incentives leading to lower investment and higher current account balances. Second, structural policies could have shaped the response of the current account to changes in macroeconomic fundamentals and shocks, including global shocks. But even if structural policies did not play a major role in the emergence of imbalances in any way, they might help explain the differences in the levels of the current accounts across the globe. In this case, they could also be used as a tool for reducing imbalances. These three possibilities are investigated below.







First, I note that many structural indictors did not change substantially over time, in particular, during the period of the emergence of global imbalances, or if they did, they often changed in the same direction for the surplus and deficit countries.[7] China is the notable exception where credit market was substantially deregulated in 2005 and there was a substantial increase in the ratio of minimum to mean wage in 2002. Given the earlier findings in the literature on the impact of the financial liberalization and the minimum wage one can expect, however, both of these changes to reduce China's current account surplus. Hence, it is unlikely that structural factors on their own can explain the emergence of imbalances.

Second, I augment baseline regressions with the structural indicators that vary over time [8] (Table 1 for the full sample and in Table 4 for an OECD sample). Generally, the results do not indicate a robust relationship between the current account and structural policies though in some specifications in the full sample the coefficient on the unemployment gross replacement ratio is positive and significant while that on the ratio of the minimum-to-mean wage and employment protection indicator is negative and significant. No significant association is found for OECD countries though the sample there is rather small.

The positive association between the current account and the gross unemployment replacement rate could reflect the fact that generous unemployment systems might contribute

[7] In Germany the 2004 Hartz IV reform reduced unemployment benefits and social transfers as well as increased flexibility of temporary employment. The subcomponent of the employment protection indicator, which measures protection of temporary employment, did decline but the overall index increased.

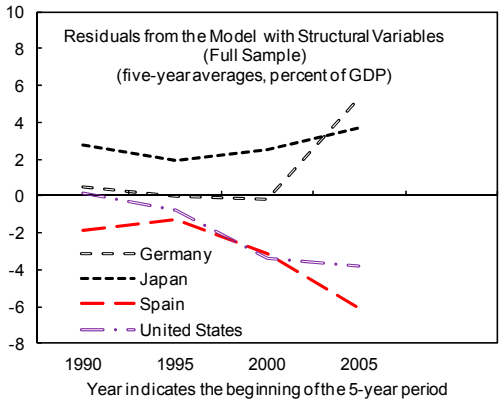
[8] Some of variables to replace the missing values were interpolated as some of these variables are not available on an annual basis. I also extrapolated the values of some structural variables to 2009 since for this year many of the structural variables were not available. The index of employment protection is available only for OECD countries but there are subcomponents of this indicator such as advance notice period and severance pay after nine months available for a broader set of countries in (Aleksynska & Schindler, 2010). I constructed an employment protection index for a broader set using out-of-sample forecast from the regression of the employment protection index on advance notice period and severance pay after nine months.

to higher unemployment rates by reducing incentives to seek new jobs (Bassani and Duval 2006, Vandenberg 2010). In such an environment, the unemployment rate and the probability of becoming an unemployed is higher, which could lead to higher precautionary savings by households. There may be, however, a counteracting impact as high unemployment benefits provide higher income in case of the job loss. However, to have a negative impact on the current account-to-GDP-ratio this higher income would have to lead to an increase in the marginal propensity to consume. The results suggest that the latter effect has not been important historically.[9]

The negative association between the ratio of the minimum to mean wage and the current account is consistent with the earlier findings and may reflect the fact that higher minimum wage may lead to higher labor costs and, hence, hurt competitiveness. This, in principle, could work through both savings and investment channels. Higher labor costs may reduce corporate profitability and savings. However, higher labor costs may also encourage companies to substitute capital for labor, when the latter is expensive.

Finally, higher employment protection is associated with the lower current account, which is consistent with the findings in the literature that higher employment protection reduces savings and increases investment. Higher employment protection raises implicit and explicit labor costs and, hence, the impact can be similar to that of the minimum wage.

Not surprisingly, the residuals from the regression where three of the structural variables (unemployment gross replacement rate, ratio of the minimum-to-mean wage, and employment protection index) are included continue to mirror the imbalances. Hence, structural factors on their own also did not evolve to generate the imbalances.



While structural policies may not have contributed directly to the emergence of imbalances, they may have helped shape the response of the current account to macroeconomic shocks and changes in the fundamentals. In other words, structural factors might have played a role of the macroeconomic shock absorbers or amplifiers. This hypothesis is tested in Section VI by analyzing the interaction of the structural factors with the more dynamic fundamentals.

[9] At the time of financial crisis, however, the impact of the reduction in unemployment benefits may be different from that observed historically as the level of unemployment may be largely a reflection of lower demand for labor rather than lower labor supply. Hence, the finding on unemployment benefits should be interpreted in the medium-term context.

V. LONG-STANDING STRUCTURAL DIFFERENCES AND THE CURRENT ACCOUNT

The long-standing differences in the levels of structural variables on the figures above are striking. They reflect not only policy differences but also differences in institutional arrangements and social norms. As such, these factors could have potentially been important in explaining the cross-country long-standing differences in the current accounts. I now turn to testing this hypothesis.

Given a rather small sample size I averaged all structural variables over all available years to construct a structural indicator per country that captures the long-term structural characteristic of this country. I then investigate the relationship between the current account and these structural variables, which do not vary over time, while controlling for fundamentals as before (Table 2 and 3 for the global sample and Table 5 for OECD sample). In most cases structural variable enter as deviations from a PPP GDP-weighted sample mean to capture the relative standing of a country compared to its trading partners. This formulation, essentially, allows to test whether structural factors help explain country-specific fixed effects. The results are summarized in the table below.

	Advanced, Emerging and Developing Countries			OECD Sample	
	Impact on the Current Account			Impact on the Current Account	
	Direction	Statistically Significant	Possibly strengthened by	Direction	Statistically Significant
Structural reforms that could **REDUCE** the current account balance					
Deregulation of the Credit Market	↓	Yes		↓	No
Reducing taxes (profit, labor and other business taxes) and simplifying procedures for tax payments	↓	Yes		↓	No
Reducing Unemployment Gross Replacement Rate	↓	Yes	the higher initial value of the net foreign assets and lower previous period growth	↓	Largely Yes
Product Market Deregulation	NA	NA		↓	No
Deregulation in retail trade	NA	NA		↓	No
Structural reforms that could I**NCREASE** the current account balance					
Deregulation of professional services	NA	NA		↑	No
Reducing the ratio of minimum wage to mean wage	↑	Yes	the higher previous period growth	↑	Yes
Reducing Employment Protection	↑	Largely No		↑	Largely Yes

The most robust result is that for the ratio of the minimum-to-mean wage, which has the negative sign and is significant in almost all specifications. The positive impact of the unemployment gross replacement rate is also fairly robust. However, the impact of other structural indicators is not robust across two different samples. Moreover, some commonly recommended policies would increase the current account while others would reduce it. In particular, lower business taxation, credit market regulation, and unemployment benefits can reduce the current account surplus. However, lower minimum wage and employment protection, often recommended for making the labor market "more flexible," are associated with larger current account surpluses.

The two new indicators that became significant in the overall sample when structural variables enter as averages over time are corporate income tax rate/indicator of doing business paying taxes[10] and credit market regulation (the higher value of this index means less regulation). Countries with the long-standing tradition of relatively high business taxes are found to have on average higher current account balances. This could reflect the fact that higher corporate taxation reduces investment incentives and, hence, may raise the current account balance.[11]

The credit market regulation index is constructed by the Fraser Institute and includes several components, namely, the degree of public ownership of the banking system, control of interest rates, percentage of credit extended to private sector, and competition from foreign banks. For example, in the case of Germany this index indicates strict regulation largely on the account of the high public ownership of the banking system. The results suggest that stricter credit market "regulation" raises the current account. Stricter credit market regulation can work through both savings and investment channels. In particular, the lack of access to credit may constrain investment. However, the lack of access to credit may also encourage household and corporate savings. Given that the index captures a broader set of components than just credit extended to the private sector the results could indicate that it is the broader effectiveness and efficiency of the banking sector that affects the current account.

To be clear though, these relationships are not evident in the OECD sample. The indicators of the degree of regulation in product and services markets, which are available only for OECD countries, generally are not significantly associated with the current account. The results for the OECD sample, however, should be interpreted with caution due to a relatively small number of observations.

Following Chinn, and Ito (2007) and Abiad, Leigh and Mody (2009) as a robustness check, I also included two additional financial measures, namely, the degree of financial development measured by the ratio of private credit to GDP and the measure of capital account openness constructed in Chinn, and Ito (2008). Unlike Chinn, and Ito (2007), however, I included a measure of financial development at the start of the period rather than the five-year period average to mitigate the potential endogeneity problem since financial development is measured by the ratio of private credit to GDP. Both financial development and capital account openness were not significant when included on their own. However, similarly to Abiad, Leigh and Mody (2009), I find that fast growing countries (typically, these are poorer countries), which have higher degree of capital account openness, also have lower current

[10] This variable captures the amount and administrative burden of paying taxes and contributions for a medium-size company; it is a rank of a country among all countries.

[11] There is evidence at the firm-level data that lower corporate tax rates or higher depreciation allowances are associated with higher investment (*e.g.* Vartia, 2008; Schwellnus and Arnold, 2008).

account balances, which could be interpreted as greater capital account openness helping the inflow of capital to poorer countries.

The inclusion of these variables does not alter the conclusions for other structural variables with the exception of credit market regulation variable, the coefficient on which becomes insignificant. While, in principle, credit market regulation and the degree of capital account openness are conceptually different they appear to capture similar aspects of the availability of credit. For simplicity of exposition capital account openness is not included in the tables but the result on credit market regulation should be treated with caution in this light.

Overall, empirical evidence points to select structural measures rather than a broad and diffuse structural policies' package for addressing imbalances. Moreover, there may be a trade-off between reducing the current account imbalance and achieving other policy objectives, hence, the choice of the policy instruments should not be based purely on their impact on the current account.

VI. Interaction of Structural Factors and Fundamentals

In this section I investigate whether long-standing structural differences may have shaped the response of the current account to changes in fundamentals.

To this end I augment regressions in Table 2 with the interaction terms of the structural variables averaged over time with the fundamentals. Due to a substantial reduction in the degrees of freedom with the inclusion of the interaction terms I experimented with the groups of variables separately and all together and made the choice of the variables that turned out significant based on a set of these regressions. The results are summarized in the text table above.[12]

The evidence of the indirect impact of structural policies on the current account is inconclusive since most of the findings, with the exception of the interaction of the minimum-to-mean ratio and the previous period growth, are not robust across specifications. The most robust finding is that the negative impact of the minimum-to-mean wage ratio on the current account is stronger in countries that experience rapid income growth. This finding could be consistent with the interpretation that higher minimum wage increases labor cost and reduces companies' savings or forces them to substitute capital for labor. Higher labor costs in the fast growing countries may provide stronger incentives for companies to substitute capital for labor, leading to higher investment and lower current account balance. This finding also suggest that the relationship between the minimum wage and the current

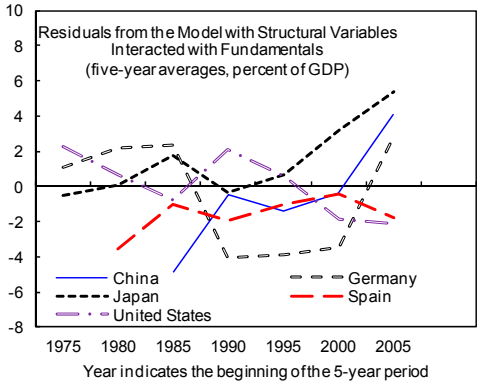
[12] The analysis included various interaction terms but the table reports only a subset of the results. In particular, no robust link between the interaction of credit market regulation/demographics and the current account could be established though some theoretical research (Coeurdacier and Guibaud, 2010) suggests that such interaction may be important.

account may be stronger for less developed countries, which tend to have higher rates of growth.

The impact of the gross unemployment replacement rate depends on the initial net foreign assets position and previous period per capita income growth. In particular, the positive impact of the unemployment benefits on the current account may be reduced in countries, which experience rapid income growth. This finding would be consistent with the explanation that high unemployment benefits increase the rate of unemployment and the probability of becoming unemployed, which in turn leads to higher precautionary savings since such probability would be reduced in the environment of rapid income growth. The finding that the positive impact of the unemployment benefits on the current account is strengthened in the countries with the high initial net foreign assets position is difficult to interpret and could be related to the fact that the net foreign asset position may capture persistence of the current account beyond the factor income contribution.

Nonetheless, the residuals from the regression with interaction terms (Table 6, column 2) though closer to zero than in the baseline model for all countries except Japan, track the imbalances. Hence, even as absorbers or amplifiers of changes in the fundamentals commonly evoked structural policies cannot account for the emergence of imbalances. Hence, there might be other important structural differences in the economies of the surplus and deficit countries, not necessarily representing policy distortions, which translated global shocks into the differing responses of the current accounts.

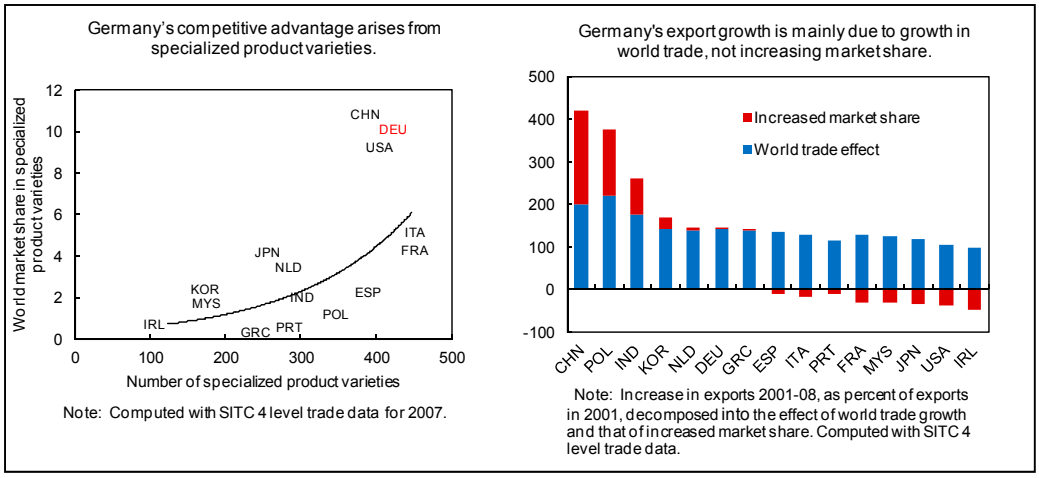
In addition, the emergence of imbalances coincided with the global cyclical upswing and a rapid expansion of world trade; hence, cyclical factors have likely played a role. The correlation of the "excess imbalances" with the housing investment/housing real price as well as with the performance of the stock market found in the literature provide further support to this proposition. Hence, a further investigation into the role of structural policies and broader structural factors in the impact of cyclical shocks on the current account may be warranted.



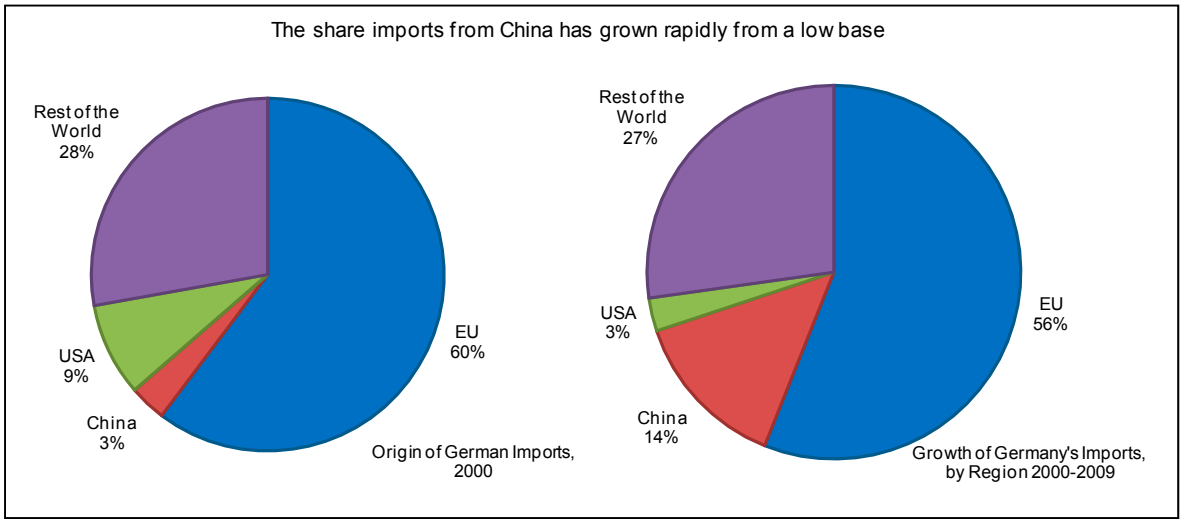
VII. IMPLICATIONS FOR GERMANY

In this section I analyze what the empirical findings imply for a country like Germany, where the current account surplus reached a historical high of 7½ percent in 2007. The improvement in the current account in Germany was driven by an improvement in Germany's trade balance on goods and coincided with the expansion of global trade. Germany's trade surplus has been consistently positive over the past half-a-century. Germany's export competitiveness derives from a comparative advantage in a large number

of specialized product varieties. Germany was able to hold its market share when other European countries lost it.[13]



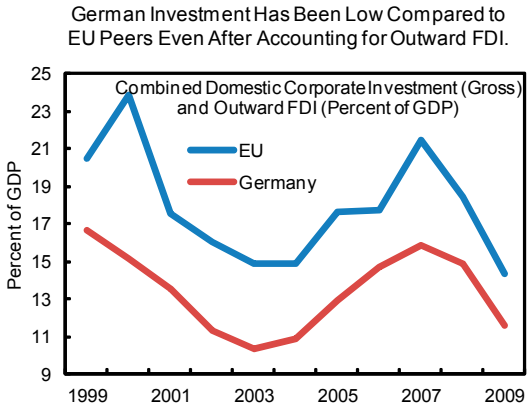
While Germany increased both exports to and imports from Europe as part of increased trade integration, its imports are increasingly tilted towards products produced most cost-effectively by China.[14] Thus, while German exports have remained largely unaffected by the competition from Asia and Eastern Europe, much of the rest of Europe was. European imbalances, thus, largely reflect the loss of competitiveness of other countries.



[13] The charts on competitiveness and imports were provided by Fabian Bornhorst as part of the joint column on VOXEU, which can be found at http://www.voxeu.org/index.php?q=node/6873

[14] In view of East Asia's deep and extensive industrial division of labor China's exports to Germany include export value added from other countries.

While German exports have been performing strongly for a good reason, it is somewhat puzzling why imports did not catch up. A look at domestic demand suggests that while all sectors contributed to increased current account surplus, the largest contributor was German corporate sector (Panel 1), which did not match a substantial increase in profits with increased investment despite the latter being consistently low. Corporate investment remained low compared to European peers even accounting for foreign direct investment (FDI) outflows. The reluctance to invest domestically reflects long-standing low returns to investment in Germany but pinning down particular policy distortions that could hold back investment is difficult. One possible explanation, consistent with the findings for the German labor market in the years preceding the 2008–09 crisis (Burda, 2011), is the manufacturing employers' lack of confidence that the boom would last. The estimated potential growth in Germany remained low (close to 1 percent) during those years and the companies chose to save a substantial portion of the "windfall profits" while increasing investment only slowly.[15]



Nonetheless, the results of the estimation, would suggest that in application to Germany lower taxes on businesses, further reduction in the gross unemployment replacement rate, and a smaller public share in the banking system could help reduce the surplus, albeit only moderately.

Despite a comprehensive reform of the corporate income tax in 2008, the combined federal and local corporate tax rates in Germany remain above the OECD average. German unemployment benefits also remain rather generous. Public sector banks occupy an important place in the German system, more so than in other advanced economies. These banks have implicit government backing and low profitability. The package of measures, which includes a scaling down of public provisioning of banking services, a reduction in unemployment benefits towards the OECD average, and reduction and simplification in business taxes to move Germany to the U.S. rank in the doing business survey could reduce the surplus by about 1¼ percent of GDP. Reduction in taxes and unemployment benefits, however, should be undertaken in a way that does not jeopardize long-term fiscal sustainability goals.

[15] In addition, overall low private investment in 2000s reflected a prolonged period of normalization in housing construction following the reunification boom and restructuring in the commercial real estate construction.

	Change in the current account in percent of GDP
Credit Market Deregulation to OECD average	-0.5
Reduction in taxes and simplification of tax procedures to US rank	-0.3
Reduction in gross unemployment replacement ratio to OECD average	-0.4
Total	-1.2

VIII. CONCLUSIONS

This paper reported an econometric investigation into the possible links between the current account balance and the commonly recommended package of structural policies including financial regulation, tax policy, and labor market flexibility. I find little evidence that this set of policies contributed substantially to the emergence of global imbalances. The large imbalances likely reflected mainly a booming world economy. Moreover, while the structural factors might have helped shape the response of the current account to the macroeconomic shocks and fundamentals, even in their role as shock absorbers/amplifiers they only partially account for the emergence of imbalances.

Nonetheless, structural policies do help explain long-standing cross-country differences in the current account levels. While the results are not always robust, there is evidence that countries with stricter credit market regulation encompassing the degree of public ownership of the banking system, interest rate controls, percentage of credit extended to private sector, and competition from foreign banks, is associated with higher current account balance. Countries with higher taxes on businesses, generous unemployment benefits, lower minimum wage and less strict employment protection also tend to have higher current account balances than others. To the extent that less developed countries tend to experience higher rates of growth, lowering the minimum wage is likely to be more effective in reducing the current account deficits of these countries than those of the advanced countries. Hence, some of the commonly proposed structural policies would reduce while others would increase the current account balance. These findings point to select structural measures tailored to the specific country circumstances rather than a broad and diffuse structural policies' package for addressing imbalances. It is also important to keep in mind that current account balance is not the only objective of the policy makers and the design of the package should take other objectives into account. For example, some of the policies that could lower the current account may increase inequality, which could be undesirable from the social point of view.

In relation to Germany, which experienced a large increase in the current account surplus in mid-2000, these findings imply that the most promising avenues for Germany to pursue in the reduction of current account surplus through structural policies is to lower the tax burden, liberalize the banking system to allow larger private sector participation, and reduce the unemployment benefits. However, altogether, the impact of these structural policies on the surplus will likely be modest and a broader strategy for raising potential growth and raising domestic consumption and investment in the medium term would be essential.

Table 1. Current account and structural policies: random effects model with robust standard errors, structural variables are averages over 5 year periods, total sample

Depedent Variable=Current Account to GDP (5-year average)	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009
Log of GDP per capita 1/2/	0.0247***	0.0236***	0.0265***	0.0211***	0.0176**	0.0107	0.0047	0.0107	0.0083
	[4.49]	[4.36]	[4.33]	[3.01]	[2.55]	[1.18]	[0.47]	[1.18]	[1.26]
Previous period growth 3/4/	-0.0002	0.0010	0.0012	0.0003	0.0011	0.0016	0.0020	0.0016	0.0022
	[-0.25]	[1.03]	[1.18]	[0.34]	[1.09]	[1.09]	[1.25]	[1.09]	[1.41]
Fiscal Balance to GDP 3/4/	0.3853***	0.3782***	0.3790***	0.1882**	0.2325***	0.1328	0.0219	0.1328	0.1450
	[4.56]	[4.42]	[3.73]	[2.42]	[2.84]	[1.13]	[0.21]	[1.13]	[1.45]
Net foreign assets to GDP 2/	0.0146**	0.0197***	0.0194***	0.0253***	0.0248**	0.0229**	0.0282**	0.0229**	0.0196
	[2.26]	[3.28]	[2.62]	[2.61]	[2.05]	[2.21]	[2.15]	[2.21]	[1.45]
Old dependency ratio 2/4/	-0.3226***	-0.3400***	-0.3744***	-0.3810***	-0.1273	0.0191	0.0373	0.0191	-0.2631**
	[-3.73]	[-3.93]	[-4.15]	[-3.64]	[-1.29]	[0.20]	[0.29]	[0.20]	[-2.09]
Young dependency ratio 2/4/	-0.0138	-0.0177	-0.0253	-0.0116	0.0354	0.0699**	0.0899**	0.0699**	0.0110
	[-0.54]	[-0.67]	[-0.88]	[-0.43]	[1.25]	[2.33]	[2.08]	[2.33]	[0.31]
Trade openness 2/	-0.0080	-0.0117	-0.0079	-0.0033	0.0022	0.0046	0.0146	0.0046	0.0152
	[-0.82]	[-1.12]	[-0.64]	[-0.23]	[0.25]	[0.41]	[1.17]	[0.41]	[1.19]
Increase in the old dependency ratio over 5 years	0.7330***	0.6511**	0.6117**	0.5964**	0.2593	0.6761***	0.8173**	0.6761***	1.0855***
	[2.91]	[2.54]	[2.19]	[2.02]	[0.96]	[3.37]	[2.28]	[3.37]	[3.35]
Contemporaneous oil price*Oil producer 3/	0.0005**	0.0004**	0.0005**	0.0006***	0.0003	0.0001	0.0003*	0.0001	0.0004**
	[2.29]	[2.07]	[2.09]	[2.73]	[1.42]	[0.89]	[1.88]	[0.89]	[2.10]
Financial integration 2/		0.0034	0.0035*	0.0031	0.0032*	0.0004	-0.0010	0.0004	0.0009
		[1.61]	[1.73]	[1.44]	[1.71]	[0.28]	[-0.69]	[0.28]	[0.38]
Financial integration*Previous period growth 5/		-0.0010**	-0.0013***	-0.0011***	-0.0011***	-0.0003	-0.0005	-0.0003	-0.0010**
		[-2.53]	[-3.59]	[-3.44]	[-3.46]	[-0.77]	[-1.49]	[-0.77]	[-2.04]
Crerdit Market Regulation 3/4/			-0.0025	-0.0010	-0.0018	-0.0020	-0.0017	-0.0020	
			[-1.45]	[-0.63]	[-1.04]	[-1.16]	[-0.88]	[-1.16]	
Gross replacement rate 3/4/6/				0.0572**	0.0421	0.0314	0.0816*	0.0314	0.0709
				[2.12]	[1.49]	[0.89]	[1.79]	[0.89]	[1.60]
Corporate income tax rate 3/4/					0.0002	0.0002	-0.0004	0.0002	
					[0.78]	[0.40]	[-0.86]	[0.40]	
Ratio of minimum wage to mean wage 3/4/						-0.0169	-0.0271*	-0.0169	-0.0194
						[-1.31]	[-1.92]	[-1.31]	[-1.23]
Employment protection index 3/4/7/							-0.0125**		-0.0053
							[-2.06]		[-0.82]
Observations	548	548	501	371	242	153	124	153	172
Number of countries	106	106	101	77	65	48	48	48	59

1/ Deviation from US level in a given year
2/ At the beginning of the period, for example for a 5-year period covering 2005-2009, 2004 value was used.
3/ 5-year period average
4/ Deviation from a PPP GDP-weighted sample average
5/ Financial Integration is one year before the beginning of a given 5-year period; growth is the average over the previous 5-year period
6/ Gross replacement rate is the average over 2 years of unemployment
7/ For OECD countries OECD employment protection index was used. For a broader sample an index was constructed as an out-of-sample forecast from the regression of the employment protection index on advance notice period and severance pay after 9 months. The latter two indicators are available for a large sample of advanced, emerging and developing countries (Aleksynska & Schindler, 2010)

Table 2. Current account and structural policies: random effects model with robust standard errors, structural variables are averages over the whole period, total sample

Depedent Variable=Current Account to GDP (5-year average)	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-1994	1995-2009
Log of GDP per capita 1/2/	0.0264***	0.0205***	0.0206***	0.0157***	0.0158***	0.0187***	0.0191***	0.0130	0.0263***
	[4.83]	[3.58]	[3.42]	[3.01]	[3.00]	[3.49]	[3.65]	[1.50]	[2.99]
Previous period growth 3/4/	0.0012	0.0014	0.0015	0.0016	0.0016	0.0017	0.0018	0.0009	-0.0009
	[1.17]	[1.31]	[1.35]	[1.31]	[1.31]	[1.45]	[1.51]	[0.26]	[-0.35]
Fiscal Balance to GDP 3/4/	0.3941***	0.3123***	0.3369***	0.3202**	0.3201**	0.2954**	0.2925**	0.1979**	0.2683
	[4.58]	[2.90]	[3.02]	[2.39]	[2.38]	[2.31]	[2.32]	[2.23]	[1.59]
Net foreign assets to GDP 2/	0.0211***	0.0194**	0.0193**	0.0228**	0.0226**	0.0277***	0.0283***	0.0209	0.0611***
	[3.34]	[2.47]	[2.29]	[2.49]	[2.40]	[3.11]	[3.18]	[1.53]	[3.33]
Old dependency ratio 2/4/	-0.3481***	-0.3966***	-0.4024***	-0.4652***	-0.4657***	-0.4644***	-0.4671***	-0.0167	-0.4961***
	[-4.07]	[-4.46]	[-4.39]	[-4.93]	[-4.92]	[-4.94]	[-5.00]	[-0.10]	[-3.39]
Young dependency ratio 2/4/	-0.0211	-0.0193	-0.0170	-0.0236	-0.0232	-0.0191	-0.0203	0.0647*	0.1191
	[-0.80]	[-0.79]	[-0.66]	[-0.88]	[-0.86]	[-0.76]	[-0.81]	[1.69]	[1.49]
Trade openness 2/	-0.0056	0.0032	0.0100	0.0114	0.0117	0.0080	0.0064	-0.0169	0.0155
	[-0.48]	[0.25]	[0.81]	[1.00]	[1.01]	[0.63]	[0.52]	[-1.17]	[1.06]
Increase in the old dependency ratio over 5 years	0.6131**	0.6208**	0.6741**	1.0845***	1.0905***	0.9556***	0.9197***	0.6809*	1.6603***
	[2.37]	[2.13]	[2.22]	[3.13]	[3.14]	[2.92]	[2.82]	[1.90]	[2.95]
Contemporaneous oil price*Oil producer 3/	0.0004**	0.0005**	0.0005**	0.0005**	0.0005**	0.0005**	0.0005**	0.0000	0.0004*
	[2.06]	[2.48]	[2.38]	[2.16]	[2.15]	[2.11]	[2.08]	[0.08]	[1.83]
Financial integration 2/	0.0034	0.0032	0.0030	0.0016	0.0015	0.0023	0.0027	0.0098	-0.0002
	[1.60]	[1.64]	[1.54]	[0.72]	[0.67]	[0.98]	[1.14]	[1.23]	[-0.09]
Financial integration*Previous period growth 5/	-0.0011***	-0.0013***	-0.0014***	-0.0013**	-0.0013**	-0.0013***	-0.0014***	0.0012	-0.0006
	[-2.81]	[-4.10]	[-4.00]	[-2.37]	[-2.36]	[-2.63]	[-2.69]	[0.33]	[-1.35]
Crerdit Market Regulation 4/6/	-0.0047**	-0.0081***	-0.0080***	-0.0059**	-0.0059***	-0.0070***	-0.0067***	-0.0001	-0.0088
	[-2.16]	[-3.11]	[-2.70]	[-2.29]	[-2.58]	[-3.07]	[-2.81]	[-0.04]	[-1.44]
Gross replacement rate 4/6/7/		0.0971***	0.0998***	0.0929**	0.0945**	0.1130***	0.1007**	0.0511	0.1128*
		[2.73]	[2.65]	[2.16]	[2.50]	[2.80]	[2.12]	[1.15]	[1.79]
Corporate income tax rate 4/6/			0.0005	0.0014**	0.0014**			0.0003	-0.0007
			[0.90]	[2.15]	[2.53]			[0.54]	[-0.67]
Ratio of minimum wage to mean wage 4/6/				-0.0400**	-0.0399**	-0.0325*	-0.0328*	-0.0122	-0.0669**
				[-2.42]	[-2.48]	[-1.89]	[-1.88]	[-0.69]	[-1.99]
Employment protection index 4/6/8/					-0.0004	-0.0048			
					[-0.07]	[-0.71]			
Doing business paying taxes rank 6/						0.0001*	0.0001*		
						[1.82]	[1.76]		
Observations	532	426	400	323	323	349	349	114	118
Number of countries	101	78	73	60	60	65	65	43	59

1/ Deviation from US level in a given year
2/ At the beginning of the period, for example for a 5-year period covering 2005-2009, 2004 value was used.
3/ 5-year period average
4/ Deviation from a PPP GDP-weighted sample average
5/ Financial Integration is one year before the beginning of a given 5-year period; growth is the average over the previous 5-year period
6/ Structural variable are country averages over all available years in a given period
7/ Gross replacement rate is the average over 2 years of unemployment
8/ For OECD countries OECD employment protection index was used. For a broader sample an index was constructed as an out-of-sample forecast from the regression of the employment protection index on advance notice period and severance pay after 9 months. The latter two indicators are available for a large sample of advanced, emerging and developing countries (Aleksynska & Schindler, 2010)

Table 3. Current account and structural policies: OLS with cluster robust standard errors, structural variables are averages over the whole period, total sample

Depedent Variable=Current Account to GDP (5-year average)	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-1994	1995-2009
Log of GDP per capita 1/2/	0.0215***	0.0149***	0.0143**	0.0113**	0.0111**	0.0146***	0.0153***	0.0113	0.0202**
	[4.51]	[2.90]	[2.58]	[2.16]	[2.09]	[2.87]	[3.07]	[1.35]	[2.31]
Previous period growth 3/4/	0.0017*	0.0016	0.0015	0.0018	0.0018	0.0020*	0.0021*	0.0009	-0.0003
	[1.72]	[1.48]	[1.43]	[1.45]	[1.44]	[1.72]	[1.79]	[0.26]	[-0.12]
Fiscal Balance to GDP 3/4/	0.3643***	0.3084***	0.3418***	0.3219**	0.3222**	0.2965**	0.2910**	0.1589*	0.2666
	[4.31]	[3.34]	[3.44]	[2.62]	[2.61]	[2.55]	[2.55]	[1.80]	[1.59]
Net foreign assets to GDP 2/	0.0339***	0.0347***	0.0354***	0.0383***	0.0386***	0.0431***	0.0429***	0.0338***	0.0661***
	[5.72]	[4.47]	[4.26]	[4.16]	[4.03]	[4.78]	[4.74]	[2.70]	[3.47]
Old dependency ratio 2/4/	-0.3061***	-0.3373***	-0.3240***	-0.4374***	-0.4378***	-0.4487***	-0.4504***	-0.0533	-0.6214***
	[-3.35]	[-4.19]	[-3.91]	[-5.12]	[-5.13]	[-5.22]	[-5.24]	[-0.31]	[-4.48]
Young dependency ratio 2/4/	-0.0204	-0.0238	-0.0216	-0.0318	-0.0313	-0.0281	-0.0294	0.0502	0.0442
	[-0.76]	[-1.03]	[-0.88]	[-1.19]	[-1.17]	[-1.16]	[-1.21]	[1.33]	[0.57]
Trade openness 2/	-0.0061	-0.0002	0.0042	0.0057	0.0060	0.0051	0.0034	-0.0184	0.0207
	[-0.54]	[-0.01]	[0.35]	[0.48]	[0.49]	[0.43]	[0.29]	[-1.44]	[1.67]
Increase in the old dependency ratio over 5 years	0.3301	0.4243	0.4938	0.8303**	0.8340**	0.7158**	0.6772*	0.4677	1.5275***
	[1.16]	[1.27]	[1.50]	[2.41]	[2.41]	[2.15]	[1.98]	[1.25]	[2.71]
Contemporaneous oil price*Oil producer 3/	0.0005**	0.0006***	0.0006***	0.0005**	0.0005**	0.0005**	0.0005**	0.0002	0.0005**
	[2.10]	[3.29]	[3.30]	[2.57]	[2.59]	[2.41]	[2.33]	[0.43]	[2.01]
Financial integration 2/	0.0061***	0.0047***	0.0048***	0.0044*	0.0043*	0.0050*	0.0054**	0.0122	0.0027
	[2.95]	[2.69]	[2.71]	[1.74]	[1.68]	[1.91]	[2.03]	[1.50]	[0.78]
Financial integration*Previous period growth 5/	-0.0016***	-0.0015***	-0.0016***	-0.0017***	-0.0017***	-0.0018***	-0.0018***	0.0009	-0.0014**
	[-4.21]	[-5.29]	[-5.40]	[-3.05]	[-3.05]	[-3.57]	[-3.58]	[0.26]	[-2.15]
Crerdit Market Regulation 4/6/	-0.0039**	-0.0069***	-0.0066**	-0.0050**	-0.0052**	-0.0064***	-0.0061***	-0.0006	-0.0082
	[-2.04]	[-3.04]	[-2.57]	[-2.21]	[-2.51]	[-3.05]	[-2.76]	[-0.32]	[-1.39]
Gross replacement rate 4/6/7/		0.0789**	0.0760**	0.0768**	0.0798**	0.0955***	0.0837*	0.0492	0.1009*
		[2.46]	[2.30]	[2.01]	[2.46]	[2.81]	[2.00]	[1.18]	[1.70]
Corporate income tax rate 4/6/			0.0006	0.0010*	0.0010*			0.0002	-0.0005
			[1.23]	[1.75]	[2.00]			[0.36]	[-0.52]
Ratio of minimum wage to mean wage 4/6/				-0.0348**	-0.0344**	-0.0287*	-0.0293*	-0.0089	-0.0684**
				[-2.30]	[-2.36]	[-1.80]	[-1.81]	[-0.53]	[-2.13]
Employment protection index 4/6/8/					-0.0010	-0.0043			
					[-0.19]	[-0.70]			
Doing business paying taxes rank 6/						0.0001*	0.0001*		
						[1.74]	[1.68]		
Observations	532	426	400	323	323	349	349	114	118
R-squared	0.371	0.399	0.401	0.368	0.368	0.363	0.361	0.311	0.549

1/ Deviation from US level in a given year
2/ At the beginning of the period, for example for a 5-year period covering 2005-2009, 2004 value was used.
3/ 5-year period average
4/ Deviation from a PPP GDP-weighted sample average
5/ Financial Integration is one year before the beginning of a given 5-year period; growth is the average over the previous 5-year period
6/ Structural variable are country averages over all available years in a given period
7/ Gross replacement rate is the average over 2 years of unemployment
8/ For OECD countries OECD employment protection index was used. For a broader sample an index was constructed as an out-of-sample forecast from the regression of the employment protection index on advance notice period and severance pay after 9 months. The latter two indicators are available for a large sample of advanced, emerging and developing countries (Aleksynska & Schindler, 2010)

Table 4. Current account and structural policies: random effects model with robust standard errors, structural variables are averages over 5 year periods, OECD sample

Depedent Variable=Current Account to GDP (5-year average)	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009
Log of GDP per capita 1/2/	0.0372**	0.0401**	0.0402**	0.0384*	0.0444**	0.0127	0.0140	0.0207
	[2.05]	[2.28]	[2.12]	[1.94]	[2.29]	[0.89]	[0.80]	[0.92]
Previous period growth 3/4/	-0.0021	-0.0005	-0.0005	-0.0007	-0.0022	0.0006	0.0012	0.0015
	[-1.09]	[-0.21]	[-0.27]	[-0.31]	[-0.97]	[0.37]	[0.56]	[0.70]
Fiscal Balance to GDP 3/4/	0.2813**	0.2814**	0.2796**	0.2928**	0.3608***	0.3052*	0.1279	0.1275
	[2.21]	[2.16]	[2.16]	[2.24]	[2.70]	[1.66]	[0.69]	[0.67]
Net foreign assets to GDP 2/	0.0291	0.0307	0.0304	0.0348	0.0310	0.0311**	0.0530***	0.0692***
	[1.41]	[1.35]	[1.33]	[1.50]	[1.31]	[2.32]	[3.96]	[5.90]
Old dependency ratio 2/4/	0.0055	-0.0562	-0.0588	-0.0376	-0.0430	0.0862	0.0525	-0.1104
	[0.05]	[-0.47]	[-0.46]	[-0.27]	[-0.28]	[0.66]	[0.40]	[-0.55]
Young dependency ratio 2/4/	0.1513**	0.1422**	0.1447*	0.1843***	0.1483**	0.0994*	0.1431	0.1367
	[2.14]	[1.98]	[1.88]	[2.76]	[2.33]	[1.94]	[1.61]	[1.21]
Trade openness 2/	0.0261*	0.0295**	0.0295**	0.0346***	0.0420***	0.0380***	0.0527***	0.0534***
	[1.95]	[2.18]	[2.00]	[2.71]	[3.44]	[2.96]	[3.61]	[3.36]
Increase in the old dependency ratio over 5 years	0.5264**	0.4982*	0.4958*	0.5353*	0.5232*	0.9795***	1.5232***	1.6074***
	[1.97]	[1.76]	[1.76]	[1.89]	[1.85]	[4.05]	[4.00]	[4.19]
Contemporaneous oil price*Oil producer 3/	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0002	0.0001
	[0.94]	[0.81]	[0.80]	[0.34]	[0.45]	[0.64]	[1.61]	[0.53]
Financial integration 2/		0.0002	0.0001	-0.0004	-0.0004	-0.0017	-0.0029**	-0.0018
		[0.08]	[0.06]	[-0.22]	[-0.23]	[-1.49]	[-2.28]	[-1.10]
Financial integration*Previous period growth 5/		-0.0008**	-0.0008**	-0.0007**	-0.0006	-0.0004	-0.0007**	-0.0010***
		[-2.07]	[-1.98]	[-1.97]	[-1.59]	[-1.35]	[-2.04]	[-3.81]
Crerdit Market Regulation 3/4/			0.0002	0.0004	-0.0027	-0.0020	0.0016	0.0014
			[0.09]	[0.15]	[-0.73]	[-0.69]	[0.27]	[0.20]
Gross replacement rate 3/4/6/				0.0090	-0.0043	-0.0128	0.0282	0.0384
				[0.32]	[-0.16]	[-0.46]	[0.46]	[0.83]
Corporate income tax rate 3/4/					0.0003	0.0006	0.0005	0.0001
					[0.61]	[0.90]	[0.52]	[0.07]
Ratio of minimum wage to mean wage 3/4/						0.0192	-0.0020	-0.0271
						[0.77]	[-0.09]	[-1.25]
Employment protection index 3/4/7/							-0.0041	-0.0121
							[-0.39]	[-1.14]
Regulation in energy transport and communication 3/4								0.0048
								[0.72]
Observations	160	160	160	148	142	97	68	66
Number of countries	27	27	27	26	26	19	19	19

1/ Deviation from US level in a given year
2/ At the beginning of the period, for example for a 5-year period covering 2005-2009, 2004 value was used.
3/ 5-year period average
4/ Deviation from a PPP GDP-weighted sample average
5/ Financial Integration is one year before the beginning of a given 5-year period; growth is the average over the previous 5-year period
6/ Gross replacement rate is the average over 2 years of unemployment
7/ For OECD countries OECD employment protection index was used. For a broader sample an index was constructed as an out-of-sample forecast from the regression of the employment protection index on advance notice period and severance pay after 9 months. The latter two indicators are available for a large sample of advanced, emerging and developing countries (Aleksynska & Schindler, 2010)

Table 5. Current account and structural policies: random effects model with robust standard errors, structural variables are averages over the whole period, OECD sample

Depedent Variable=Current Account to GDP (5-year aver	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009	1975-2009
Log of GDP per capita 1/2/	0.0407*	0.0302	0.0168	0.0089	0.0185	0.0227	0.0153	0.0185	0.0133	0.0113
	[1.67]	[1.30]	[0.62]	[0.30]	[0.71]	[1.16]	[0.76]	[0.71]	[0.67]	[0.65]
Previous period growth 3/4/	-0.0005	-0.0010	0.0002	0.0004	0.0002	0.0005	0.0007	0.0002	0.0007	0.0007
	[-0.23]	[-0.42]	[0.08]	[0.16]	[0.10]	[0.19]	[0.31]	[0.10]	[0.33]	[0.30]
Fiscal Balance to GDP 3/4/	0.2807**	0.2643**	0.0893	0.0746	0.0795	0.1092	0.0971	0.0795	0.0717	0.0831
	[2.13]	[1.98]	[0.59]	[0.48]	[0.51]	[0.72]	[0.65]	[0.51]	[0.55]	[0.59]
Net foreign assets to GDP 2/	0.0302	0.0330	0.0612***	0.0641***	0.0666***	0.0665***	0.0712***	0.0666***	0.0728***	0.0720***
	[1.34]	[1.44]	[4.42]	[4.82]	[5.29]	[4.49]	[4.57]	[5.29]	[5.74]	[5.44]
Old dependency ratio 2/4/	-0.0606	-0.0893	-0.2026*	-0.2107*	-0.2047*	-0.3575***	-0.4064***	-0.2047*	-0.3607***	-0.3429***
	[-0.47]	[-0.72]	[-1.77]	[-1.73]	[-1.69]	[-2.64]	[-3.07]	[-1.69]	[-2.83]	[-3.62]
Young dependency ratio 2/4/	0.1438**	0.1384**	0.0557	0.0612*	0.0719**	0.0503*	0.0389	0.0719**	0.0465*	0.0491*
	[1.96]	[2.08]	[1.41]	[1.96]	[2.14]	[1.87]	[1.45]	[2.14]	[1.80]	[1.69]
Trade openness 2/	0.0299**	0.0321**	0.0373***	0.0377***	0.0378***	0.0385***	0.0323***	0.0378***	0.0360***	0.0388***
	[2.10]	[2.38]	[2.88]	[3.11]	[2.89]	[3.55]	[3.36]	[2.89]	[3.61]	[3.41]
Expected increase in the old dependency ratio	0.4963*	0.4769*	0.7237**	0.7191*	0.7086*	1.0304**	0.9610**	0.7086*	0.9749**	0.9351**
	[1.75]	[1.65]	[2.00]	[1.89]	[1.94]	[2.22]	[2.14]	[1.94]	[2.09]	[2.07]
Contemporaneous oil price*Oil producer 3/	0.0002	0.0002	0.0001	0.0001	0.0000	0.0002	0.0002	0.0000	0.0002	0.0001
	[0.81]	[0.78]	[0.66]	[0.53]	[0.25]	[0.94]	[1.08]	[0.25]	[0.99]	[0.65]
Financial integration 2/	0.0001	-0.0001	-0.0014	-0.0017	-0.0018	-0.0015	-0.0015	-0.0018	-0.0015	-0.0014
	[0.06]	[-0.03]	[-0.99]	[-1.41]	[-1.42]	[-1.03]	[-1.07]	[-1.42]	[-1.21]	[-1.06]
Financial integration*Previous period growth 5/	-0.0008*	-0.0007*	-0.0009***	-0.0009***	-0.0010***	-0.0012***	-0.0013***	-0.0010***	-0.0012***	-0.0011***
	[-1.88]	[-1.84]	[-3.05]	[-3.28]	[-3.57]	[-2.94]	[-2.97]	[-3.57]	[-3.21]	[-2.72]
Crerdit Market Regulation 4/6/	-0.0001	0.0006	-0.0003	-0.0039	-0.0032	-0.0011	-0.0012	-0.0032	-0.0044	-0.0031
	[-0.02]	[0.10]	[-0.06]	[-0.67]	[-0.44]	[-0.16]	[-0.22]	[-0.44]	[-1.03]	[-0.72]
Gross replacement rate 4/6/7		0.0367	0.0226	0.0804*	0.0821**	0.0785*	0.0808**	0.0821**	0.0823**	0.0777*
		[0.81]	[0.58]	[1.95]	[2.00]	[1.87]	[2.01]	[2.00]	[2.27]	[1.82]
Corporate income tax rate 4/6/			0.0011	0.0012		0.0006	0.0008		0.0011	0.0011
			[0.99]	[1.18]		[0.81]	[1.24]		[1.41]	[1.38]
Ratio of minimum wage to mean wage 4/6/			-0.0386***	-0.0468***	-0.0483***	-0.0649***	-0.0658***	-0.0483***	-0.0507***	-0.0511***
			[-3.00]	[-3.42]	[-2.96]	[-3.99]	[-4.70]	[-2.96]	[-3.83]	[-4.15]
Employment protection index 4/6/8/				-0.0121*	-0.0123	-0.0126**	-0.0150**	-0.0123	-0.0134**	-0.0134**
				[-1.72]	[-1.48]	[-2.06]	[-2.43]	[-1.48]	[-2.02]	[-2.04]
Doing business paying taxes rank 6/					0.0000			0.0000		
					[0.26]			[0.26]		
Labor tax wedge 4/6/						0.0007	0.0006		0.0007	0.0006
						[1.15]	[0.97]		[1.40]	[1.41]
Regulation in professional services 4/6/						-0.0058	-0.0041		-0.0029	
						[-1.08]	[-0.67]		[-0.55]	
Regulation in retail trade 4/6/						0.0020	0.0029			0.0021
						[0.41]	[0.64]			[0.50]
Product market regulation 4/6/						0.0139				
						[0.83]				
Regulation in energy transport and communication 4/6/							0.0097			
							[1.43]			
Observations	160	157	115	115	115	115	115	115	115	115
Number of countries	27	26	19	19	19	19	19	19	19	19

1/ Deviation from US level in a given year
2/ At the beginning of the period, for example for a 5-year period covering 2005-2009, 2004 value was used.
3/ 5-year period average
4/ Deviation from a PPP GDP-weighted sample average
5/ Financial Integration is one year before the beginning of a given 5-year period; growth is the average over the previous 5-year period
6/ Structural variable are country averages over all available years in a given period
7/ Gross replacement rate is the average over 2 years of unemployment
8/ For OECD countries OECD employment protection index was used. For a broader sample an index was constructed as an out-of-sample forecast from the regression of the employment protection index on advance notice period and severance pay after 9 months. The latter two indicators are available for a large sample of

Table 6. Current account and structural policies (interaction with fundamentals): random effects model with robust standard errors, structural variables are averages over the whole period, total sample

Depedent Variable=Current Account to GDP (5-year average)	1975-2009	1975-2009	1975-2009	1975-1994	1995-2009
Log of GDP per capita 1/2/	0.0130**	0.0102*	0.0134***	0.0111	0.0200**
	[2.53]	[1.95]	[2.74]	[1.45]	[2.07]
Previous period growth 3/4/	0.0011	0.0008	0.0016	0.0012	-0.0037
	[0.60]	[0.59]	[1.24]	[0.49]	[-1.60]
Fiscal Balance to GDP 3/4/	0.3104**	0.2932***	0.2846**	0.1732*	0.2735*
	[2.43]	[2.67]	[2.55]	[1.81]	[1.69]
Net foreign assets to GDP 2/	0.0237**	0.0297***	0.0424***	0.0268**	0.0769***
	[2.41]	[2.91]	[5.44]	[2.19]	[5.03]
Old dependency ratio 2/4/	-0.4416***	-0.3271***	-0.4353***	-0.0229	-0.4896***
	[-4.86]	[-3.83]	[-5.21]	[-0.14]	[-3.48]
Young dependency ratio 2/4/	-0.0238	-0.0237	-0.0265	0.0463	0.0566
	[-0.89]	[-1.03]	[-1.04]	[1.22]	[0.80]
Trade openness 2/	0.0083	0.0222**	0.0050	-0.0171	0.0102
	[0.73]	[1.97]	[0.45]	[-1.00]	[0.51]
Increase in the old dependency ratio over 5 years	1.0614***	1.2362***	1.0508***	0.8079**	1.5315**
	[3.16]	[3.47]	[3.29]	[2.37]	[2.48]
Contemporaneous oil price*Oil producer 3/	0.0005**	0.0005**	0.0005**	-0.0002	0.0004*
	[2.26]	[2.57]	[2.39]	[-0.63]	[1.69]
Financial integration 2/	0.0020	-0.0005	0.0018	0.0099	-0.0020
	[0.90]	[-0.24]	[0.96]	[1.16]	[-1.14]
Financial integration*Previous period growth 5/	-0.0013**	-0.0009*	-0.0014***	0.0001	-0.0001
	[-2.16]	[-1.75]	[-3.35]	[0.03]	[-0.21]
Crerdit Market Regulation 4/6/	-0.0053**	-0.0078***	-0.0059***	-0.0008	-0.0105***
	[-2.34]	[-3.32]	[-3.11]	[-0.34]	[-2.79]
Gross replacement rate 4/6/7/	0.0843**	0.1031*	0.1275***	0.0385	0.1962***
	[2.38]	[1.68]	[4.41]	[0.81]	[3.91]
Corporate income tax rate 4/6/	0.0015***	0.0018***	0.0011**	0.0003	-0.0004
	[2.81]	[2.82]	[2.10]	[0.39]	[-0.53]
Ratio of minimum wage to mean wage 4/6/	-0.0495***	-0.0725***	-0.0460***	-0.0388**	-0.0565**
	[-3.37]	[-3.22]	[-3.43]	[-2.07]	[-1.98]
Employment protection index 4/6/8/	-0.0004	-0.0076**	-0.0027	0.0018	-0.0002
	[-0.07]	[-2.01]	[-0.62]	[0.30]	[-0.03]
Crerdit Market Regulation*Previous period growth 3/4/6/	-0.0002				
	[-0.30]				
Gross replacement rate*Previous period growth 3/4/6/7/	-0.0145	-0.0175**	-0.0166**	-0.0115	-0.0257**
	[-1.43]	[-2.21]	[-2.17]	[-1.21]	[-2.05]
Corporate income tax rate*Previous period growth 3/4/6/	0.0003	0.0003	0.0004**	0.0001	0.0003
	[1.26]	[1.60]	[1.96]	[0.57]	[0.72]
Ratio of minimum wage to mean wage*Previous period growth 3/4/6/	-0.0119**	-0.0109**	-0.0110**	-0.0136***	-0.0199**
	[-2.26]	[-2.11]	[-2.24]	[-2.75]	[-2.01]
Employment protection index*Previous period growth 3/4/6/8/	-0.0003				
	[-0.19]				
Ratio of minimum wage to mean wage*Financial integration 2/4/6/		0.0034			
		[0.38]			
Gross replacement rate*Trade openness 2/4/6/7/		0.0901			
		[1.25]			
Gross replacement rate*Net foreign assets to GDP 2/4/6/7/		0.1560***	0.2037***	0.0632	0.2415**
		[2.96]	[4.66]	[0.86]	[2.44]
Observations	323	323	323	116	118
Number of countries	60	60	60	44	59

1/ Deviation from US level in a given year
2/ Fundamentals are included as of the beginning of the period, for example for a 5-year period covering 2005-2009, 2004 value was used.
3/ Fundamentals are included as 5-year period averages
4/ Deviation from a PPP GDP-weighted sample average
5/ Financial Integration is one year before the beginning of a given 5-year period; growth is the average over the previous 5-year period
6/ Structural variable are country averages over all available years in a given period
7/ Gross replacement rate is the average over 2 years of unemployment
8/ For OECD countries OECD employment protection index was used. For a broader sample an index was constructed as an out-of-sample forecast from the regression of the employment protection index on advance notice period and severance pay after 9 months. The latter two indicators are available for a large sample of advanced, emerging and developing countries (Aleksynska & Schindler, 2010)

Table 7. Structural Indicators: Germany in Comparison

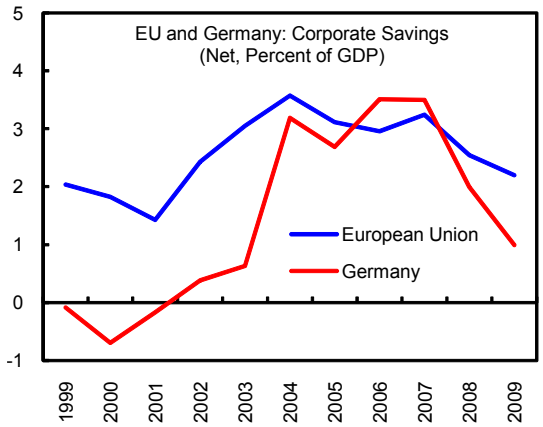
	Latest Available Year	United States 1/	France	Spain	Japan	Germany	OECD Average
Credit Market Regulation 1/	2008	7.7	9.2	9.3	8.9	8.2	9.0
Combined Corporate Income Tax Rate 2/	2009	39	34	30	40	30	26
Average Labor Tax Wedge (single earner w/o children at 100 percent of average wage)	2009	29	49	38	29	51	36
Doing business rank on paying taxes	2009	54	55	86	115	80	NA
Unemployment Gross Replacement Rate 3/	2008	55	66	61	54	60	56
Product Market regulation	2008	0.8	1.5	1.0	1.1	1.3	1.4
Regulation in Professional Services	2008	1.1	2.1	2.1	1.5	2.9	2.0
Regulation in Retail Trade	2008	2.6	3.1	2.7	2.4	2.4	2.4
Regulation in Energy Transport and Communication	2007	1.8	2.2	1.6	2.2	1.1	2.1
Employment Protection Regulation	2008	0.2	2.5	2.5	1.9	3.0	2.2
Ratio of minimum wage to mean wage 4/	2005	0.3	0.5	0.2	0.4	0.0	0.3

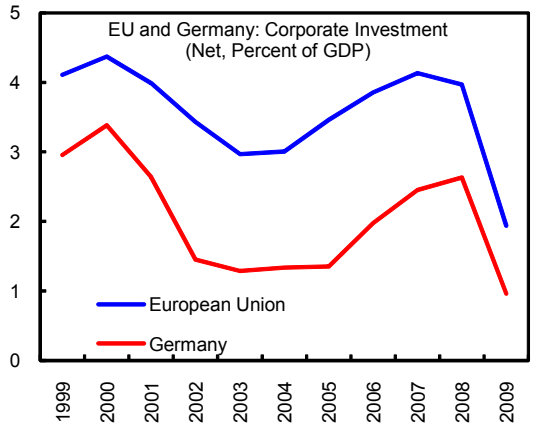
1/ Higher value means les regulated. For the United States the index declined from 8.9 to 7.7 between 2007 and 2008.
2/The regression included federal corporate income tax rate, which was available for a wide set of countries. The table presents combined corporate income tax rate, including sub-central tax rates, which provides a better assessment of the actual tax burden on corporations.

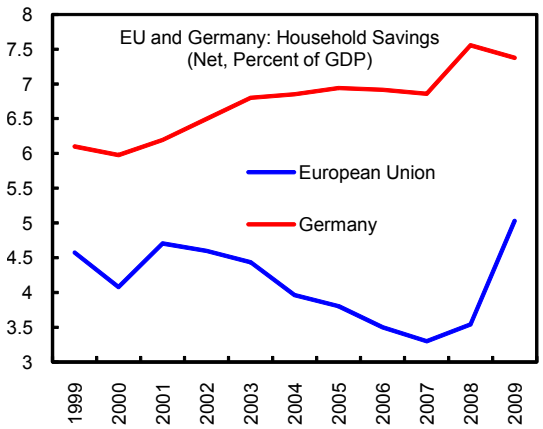
3/ The regression included a two-year average unemployment gross replacement ratio, which was available for a wide set of countries but the series ended in 2005. The table presents unemployment net replacement ratio for a single person, no children, at 100 percent of average wage, which is available for OECD countries up to 2008.

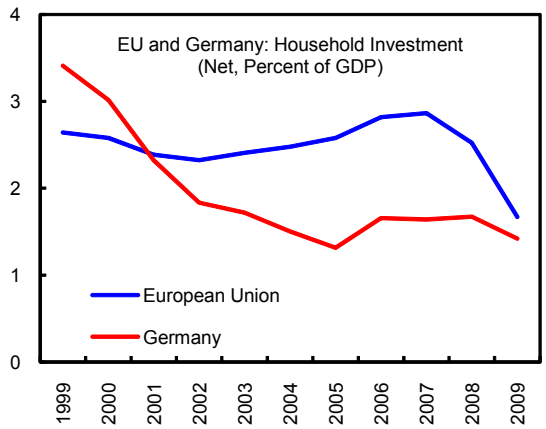
4/ While Germany has no minimum wage in most sectors except for construction workers, electrical workers and some others, the de facto floor may be higher as wages are set by collective bargaining agreements and enforceable by law.

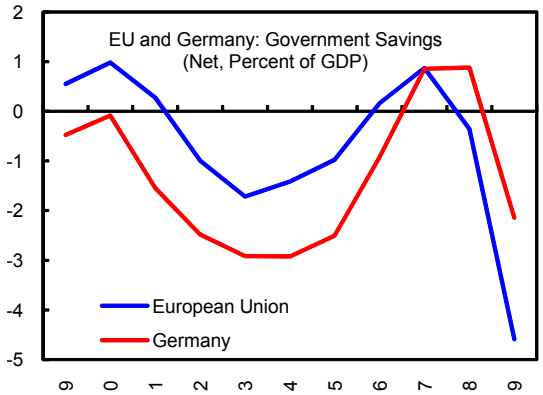
Panel 1. Germany and EU: Savings and Investment by Sector

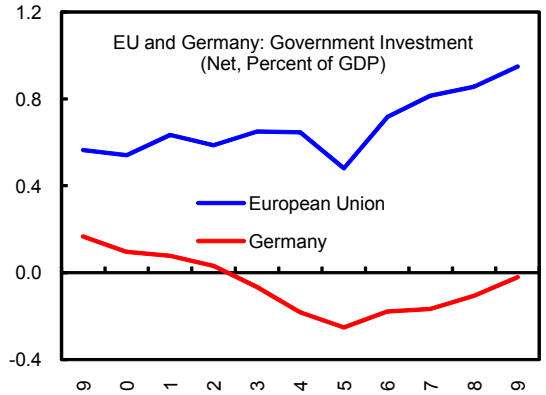












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Appendix. Data Description

The analysis included a sample of 106 advanced, emerging and developing countries with the population exceeding one million. The OECD sample included 27 countries. The new EU member states are included starting from the year 1994 to avoid structural breaks. Most of the traditional variables determining the current account were computed following Abiad, Leigh, and Mody (2009).

The current account as a ratio to GDP was taken from the Annual Macroeconomic Database (AMECO) of the European Commission's Directorate General for Economic and Financial Affairs (http://ec.europa.eu/economy_finance/indicators_en.htm) where available, and from the IMF's WEO database in other cases. Income per capita is real PPP GDP per capita in 2005 constant prices with 1996 reference year from Penn World Tables 6.3 up to year 2007 (http://pwt.econ.upenn.edu). The rest of the years were extrapolated using per capita real GDP growth from the IMF's World Economic Outlook (WEO) database. Fiscal balance as a share of GDP was computed as general government net lending/borrowing from the IMF's World Economic Outlook database where available, otherwise general government overall fiscal balance was used from the same database. Net foreign assets as a ratio to GDP were computed as foreign assets minus foreign liabilities divided by GDP. All the variables are from the External Wealth of Nations (1970–2007) database, which can be downloaded from http://www.philiplane.org/EWN.html. Financial integration was computed as the sum of foreign assets and foreign liabilities divided by GDP from the same data source.

Old (young) dependency ratios were computed using the data from the World Development Indicators (WDI) database. The old (young) dependency ratio was defined as the ratio of the population aged above 64 (below 15) relative to the population aged 15–64. The increase in the old dependency ratio was computed over the five-year period (see below) to capture the underlying demographic trend. Trade openness is calculated as the sum of exports and imports divided by GDP; it is obtained from the Penn World Tables 6.3 database ('openc'/100). Oil price is taken from IMF's WEO database

Several macroeconomic variables (current account to GDP ratio, GDP per capita growth, fiscal balance, oil price) were averaged over the 5-year non-overlapping periods, namely, 1975–79, 1980–84, 1985–89, 1990–94, 1995–99, 2000–04, and 2005–09. Other variables were included as of the year preceding the beginning of the five-year period e.g. 2004 for the period 2005–09. Many of the variables were also included as the deviations from the PPP-weighted sample average (growth, fiscal balance, young and old dependency ratios) while real GDP per capita was computed as the ratio to the US real GDP per capita in a given year.

Credit market regulation is obtained from the Fraser Institute (http://www.freetheworld.com/) and comprises an index consisting of four components measuring the degree of public

ownership of the banking system, control of interest rates, percentage of credit extended to private sector, and competition from foreign banks. The index ranges between zero and 10 with the higher values implying less regulation.

The gross unemployment replacement rate is obtained from Aleksynska and Schindler (2011) and is the average of the gross unemployment replacement rates over two years of unemployment. The ratio of minimum wage to mean wage is taken from the same database. Employment protection indicator for OECD countries was obtained from OECD database (http://www.oecd.org). For other countries employment protection index was constructed as an out-of sample forecast from the regression of the OECD employment protection index on the measures of the stipulated advance notice period (in months) and severance pay after nine months (in months), which were obtained from Aleksynska & Schindler, 2010.

For OECD countries central government corporate income tax rates were obtained from the OECD database. The corporate income tax rate comprises the basic central government statutory (flat or top marginal) corporate income tax rate, measured gross of a deduction if any for sub-central tax. The corporate income tax rate for other countries was obtained from the IMF Fiscal Affairs Corporate Income Tax rate database. The indicator of doing business paying taxes is a country's rank among 183 countries based on the indicator that combines measures of the level of taxes and mandatory contributions that a medium-size company must pay in a given year with the measures of the administrative burden of paying taxes and contributions. The data is available at http://www.doingbusiness.org/rankings. Labor tax wedge for OECD countries is a total tax wedge of the average earner from OECD database. It is computed as a combined central and sub-central government income tax plus employee and employer social security contribution taxes and expressed as a percentage of labor costs defined as gross wage earnings plus employer social security contributions. The tax wedge is also adjusted for cash transfers. The indicators of product market regulation, regulation in energy transport and communication as well as regulation in professional services and retail trade are available only for OECD from OECD database.

The indicators of product market regulation are a comprehensive and internationally comparable set of indicators that measure the degree to which policies promote or inhibit competition in areas of the product market. This indicator is available only for a subset of years, namely, 1998, 2003, and 2008. When structural variables were included as time-varying the values for available years were assigned to the corresponding five-year periods. The OECD indicator of regulation in energy, transport and communications (ETCR) summarizes regulatory provisions in seven sectors**:** telecoms, electricity, gas, post, rail, air passenger transport**,** and road freight. While this indicator is not as broad as that of product market regulation, it is available as longer time-series, namely, annual data for the period 1975–2007 with gaps for some countries. The data in available years were attributed to the five-year periods.

The indicator of regulation in professional services covers entry and conduct regulation in the legal, accounting, engineering, and architectural professions. The indicator of regulation in retail trade covers barriers to entry, operational restrictions, and price controls in retail distribution. Both of these indicators are available for the years 1996, 2003, and 2008 and in econometric analysis the data for available years were assigned to the corresponding five-year periods.