

Preliminary: Please do not cite

Hitting Targets: Rebalancing Through the Real Exchange Rate and Fiscal Policy

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August 2012

Abstract: Rebalancing current accounts requires some combination of changes in the real exchange rate and the fiscal balance. We estimate the magnitude of these adjustments in a ten country panel using annual data for the 1995 – 2007 period. The panel includes six countries that tended to have deficits over this period (Australia, Canada, France, Italy, the United States, and the United Kingdom) and four that tended to have surpluses (China, Germany, Japan, and Korea). We estimate both OLS and instrumental variables regressions and obtain the effect of the real exchange rate, the structural fiscal balance, and other variables on the change in the current account to GDP ratio. We then use these estimates to calculate the relationship between the change in the real exchange rate and the change in the structural fiscal balance required to bring about a one percentage point CA/GDP rebalancing. We find that the real exchange rate adjustment alone would require very large changes, and a more plausible path includes both changes in the real exchange rate and changes in the structural fiscal deficit.

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¹ The views in this paper are solely the responsibility of the authors and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System, the U.S. Treasury, or of any other person associated with the Federal Reserve System or the U.S. Treasury.

I. Introduction

While Herbert Stein's famous dictum "Anything that can't go on forever won't." promises that unsustainable current account balances will eventually reverse, this basic truth provides no insight about the duration of current account imbalances, nor about the manner in which the reversal occurs. Economists have analyzed the consequences of current account reversals, most notably in terms of the real exchange rate movement consistent with balancing the United States current account. Calibrations by Obstfeld and Rogoff (2000, 2005) predicted that the large United States current account deficits of the early years of this century would require a depreciation of the dollar on the order of 40 percent.

In the wake of the Great Recession, policy focus has shifted from the current account imbalance of the United States alone to the more general issue of rebalancing current account deficits and surpluses among major economies. This reflects the generally tepid recovery from the Great Recession as well as the return of large current account imbalances amongst major economies after the temporary narrowing of these imbalances during the height of the crisis. Various communiqués from G-20 meetings have stated that this rebalancing is necessary for strong and sustained growth. For example, the February 2012 communiqué from Finance Ministers at the Mexico City summit stated: "Structural problems, insufficient global rebalancing, a persistent development gap and high levels of public and private indebtedness and uncertainty continue weighing on medium-term global growth prospects."

Rebalancing cannot occur in isolation, however. Current account movements have implications for the real exchange rate. But the size of the change in the real exchange rate consistent with a given move in the current account towards balance depends upon other factors as well, most importantly the change in the government budget balance. As highlighted in the communiqué cited above, there is ongoing concern with government budget deficits in the wake of the fiscal expansions that arose during the Great Recession. Rebalancing in the presence of government deficit reduction has different implications for the real exchange rate than does rebalancing under an assumption of no change in a country's fiscal stance.

This paper illustrates the extent of the impact of changes in fiscal balances on the real exchange rate change consistent with rebalancing. The results are based on an empirical analysis of the links between the current account, the real exchange rate, and fiscal balances. Implications of these empirical results are presented through a device introduced in this paper, the *iso-rebalancing schedule*. This schedule shows the estimated combinations of changes in the fiscal balance and changes in the real exchange rate required to attain a given level of rebalancing. The combination obviously differs between surplus and deficit countries; surplus countries require some combination of real exchange rate appreciation and fiscal expansion to bring about a smaller current account surplus while deficit countries require some combination of real exchange rate depreciation and fiscal contraction.

The analysis in this paper can be interpreted in two distinct ways, depending upon how one views both the tools available to governments and their goals. One use of the analysis is that the iso-rebalancing schedule shows the set of real exchange rate / fiscal balance combinations governments must pursue in order to achieve rebalancing goals. In this interpretation, both the real exchange rate and the fiscal balance are subject to some degree of government control – perhaps because the government manages the exchange rate and its real effective exchange rate is correlated with a particular bilateral nominal rate. Alternatively, one can interpret the iso-rebalancing schedule by taking as given projections of fiscal deficit reduction and then use the

analysis to show the change in the real exchange rate consistent with rebalancing goals. We use WEO projections of fiscal balances to investigate this issue.

The next section of this paper provides a context for our analysis by presenting some statistics on the current accounts, fiscal deficits, and the real exchange rates of major economies. The following section includes our empirical analysis of the links between the current account, fiscal balances, and the real exchange rate. The fourth section uses the empirical results to develop our iso-rebalancing schedules, and draws policy implications of this analysis. Some concluding remarks are offered in the final section.

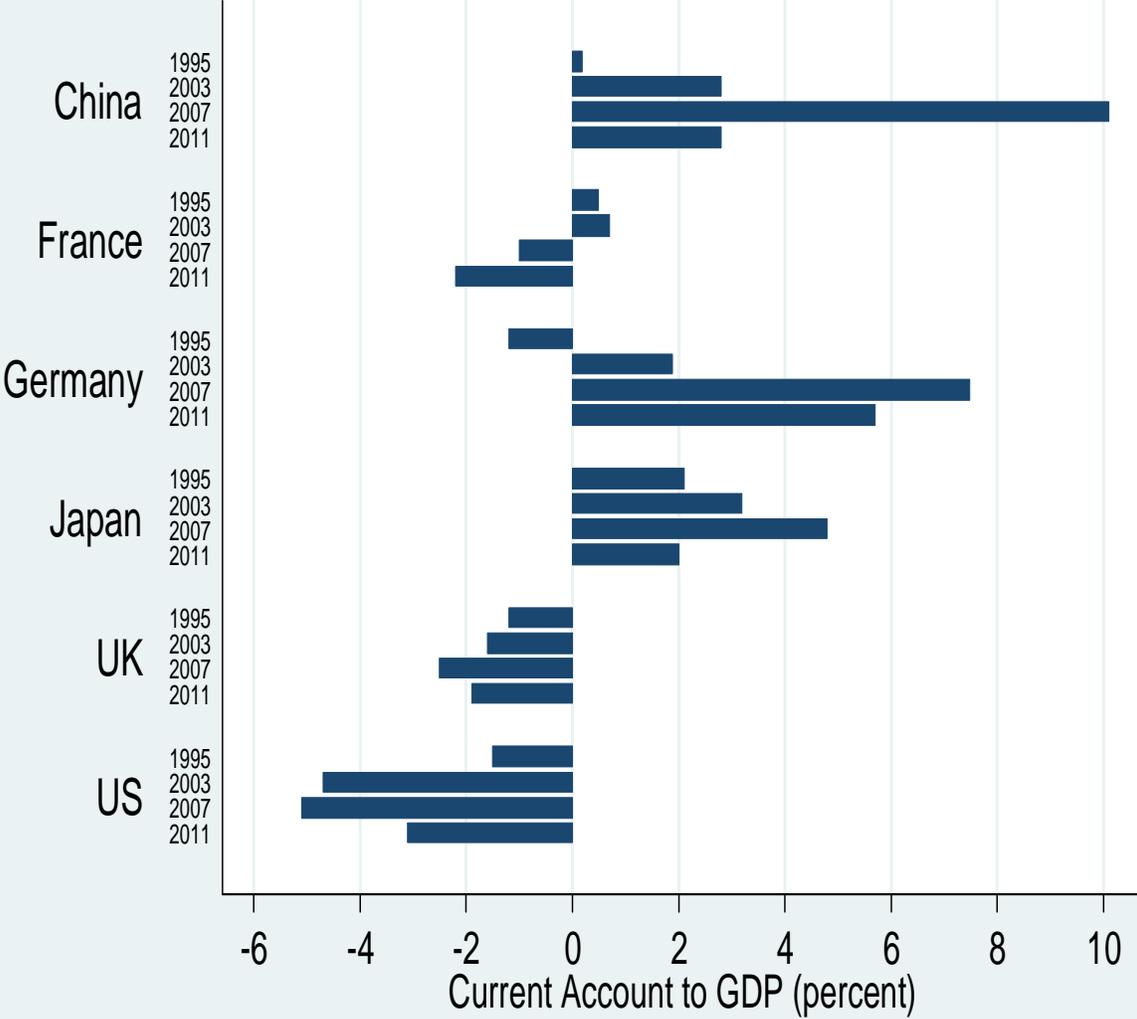
I. Current Accounts, Fiscal Balances, and Real Exchange Rates Before and During the Great Recession

One impetus behind the call for rebalancing was the dramatic departure from current account balance in major economies between the mid-1990s and the onset of the financial crisis. This is illustrated in Figure 1, which shows the current account-to-GDP ratios in 1995, 2003, 2007, and 2011 for China, France, Germany, Japan, the United Kingdom and the United States. In 1995, the range of these ratios for these six countries was -1.5 percent (for the United States) to 2.1 percent (for Japan). This range widened to -4.7 percent (US) to 3.2 percent (Japan) in 2003, and widened further to -5.1 percent (the US again) to 10.1 percent (China) in 2007.

Current account imbalances shrunk in 2008 and 2009 due to the trade contraction of the Great Recession. Subsequent re-emergence of imbalances, as well as the need for stimulus from surplus countries, have been another reason for recent calls for rebalancing. Figure 1 shows that, in 2011, current account imbalances range from -3.1 percent (for the United States) to 5.7 percent (for Germany). As shown in Figure 1, the 2011 current account imbalances are smaller than the 2007 values for all countries represented in the chart except France; however, the 2011 values are bigger than the 2003 imbalances for the German surplus and for the British deficit.

Along with calls for rebalancing, communiqués have also included calls for reductions in fiscal deficits, such as the one from the May 2010 G20 Toronto Summit. This reflects a reaction to the expansion of these deficits in the wake of the Great Recession. Figure 2 shows both overall and structural fiscal deficits for France, Germany, Japan, the United Kingdom and the United States in the same years as those represented in Figure 1. Japan, the United Kingdom and the United States had larger overall and structural fiscal deficits in 2011 than in any of the other three years represented in the figure. The French overall deficit was larger in 2011 than in 2003 or 2007, but its structural deficit is actually smaller in 2011 than in 2003. Germany is clearly an outlier among these five countries; it had the smallest overall fiscal deficit of the five in 2011 and its structural deficit in 2011 is actually smaller than its structural deficit in any of the other years depicted in the figure.

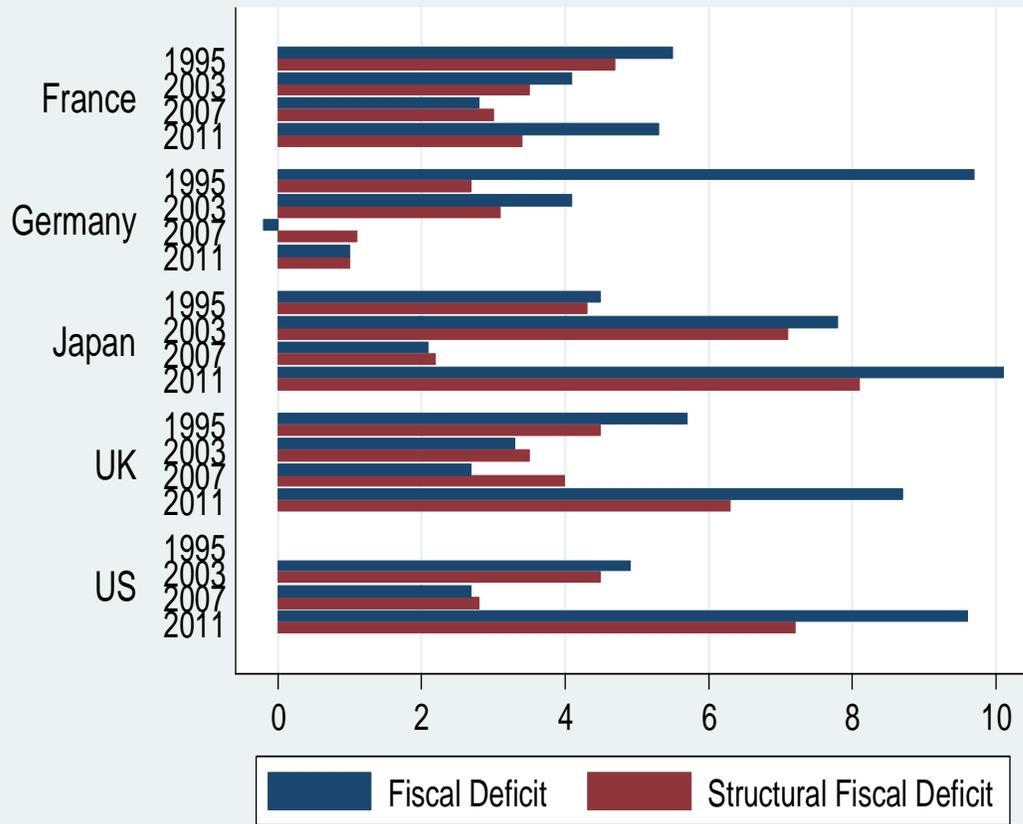
Figure 1: Current Account to GDP
 1995, 2003, 2007 & 2011



Source: IMF WEO, April 2012

Figure 2: Actual and Structural Fiscal Deficits

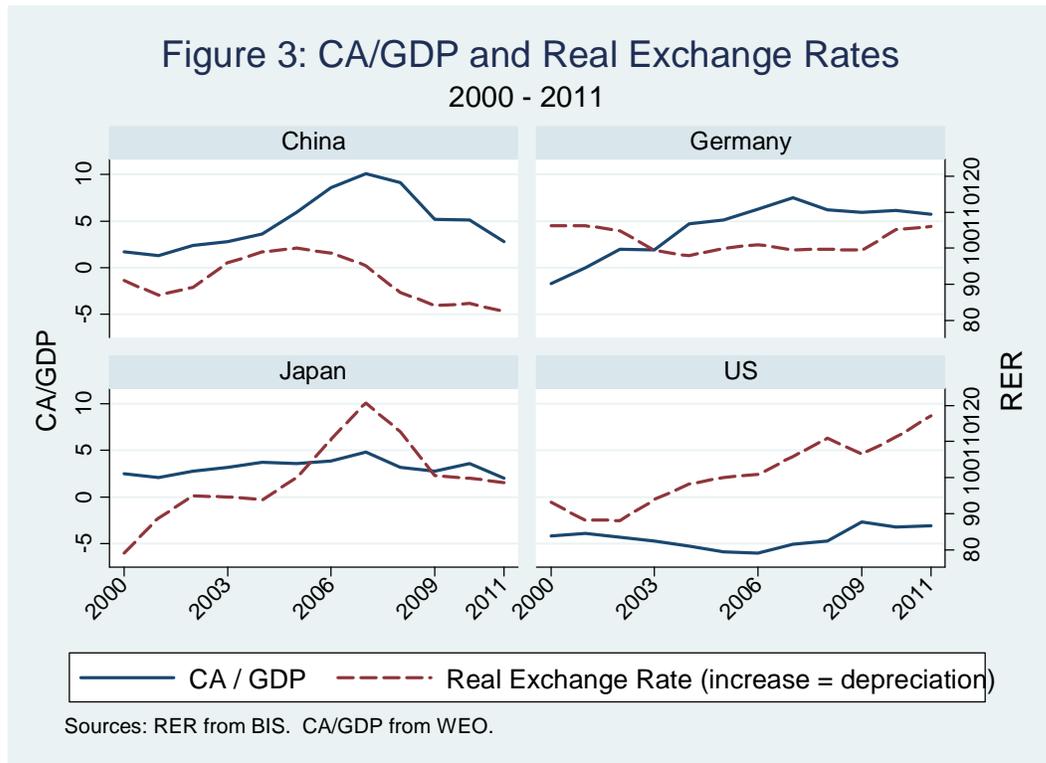
1995, 2003, 2007 & 2011



Source: IMF WEO, April 2012

Figure 3 presents four time plots, one each for China, Germany, Japan and the United States. These graphs show the values, over 2000 to 2011, of the country's current account-to-GDP ratio and of its index of the real exchange rate (for which the 2005 value is set to 100 and, in this graph, an increase represents a depreciation). Germany has had the most stable multilateral real exchange rate over this period, due to the fact that it shares a common currency with its major trading partners. The United States real exchange rate generally depreciated over this period, while the real exchange rate of China has been on an appreciating path since 2005. The Japanese real exchange rate, after dipping from 2000 to 2007, appreciated more than 20 percent between 2008 and 2011.

The time plots in Figure 3 suggest a negative relationship between the real exchange rate and the current account. The Chinese and Japanese appreciations since 2007 have both been accompanied by reductions in their respective current account surpluses. Conversely, the narrowing of the United States current account deficit since 2005 has occurred during a period of general dollar depreciation. In the next section, we investigate, in a more systematic fashion, the links between the real exchange rate, fiscal balances, and the current account.



II. Short-run determinants of the current account

The current account represents both national savings minus national investment and exports minus imports (plus unilateral transfers). These two accounting identities motivate two strands of empirical analysis of the current account. Much of the recent work on the empirical determinants of the current account has taken the savings / investment relationship as a starting point.² But analysis motivated by net exports, which is known as the elasticities approach, is more directly appropriate for the question of the relationship between rebalancing, the real exchange rate, and the government budget.³ In this section we first motivate our choice of the elasticities approach. We then discuss our specification and the results of our empirical analysis.

a. Specification

Empirical investigations that are motivated by the definition of the current account as savings minus investment typically include independent variables that evolve slowly, like the dependency ratio. This type of analysis is best suited for cross-section analysis, or for panel regressions in which the unit of time is non-overlapping periods of 5 years, or even a decade. The real exchange rate is not typically employed in these regressions. For example, Chinn and Prasad (2003) estimate cross-section regressions and regressions of non-overlapping five year averages, neither of which include the real exchange rate. The real exchange rate does not even appear as a regressor in their estimates which use annual data; instead, they attempt to capture its effect through the inclusion of the lagged current account, arguing that the real exchange rate affects the current account with a lag and over several years.

In contrast, the real exchange rate has a central role in regressions that estimate the trade balance. Domestic income and income among trading partners also appear in these regressions. While both bilateral and multilateral trade balance equations are the subject of this branch of research, a focus on the current account requires an estimate of the multilateral trade account. The multilateral trade account differs from the current account by the amount of unilateral transfers, but this distinction is of minor importance for the major economies that are at the center of the debate on rebalancing.

One final point in the case for using the multilateral trade balance equation for the analysis of the implications of rebalancing concerns the time horizon of the analysis. Multilateral trade equations are typically estimated using higher frequency data than that used in estimates of the current account based on the savings / investment relationship. The most appropriate policy-relevant time frame for considering the consequences of rebalancing on the real exchange rate, or the link between the real exchange rate, fiscal balances and rebalancing is over the course of a few years, not over a decade.

The specification for the elasticities-style regression that we estimate is

$$\Delta(\text{CA}/\text{GDP})_{i,t} = \beta_0 - \beta_{\Delta\text{RER}}\Delta\ln(\text{RER}_{i,t}) + \beta_{\Delta\text{SFB}}\Delta(\text{SFB}/\text{GDP})_{i,t} + \beta_{\text{SFB}}(\text{SFB}/\text{GDP})_{i,t} \\ - \beta_{\Delta\text{GDP}}\Delta\ln(\text{GDP})_{i,t} + \beta_{\Delta\text{WGDP}}\Delta\ln(\text{GDP})_{\text{WORLD},t} + \beta_{\text{China}}D_{i,t}^{\text{China}} + \varepsilon_{i,t}$$

where $\Delta(\text{CA}/\text{GDP})_{i,t}$ is the one-year percent point change in current account-to-GDP ratio, $\Delta\ln(\text{RER}_t)$ is the change in the natural logarithm of the real exchange rate (a positive value

² For example, Chinn and Prasad 2003, Chinn and Ito 2007.

³ Papers that estimate trade elasticities include Rose and Yellen 1989, and Hooper, Johnson, and Marquez 1998.

represents an appreciation, as distinct from the definition in Figure 3), $(\text{SFB}/\text{GDP})_t$ and $\Delta(\text{SFB}/\text{GDP})_t$ are the level and percent point change in structural fiscal balance-to-GDP ratio, respectively, $\Delta\ln(\text{GDP})_{i,t}$ and $\Delta\ln(\text{GDP})_{\text{WORLD},t}$ are the change in the logarithm of real GDP for country i and for World GDP, respectively, and the China dummy variable is D^{China}_i . The subscript i refers to 10 countries, all but one of which are advanced economies; Australia, Canada, China, France, Germany, Italy, Japan, Korea, the United Kingdom, and the United States. We also include results from a sample that excludes China to make sure that its observations are not driving our results. The sample period, referring to the subscript t , is 1995 to 2007, although data are not available for all these years for China

The two main coefficients of interest in this regression are $\beta_{\Delta\text{RER}}$ and $\beta_{\Delta\text{SFB}}$, since these will be the focus of our later discussion on rebalancing. The expected signs of these coefficients, negative for $\beta_{\Delta\text{RER}}$ and positive for $\beta_{\Delta\text{SFB}}$, are consistent with several scenarios. The negative relationship between the change in the real exchange rate and the change in the current account, controlling for the structural fiscal balance and real GDP growth, could arise most simply if an exogenous change in the real exchange rate movements affects the relative demand for exports and imports. Alternatively, we also have a negative relationship if an exogenous change in wealth, or an expected change in future income, changes the demand for a country's non-traded goods (which affects the real exchange rate) and also changes the demand for imported goods (altering the current account). For example, a change in wealth could be associated with an appreciation (through the increase in the demand for non-traded goods) and a current account deficit (by decreasing savings out of current income) – and this has no bearing on contemporaneous income, which is important for our interpretation since the regression controls for real income growth. A change in the structural fiscal balance has a direct effect on the current account through its effect on government savings, and thus national savings. It also could affect private savings and private investment; for example, a larger structural deficit could increase savings, through Ricardian equivalence, mitigating the direct government savings effect on the current account.

As shown in the next subsection, we find that a country's own GDP growth tends to be negatively associated with its current account – to – GDP ratio, although theory suggests that this correlation could be either positive or negative. We also find that the lagged level of the structural fiscal balance is a significant determinant of the change in the current account. The bigger a country's lagged structural fiscal deficit, the larger the decrease in its current account deficit, conditional on the other variables included in the regression.

The change in the real exchange rate, the change in structural fiscal balances to GDP, and income growth are contemporaneous with the change in the current account. This raises the issue of the potential endogeneity of these variables. We address this by estimating the equation using two-stage least squares as well as OLS. The instruments we use in the 2SLS estimation include the lagged values of the three potentially endogenous variables (i.e. changes in the log real exchange rate, structural fiscal balances to GDP, and log real income), lagged values of world real GDP growth, lagged levels of the current account-to-GDP ratio and the real exchange rate, and country dummy variables. The goodness-of-fit statistics for the first stage regressions are reported in the table of results. A comparison of the OLS and IV estimates gives some guidance as to the extent to which endogeneity plagues the OLS estimation.

b. Results

Estimation results are presented in Table 1 below. Columns 1 and 2 present OLS estimates, and Columns 3 and 4 present IV estimates. Columns 1 and 3 include the full sample of nine countries and Columns 2 and 4 omit the observations for China to ensure that this country, with its particular characteristics, is not driving the results.

The results in Table 1 show that the coefficients on the change in the real exchange rate is negative and significant at better than the 99 percent level of confidence in the OLS and IV regressions, in both the sample that includes China and the one that does not. The values of these coefficients are very stable across OLS and IV estimation methods (and across the change in the samples with regard to the inclusion of China). This suggests that there should not be too much concern with the endogeneity of the contemporaneous change of the real exchange rate. There is also little evidence that the coefficient on the real exchange rate is affected by whether or not China is included in the sample.

The coefficient on the change in the structural fiscal balance is positive and significant at better than the 95 percent level of confidence in all four regressions presented in Table 1, as is the lagged level of the structural fiscal balance to GDP. The positive coefficients on the change in the structural fiscal balance show that a bigger fiscal surplus is associated with a bigger current account surplus. There is a marked difference, however, in the estimated magnitude of this effect across the OLS and IV regressions, with a much larger coefficient in the IV regressions. This indicates that a negative shock to the current account is associated with a positive shock to the structural fiscal balance. This would occur if, for example, a negative savings shock due to an exogenous increase in housing wealth occurs at the same time as a decrease in structural budget deficit, perhaps because of an upward revision in potential income. In addition, the lagged level of the ratio of the structural fiscal balance to GDP is significant and positive, showing that, all else equal, higher fiscal deficits are associated with current account deterioration. The coefficients on this variable are relatively constant across the OLS and IV estimations.

The coefficient on the growth in a country's own real GDP is consistently negative and significant. This indicates that higher levels of growth are associated with an increase in imports over exports rather than, say, an export surge that drives growth. Also, if there was an important role of an exogenous export surge driving growth (or, for that matter, an exogenous import surge adversely affecting growth), this would indicate an endogeneity of real GDP growth, and we would expect to see a bigger disparity between the OLS and IV estimates than that in the estimates reported in the table. The growth in World GDP is not significant at standard levels of confidence. As reported in Columns 3 and 4, the first stage of the IV regressions explain about half of the variation in the change in the real exchange rate and the change in fiscal balance, and also about half of real GDP growth in the sample that omits China, but over three-quarters of real GDP growth in the sample that includes China.

Table 1: Current Account Regressions				
Variable	1. OLS Full Sample	2. OLS Excluding China	3. IV Full Sample	4. IV Excluding China
$\Delta \ln(\text{RER}_{i,t})$	-0.09	-0.09	-0.10	-0.10
(s.e.)	(0.02)	(0.02)	(0.04)	(0.04)
$\Delta(\text{SFB}/\text{GDP})_{i,t}$	0.29	0.29	0.55	0.56
(s.e.)	(0.14)	(0.14)	(0.22)	(0.21)
$\Delta \ln(\text{GDP})_{i,t}$	-0.54	-0.62	-0.51	-0.63
(s.e.)	(0.09)	(0.09)	(0.17)	(0.18)
$(\text{SFB}/\text{GDP})_{i,t-1}$	0.27	0.28	0.29	0.31
(s.e.)	(0.06)	(0.06)	(0.09)	(0.09)
$\Delta \ln(\text{GDP})_{\text{WORLD},t}$	0.25	0.18	0.18	0.13
(s.e.)	(0.14)	(0.14)	(0.16)	(0.15)
China	4.64		4.39	
(s.e.)	(0.84)		(1.40)	
Constant	0.97	1.47	<i>1.13</i>	1.69
(s.e.)	(0.60)	(0.59)	(0.65)	(0.66)
R ²	0.42	0.47	0.40	0.48
			R ² for First Stage Regressions	
		$\Delta \ln(\text{RER}_{i,t})$	0.48	0.49
		$\Delta(\text{FB}/\text{GDP})_{i,t}$	0.55	0.55
		$\Delta \ln(\text{GDP})_{i,t}$	0.78	0.52
No. of Obs.	109	100	109	100
<p>Panel regression with 10 countries (Australia, Canada, China, France, Germany, Italy, Japan, Korea, the United Kingdom, the United States) for time period 1995 – 2007. IV instruments include $\Delta \ln(\text{RER}_{i,t-1})$, $\Delta(\text{FB}/\text{GDP})_{i,t-1}$, $\Delta \ln(\text{GDP})_{i,t-1}$, $\text{RER}_{i,t-1}$, $\Delta \ln(\text{GDP})_{\text{WORLD},t-1}$, and country dummy variables. Bold = significant at better than 95 percent level of confidence. <i>Italic</i> = significant at between 90 and 95 percent level of confidence.</p>				

III. Rebalancing

The results in the previous section show that the goal of rebalancing a country's current account can be achieved through some combination of changes in the fiscal balance and changes in the real exchange rate. The regression results also show, however, that the particular combination of changes in the fiscal balance and the real exchange rate required to achieve a given decrease in a current account imbalance depends upon other factors as well, such as the level of the fiscal imbalance or the rate of growth of the economy. In this section we use the results from the previous section regression estimates to investigate the scope for rebalancing, and to construct an iso-rebalancing relationship for each of the countries in our sample.

We begin by gauging the change in the real exchange rate, or the change in fiscal balances, required to bring about a one percentage point of CA/GDP rebalancing, that is, a value of $\Delta(\text{CA}/\text{GDP})_{i,t}$ of 1.0 for a deficit country (Australia, Canada, France, Italy, the UK and the US), or of -1.0 for a surplus country (China, Germany, Japan and Korea). Using the estimates from the full sample IV regression in Table 1, we find the required change in the real exchange rate for a deficit country, given no change in the fiscal balance, is calculated as

$$\Delta \ln(\text{RER}_{i,t}) \Big|_{\Delta \text{SFB}=0} = (1.3 + 2.9(\text{SFB}/\text{GDP})_{i,t-1} - 5.1\Delta \ln(\text{GDP})_{i,t} + 1.8\Delta \ln(\text{GDP})_{\text{WORLD},t} + 43.9D^{\text{China}})$$

while for a surplus country it is

$$\Delta \ln(\text{RER}_{i,t}) \Big|_{\Delta \text{SFB}=0} = (21.3 + 2.9(\text{SFB}/\text{GDP})_{i,t-1} - 5.1\Delta \ln(\text{GDP})_{i,t} + 1.8\Delta \ln(\text{GDP})_{\text{WORLD},t} + 43.9D^{\text{China}}).$$

This shows that a faster-growing deficit country will need a larger depreciation than a slower growing deficit country, while a faster-growing surplus country will require a smaller appreciation than a more slowly growing surplus country. Also, a country with a bigger structural fiscal deficit (a more negative value of SFB/GDP) will need a bigger depreciation, if it has a current account deficit, or a smaller appreciation, if it has a current account surplus, than a respective deficit or surplus country with a smaller fiscal deficit.

A similar calculation can be made for the change in the fiscal balance required to bring about a one percentage point of GDP rebalancing, with the estimated change for a deficit country

$$\Delta (\text{SFB}/\text{GDP}_{i,t}) \Big|_{\Delta \text{RER}=0} = (-0.13 - 0.29(\text{SFB}/\text{GDP})_{i,t-1} + 0.51\Delta \ln(\text{GDP})_{i,t} - 0.18\Delta \ln(\text{GDP})_{\text{WORLD},t} - 4.39D^{\text{China}}) / 0.55$$

while for a surplus country it is

$$\Delta (\text{SFB}/\text{GDP}_{i,t}) \Big|_{\Delta \text{RER}=0} = (-2.13 - 0.29(\text{SFB}/\text{GDP})_{i,t-1} + 0.51\Delta \ln(\text{GDP})_{i,t} - 0.18\Delta \ln(\text{GDP})_{\text{WORLD},t} - 4.39D^{\text{China}}) / 0.55.$$

Rebalancing requires a bigger change in the structural fiscal deficit for a country with a current account deficit if it has a bigger initial structural fiscal deficit, or if it is faster growing; the opposite holds for rebalancing for a country with a current account surplus.

We present the calculations of the required change in the real exchange rate alone, or in the fiscal balance alone, to bring about a one percentage point of GDP rebalancing in 2012 in Table 2. The values used for the variables for the calculation for each country are based on WEO projections of national and world GDP growth, as well as the actual 2011 value for (SFB/GDP). The table also includes the 2011 current account-to-GDP ratio for each country. We also provide some context for these numbers by presenting the two largest values for the percentage change in the real exchange rate (appreciation for current account surplus countries, and depreciation for current account deficit countries) and the two biggest values of the percentage point change in the structural fiscal balance (negative for current account surplus

countries and positive for current account deficit countries) over the 1995 – 2007 period (the sample period used in the regressions).

The calculations and statistics presented in the top panels of Table 2 refer to the 6 countries with a current account deficit in 2011. The table shows a very high required change of the real exchange rate and the structural fiscal balance to bring about a one percentage point reduction in current account deficits for Australia, Canada, the UK, and the US. As shown by the lower panel, these rates of depreciation far exceed anything seen over the sample period. The high required rates of depreciation for these four countries reflect their large 2011 structural budget deficits (of 4.1 percent for Australia, 3.6 percent for Canada, 6.3 percent for the UK, and 7.2 percent for the US). The WEO projected structural fiscal balance improvements for each of these four countries after 2011 – the 2011 to 2012 change is presented in the table. But these WEO projections are still well below the decrease in the fiscal deficits required, by itself, to bring about a one percentage point reduction in the current account to GDP ratio, as shown by comparing the WEO projected change to estimated required change in SFB/GDP. In fact, the fiscal retrenchment that, by itself, would bring about an estimated one percentage point reduction in the current account deficit exceeds anything seen in the 1995 – 2007 period (but for the 1996 – 1997 period in Canada).

Italy presents an aberrant case; the estimate shows that it requires an appreciation or a fiscal expansion. This reflects the impact of the WEO projection of its 2012 GDP growth of negative 1.9 percent, coupled with its relatively low 2011 structural fiscal deficit of -2.9 percent.

The lower panels of Table 2 present similar estimates for the four countries with current account surpluses in 2011. The required real exchange rate appreciation to bring about a one percentage point reduction in the current account surplus is almost 30 percent for China, over 20 percent for Germany, and almost 17 percent for Korea. Alternatively, the fiscal expansions that would bring about the same estimated change are also quite large, of 5.4 percentage points for China, almost 4 percentage points for Germany and 3 percentage points for Korea. In this set, Japan is an aberration because its structural fiscal deficit is 8.1 percent of GDP in 2011 and this, by itself, has a big estimated effect on reversing its current account surplus.

A striking result from Table 2 is that, in general, the very large changes in the real exchange rate alone, or in the structural fiscal balance alone, to bring about a rebalancing of one percentage point. These required values are large given the experience of 1995 – 2007, and also, in the case of the fiscal balance, as compared to the WEO projected change. The conclusion, therefore, is that some combination of real exchange rate change and change in the structural fiscal balance is required for any meaningful rebalancing.

The combination of the change in the real exchange rate and the change in the structural fiscal balance required to bring about rebalancing of one percentage point of GDP is represented in the iso-rebalancing relationships presented in Figures 4 (for deficit countries) and 5 (for surplus countries). In these figures, we plot, for each country, the 2011 value of its real exchange rate, and its 2011 structural fiscal deficit. We use the estimates presented in the previous section to find the set of points that represent a change in the real exchange rate and in the fiscal balance such that the current account moves one percentage point towards balance between 2011 and 2012. For countries with a current account deficit in 2011, the sets of points in Figure 4 (represented by a dotted red line) represents the combination of real exchange rate depreciation and fiscal contraction consistent with a one percentage point reduction in the current account deficit. The dashed blue iso-rebalancing lines for surplus countries in Figure 5 represent the combination of real exchange rate appreciation and fiscal expansion consistent with a

reduction in the current account surplus of one percentage point. In each figure, hollow circles represent the point on the iso-rebalancing line for the WEO projection of the 2012 structural fiscal deficit.

The iso-rebalancing schedules in Figure 4 show that all of the deficit countries are projected to have some fiscal retrenchment and, therefore, the real exchange rate appreciation required to bring about a 1 percentage point rebalancing is less than the values presented in Table 2. But Figure 5 shows that the three surplus countries are also pursuing either no change in the structural fiscal balance (Korea), or fiscal retrenchment (China and Germany) and, therefore, the real exchange rate appreciation required to bring about rebalancing is as big as (Korea) or larger than (China and Germany) the values presented in Table 2.

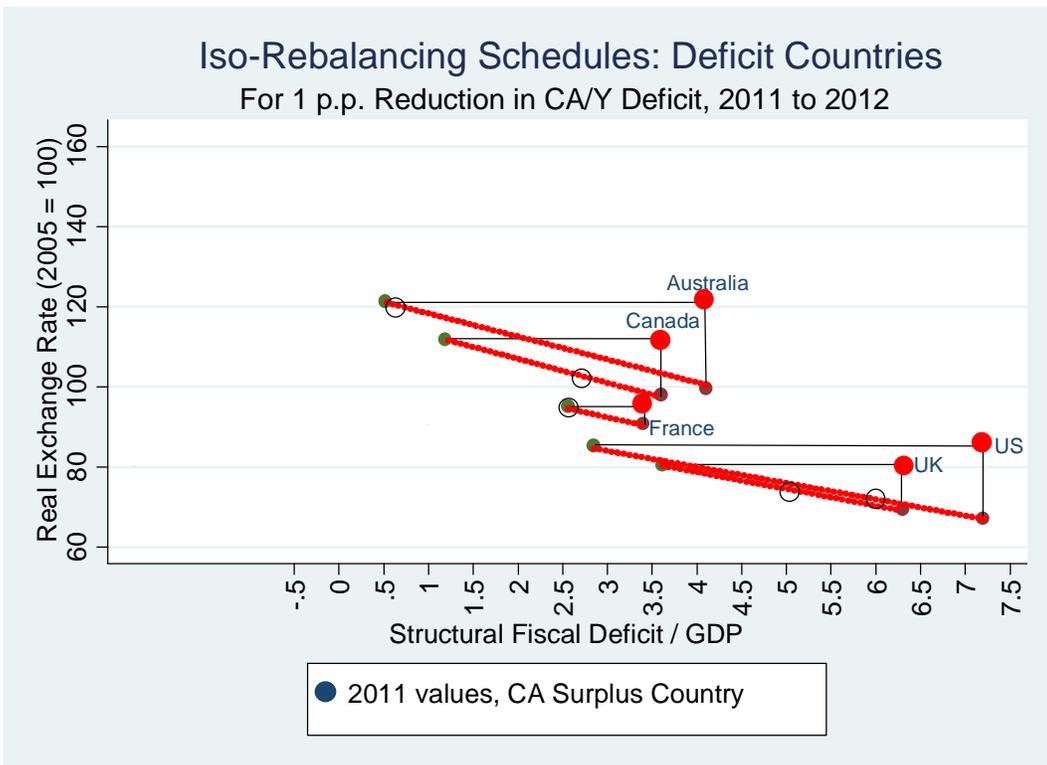
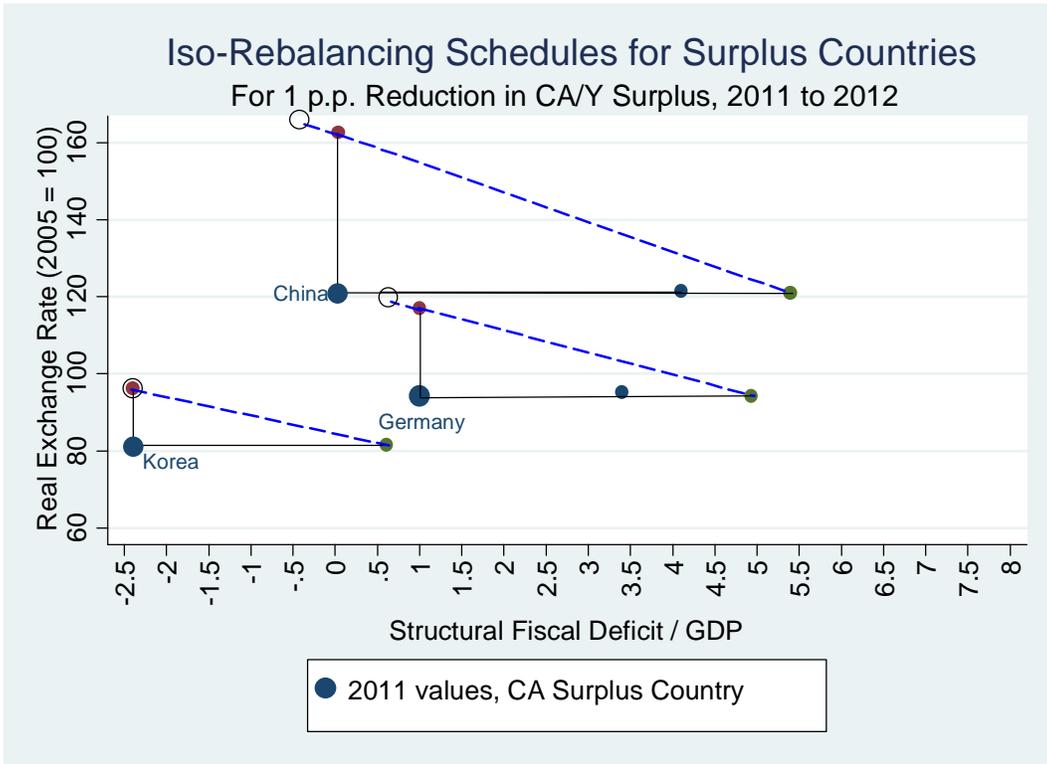
IV. Concluding Remarks

The results of this paper suggests that, while current account rebalancing is a pressing policy objective, the required movements in real exchange rates, by themselves, may be too big to achieve such objective. They will need to be accompanied by changes in fiscal policy. Fiscal consolidation – another key policy objective – goes hand-in-hand with rebalancing for current account deficit countries (which may also need to experience real exchange rate depreciation), but not for surplus countries. If they seek to help reduce global imbalances, surplus countries would need to pursue fiscal expansion instead – or else allow very large (and unprecedented) rates of real exchange rate appreciation. The size of the necessary changes in the real exchange rate and the fiscal stance to move toward rebalancing would depend on the level of the existing fiscal balance and on the pace of expansion of the economy.

These results point to the need of some degree of coordination between deficit countries – which should pursue fiscal consolidation and allow their real exchange rates to depreciate – and surplus countries – which should recognize the need to pursue fiscal expansion as their fiscal situations allow and allow their real exchange rates to appreciate even if doing so may not be compatible with their export strategies. A corollary of these results is that such coordination would be useful not only at the global scale but also at the regional scale – for instance, at the European scale.

Table 2: Estimated Adjustments for 1 percentage point Current Account Rebalancing And Actual Changes in Real Exchange Rate and Fiscal Balance						
	Current Account Deficit Countries					
Δ in only	Australia	Canada	France	Italy	UK	US
	Estimates Based on IV regression for Full Sample					
CA/Y (2011)	-2.2%	-2.8%	-2.2%	-3.2%	-1.9%	-3.1%
RER	-19.7%	-13.3%	-4.6%	9.0%	-14.8%	-24.0%
SFB/GDP	3.6 p.p.	2.4 p.p.	0.8 p.p.	-1.6 p.p.	2.7 p.p.	4.4 p.p.
	Actual values for 1995 – 2007 period					
Biggest Δ CA/Y	1.8 (2001)	2.4 (2000)	1.5 (1997)	1.1 (1996)	0.8 (2007)	0.9 (2007)
2 Biggest % Δ s RER	-8.7 (1998)	-5.1 (1998)	-5.9 (2000)	-7.4 (1995)	-4.5 (1995)	-6.3 (2003)
	-4.7 (2000)	-2.6 (2001)	-5.1 (1997)	-5.2 (2000)	-4.3 (2003)	-4.7 (2007)
2 Biggest pp Δ s (SFB/GDP)	1.2 (1995)	3.5 (1996)	2.1 (1996)	3.2 (1997)	2.1 (1998)	1.2 (2005)
	1.1(1996)	2.9 (1997)	0.6 (2006)	1.5 (1999)	1.6 (1996)	0.7 (2006)
	WEO Projection for Δ (SFB/GDP) (2012 – 2011)					
	1.6 p.p.	0.8 p.p.	0.9 p.p.	2.5 p.p.	1.2 p.p.	1.3 p.p.
	Current Account Surplus Countries					
Δ in only	China	Germany	Japan	Korea		
	Estimates Based on IV regression for Full Sample					
CA/Y (2011)	2.8%	5.7%	2.0%	2.4%		
RER	29.5%	21.6%	-6.2%	16.5%		
SFB/GDP	-5.4 p.p.	-3.9 p.p.	1.1 p.p.	-3.0 p.p.		
	Actual values for 1995 – 2007 period					
Biggest Δ CA/Y	-1.7 (1999)	-0.6 (1999)	-0.7 (1996)	-6.6 (1999)		
2 Biggest % Δ s RER	10.8 (1995)	5.3 (2003)	11.5 (1999)	13.3 (1999)		
	10.1 (1996)	3.7 (1995)	5.4 (2000)	11.0 (2005)		
2 Biggest pp Δ s (SFB/GDP)	-1.1 (1998)	-1.2 (1995)	-1.5 (1999)	-1.6 (2003)		
	-0.8 (1999)	-1.2 (2001)	-1.3 (2002)	-1.6 (2004)		
	WEO Projection for Δ (SFB/GDP) (2012 – 2011)					
	0.06 p.p.	0.4 p.p.	-0.6 p.p.	0.0 p.p.		
Calculations based on estimates from IV full sample regression in Table 1, and using mean values of regressors for each country.						

Figure 4: Iso-Rebalancing Schedules



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