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PERSISTENT CURRENT ACCOUNT IMBALANCES: ARE THEY GOOD OR BAD FOR REGIONAL AND GLOBAL GROWTH?

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Abstract

This paper examines the regional and global growth effects of current account imbalances in Japan, Germany, and the People's Republic of China (PRC)—the three largest persistent surplus countries—and the United States and United Kingdom, the two largest persistent deficit countries. Controlling for a set of macroeconomic determinants, we use a structural vector autoregression (SVAR) framework to show that positive shocks to current account balances in the PRC, Germany, and Japan transmit positive regional and global growth effects, particularly in the case of spillovers to regional growth from Japan. As expected, the global growth response is lower in magnitude than the regional growth response. In addition, the extent of the effect is amplified by global value chains, pointing to the significant role played by trade in intermediate goods. For current account deficit countries, the magnitudes of the responses of growth to shocks are much lower on average than in the case of current account surplus countries. We find some marginal positive effects on regional and global growth emanating from a positive shock on the UK current account—i.e., a reduction in the deficit. For the US, a positive shock to its persistent current account deficit marginally drags on global growth, possibly reflecting declining import demand and wealth effects linked to the US dollar's status as the global reserve currency. Our findings have important policy implications at the global level, particularly in light of the re-emergence of discussions on global imbalances in recent years.

Keywords: current account imbalances, macroeconomic imbalances, economic growth

JEL Classification: F32, F41, F62

Contents

"A high surplus does not necessarily mean that there is an imbalance. We do need to examine this further and understand whether a high surplus in Germany is something affecting the functioning of the European economy as a whole" (European Commission President José Manuel Barroso, 13 November 2013).

1. INTRODUCTION

Current account surpluses have persisted in a number of European and Asian economies throughout the global financial crisis and thereafter. Along with Germany, Japan has a decades-long history of recording current account surpluses. Due to rapid improvements in its manufacturing sector competitiveness, Japan has almost continuously recorded trade surpluses since the mid-1960s, and as a result, record current account surpluses (Shirakawa 2011).[1] Japan faced harsh pressure from the US on its current account surplus in the 1980s. Germany's story is similar to that of Japan. To allow for macroeconomic rebalancing, both Japan and Germany agreed to let their currencies appreciate against the US dollar as part of the Plaza Agreement in 1984. The People's Republic of China (PRC) started to build up large current account surpluses after joining the World Trade Organization in 2001, recording a stunning current account surplus of 9.9% of GDP in 2007. Although the PRC's surplus has declined substantially since then, the PRC continues to face enormous pressure from the US, not unlike the pressure exerted on Japan in the 1980s (Ito 2009). Under the Trump administration, the US government has substantially increased pressure on all three surplus countries.

The question remains whether such imbalances require corrective policy action or whether they can be viewed as being a logical outcome of the economic environment. It has been suggested that excessive current account surpluses have hampered growth in deficit countries. The Economist (2017) even identified a "German problem" and asserted that the German current account surplus is "damaging the world economy". The literature to date has tended to focus on the internal adjustments necessary within countries to address current account imbalances, rather than assessing their impact at the regional and global levels.

Against this backdrop, this paper addresses the issue of whether current account imbalances are 'good' or 'bad' for regional and global growth. In doing so, we also assess whether imbalances can be considered to be justified, given macroeconomic fundamentals.[2] In particular, this paper assesses current account imbalances in the three largest persistent current account surplus economies (Germany, Japan, and the PRC) and the two largest persistent deficit countries (the US and the UK) in two stages. In the first stage, we empirically assess the drivers of the current account positions using ordinary least squares (OLS), both in a panel and country-specific set-up, over the period 1999 to 2018. In particular, we examine the effect of a range of country-specific factors, including standard macroeconomic variables along with the role of intermediate trade and value chains (Brumm et al. 2019), the exchange rate (Herrmann and Jochem 2013), and the size of the financial sector (Ito and Volz 2013).

[1] Japan experienced only brief periods with current account deficits—i.e., 1973–1975 and 1979–1980—related to increases in the price of oil imports. For analyses of the drivers of Japan's current account see, for instance, Ueda (1988), Ito (1994), Obstfeld (2006), and Horioka (2016).

[2] This is closely related to the external balance concept, defined by Krugman, Obstfeld, and Melitz (2014: 535) as "when a country's current account is neither so deeply in deficit that the country may be unable to repay its foreign debts in the future nor so strongly in surplus that foreigners are put in that position". While the emphasis is on the problems faced by current account deficit countries, the implication is that current account surplus countries are at the root of this, transmitting problems for deficit countries to repay debts.

Building on this, in the second stage, we use impulse response analysis from panel and country-specific SVAR models to estimate the reaction of regional and global growth to shocks imposed on the current account balances.

To our knowledge, this paper constitutes the first extensive empirical analysis of the effects of current account imbalances on extra-country growth. Overall, we find that current account determinants have been largely in line with macroeconomic fundamentals over time. In addition, we find that regional economic growth reacts positively to a current account balance shock in Germany and Japan, with a notably higher magnitude for the latter. Global economic growth also reacts positively to a current account balance shock in the PRC, Japan, and Germany. We also find evidence that global value chains (GVCs) appear to be important factors affecting regional and global growth that accentuate the magnitudes of shocks imposed on current account balances.

The remainder of the paper is organized as follows. The next section briefly discusses theoretical considerations and reviews the related literature. Section 3 lays out our empirical methodology and the data that we use. Section 4 presents the empirical results. Section 5 concludes.

2. THEORETICAL CONSIDERATIONS AND RELATED LITERATURE

There are a number of within-country structural factors that can determine whether a surplus or deficit exists, and while these are controlled for in our empirical analysis, the main focus of this paper is on the extra-country growth effects.[3] Where a deficit reflects higher investment rather than lower savings, this can be beneficial for the growth of the respective economy in the long run. On the other hand, a deficit characterized by net imports may be indicative of competitiveness concerns. Turning to surplus countries, while a current account surplus helps to strengthen the exchange rate and reduce dependency on external finance, demographic factors underpinning a surplus and falling levels of investment can be negative for domestic long-run growth.

Early work by Blanchard and Giavazzi (2002) made the point that the Feldstein Horioka puzzle did not hold for the euro area in the period after creation of the European Monetary and Economic Union, reflecting rising financial integration—i.e., diverging current account balances enabled catch-up for the peripheral countries. On the other hand, the large current account surplus in Germany has been attributed by some commentators (e.g., Krugman 2013; Pettis 2013; Skidelsky 2014; The Economist 2017) as at least partly exacerbating the euro area sovereign debt crisis. It has also been suggested that excessive current account surpluses, especially in Germany and the PRC, have hampered growth in deficit countries.

There are several transmission channels through which large current account imbalances could affect regional and global growth. A first channel relates to potential effects on global interest rates via savings and investment. By definition, a current account surplus implies that domestic savings exceed domestic investment, which are then exported to the rest of the world. Large-scale savings and resulting capital exports could contribute to a global ‘savings glut’ that drives down global interest rates (Bernanke 2005). This could have positive impacts on global growth, as low interest rates facilitate investment. However, (too) low interest rates could also fuel overinvestment

[3] For an overview of structural factors driving current account imbalances, see, for instance, Cheung, Furceri, and Rusticelli (2013) and Kollmann et al. (2015).

and spark unsustainable growth booms. Low interest rates could also contribute to financing unsustainable consumption booms. Last but not least, low interest rates could contribute to asset price inflation and lay the groundwork for a later financial crisis. All of these effects were observable in the eurozone periphery in the run-up to the euro crisis.

A current account surplus leading to sizeable capital outflows could also have detrimental financial stability effects related to enhanced international capital flows. It should be noted, however, that, historically, so-called capital flow bonanzas to emerging economies were often driven by capital outflows from large deficit countries, most notably the US (Reinhart and Reinhart 2009). Sizable capital outflows can also contribute to the relative competitiveness of economies due to exchange rate valuation effects. Indeed, competitiveness spillover effects have often led to complaints about alleged currency manipulation by surplus countries.

Other channels through which current account imbalances may impact abroad are related to the effects on global demand/consumption and employment (and prices and wages). Arguing from a Keynesian perspective, Krugman (2013) asserts that "in a world ruled by inadequate demand … [b]y running inappropriate large surpluses, Germany is hurting growth and employment in the world at large." The complaint directed at Germany (and the PRC) is that wage restraint has depressed domestic consumption, which has also reduced demand for foreign imports (and hence growth abroad). With domestic investment lower than domestic savings, Germany has allegedly forced its savings surpluses onto its trading partners (Pettis 2013). Moreover, German wage restraint and low inflation are argued to have depressed wage growth among its trade partners, especially those in the eurozone that could no longer devalue their own currency (Horn et al. 2017).

However, the demand argument can also be turned on its head. To the extent that large export surpluses support growth in the surplus countries, this could, in turn, stimulate imports by these countries from the rest of the world. In this context, it is important to highlight the growing role of trade in intermediate goods (Baldwin 2013). Through the import of intermediate goods, large current account surplus countries like the PRC and Germany could support investment and production in those countries producing or processing intermediate goods in earlier stages of the supply chain. These will often be economies in the same region.

There has been surprisingly little empirical analysis of these potential spillover effects of large current account imbalances. International organizations, including the International Monetary Fund (IMF) (2015) and the European Commission (2015), have frequently argued that a demand expansion in Germany would have positive effects on demand in other eurozone countries.[4] Recently, using an input-output model, Picek and Schroder (2018) have estimated the spillover effects size of an expansion of Germany's final demand on GDP, employment, and the trade balance in deficit countries in Southern Europe. Although the magnitudes of the spillover effects that they find are larger than those of the above-mentioned studies by the IMF (2015) and the European Commission (2015) based on dynamic stochastic general equilibrium models, they still conclude that "a modest expansion in Germany alone will hardly make a significant contribution to the external adjustment process in the south" (Picek and Schroder 2018: 2218). However, while insightful, these studies model the effects of a demand expansion in Germany, not changes to Germany's current account as such.

Our aim in this paper is to make a first attempt to identify whether current account imbalances transmit abroad, while controlling for a range of macroeconomic

[4] See also Elekdag and Muir (2014) and In't Veld (2017).

fundamentals. As such, it is not our intention to test each of the transmission channels described, but rather, as a first attempt at filling the gap in the literature, to test empirically whether extra-country growth effects are found.

3. EMPIRICAL METHODOLOGY

To comprehensively examine how current account imbalances affect regional and global growth, we employ a two-stage approach. In the first stage, we empirically assess the drivers of the current account positions to check whether imbalances can be considered to be justified given macroeconomic fundamentals. We control for within-country structural factors that can determine whether a surplus or deficit exists. In the second stage, using impulse response analysis from a structural VAR, we examine the reaction of regional and global growth to shocks imposed on the current account balances of our countries of interest. These analyses are described in more detail in the following subsections.

3.1 First Stage: The Determinants of the Current Account

In order to assess the drivers of current account imbalances, we initially estimate the following reduced-form equation:

$$CA_{i,t} = \alpha_i + \delta_t + \lambda X_{i,t-1} + \epsilon_{i,t} \quad (1)$$

where $CA_{i,t}$ refers to the current account balance to GDP ratio for country i at time t. $X_{i,t-1}$ is a vector of macroeconomic fundamental variables, which includes real GDP growth, the fiscal balance as a share of GDP, trade openness as a share of GDP, net foreign assets relative to GDP, the credit to GDP ratio, the real effective exchange rate, integration into GVCs, and the old-age dependency ratio. These variables are lagged by one period to mitigate endogeneity concerns. α_i and δ_t denote the country-specific and time fixed effects, while $\varepsilon_{i,t}$ is the disturbance term.

We use the following data to estimate Eq. (1). The left-hand side variable, the current account balance to GDP ratio, is obtained from the Quarterly National Accounts of OECD Statistics. For our macroeconomic fundamental variables on the right-hand side, we obtain the credit to GDP ratio and the logarithm of the real effective exchange rate from the Statistics of the Bank for International Settlements. Real GDP growth is obtained from the Quarterly National Accounts of OECD Statistics and the China Economic Database (CEIC) database.[5] Trade openness is measured by the sum of exports and imports as a share of GDP, which is also obtained from the Quarterly National Accounts of OECD Statistics and the CEIC database. The fiscal balance as a share of GDP, defined as the cyclically adjusted primary balance to GDP ratio, is obtained from IMF Fiscal Monitor Statistics. Likewise, net foreign assets relative to GDP are obtained from IMF International Financial Statistics. The old-age dependency ratio, defined as the ratio of people older than 64 to the working-age population, is obtained from the World Bank database. Finally, using the UNCTAD-Eora Global Value Chain Database, we define GVCs as foreign value added plus domestic value added as a percentage of the rest of

[5] The CEIC database provides quarterly national accounts statistics for the PRC that include real GDP, exports, and imports, which are not available in OECD Statistics.

the world.[6] All data mentioned above are obtained at quarterly frequency, covering the period from 1999Q1 to 2018Q4.[7]

We estimate Eq. (1) by OLS with country-time fixed effects. Overall, for our specification, we obtain a panel of 400 observations for five countries over the period from 1999Q1 to 2018Q4.

Since the panel analysis may still omit within-country structural factors that can determine whether a surplus or deficit exists even if country-time fixed effects are controlled, we further estimate the country-specific model as follows:[8]

$$CA_t = \alpha + \lambda X_{t-1} + \epsilon_t \quad (2)$$

where CA_t denotes the current account balance to GDP ratio at time t, X_{t-1} is a lagged vector of macroeconomic fundamentals as per equation (1), α refers to the intercept, and ε_t is the disturbance term.

This is an important first stage in the analysis, as the variables used in this basic framework will inform the structural VAR set-up on identifying how regional and global growth respond to shocks imposed on domestic current account balances.

3.2 Second Stage: Impulse Responses from Panel and Country-Specific Structural VARs

To examine how current account imbalances affect regional and global growth, incorporating the estimation results from the previous section, we conduct our second-stage analysis based on a number of SVAR models: a panel SVAR across the five countries, as well as impulse responses generated from country-specific SVARs. In the SVAR model, as well as the selected right-hand side variables used in the first-stage estimation, we include global GDP growth (%) and regional GDP growth (%). An important innovation in our approach is that the estimated impulse responses control for a large number of macroeconomic determinants.

The global growth rate is calculated using the quarterly world (real) GDP series from the World Bank Global Economic Monitor database. The definition of regional growth is different for each country. For the PRC, the regional growth rate refers to the quarterly real GDP growth rate of the ten Association of Southeast Asian Nations (ASEAN) countries plus Japan and the Republic of Korea and excluding the PRC, obtained from Haver Analytics. For Japan, the regional growth rate refers to the quarterly real GDP growth rate of the ASEAN countries plus the PRC and the Republic of Korea and excluding Japan, obtained from Haver Analytics and the CEIC. For Germany, the regional growth rate refers to the quarterly real GDP growth rate of the euro area excluding Germany, obtained from the Quarterly National Accounts of OECD Statistics. For the United Kingdom, the regional growth rate refers to the quarterly real GDP growth rate of the European Union excluding the UK, also obtained from the Quarterly National Accounts of OECD Statistics. For the United States, the regional growth rate refers to the quarterly real GDP growth rate of the United States' top seven trading partners

[6] Previous works such as Brumm et al. (2019) use the World Input-Output Database (WIOD) to measure GVCs. However, WIOD only covers time series up to 2014, while the UNCTAD-Eora Global Value Chain Database covers a longer time period, from 1990 to 2018.

[7] The quarterly data on fiscal balance, net foreign assets, old-age dependency, and GVCs are interpolated from the annual time series using the quadratic spine interpolation method.

[8] We use the same dataset explained above to estimate Eq. (2) for each country. The estimation is based on the OLS method.

including the PRC, Mexico, Japan, Canada, Germany, the Republic of Korea, and the United Kingdom, obtained from Haver Analytics. All the mentioned variables have the same time span as those in the first stage.

The panel SVAR can be denoted as follows in its general specification, with structural shocks identified by a recursive restriction:

$$A(L)\Delta Y_{i,t} = \varepsilon_{i,t} \tag{3}$$

where *A(L)* is the matrix of lag polynomial, $Y_{i,t}$ refers to the demeaned value of X_t of the country *i* to accommodate country-specific fixed effects, and $\varepsilon_{i,t}$ is a vector of structural disturbances. Following the setting of the previous SVAR model, we take a first-difference form of $Y_{i,t}$ as $\Delta Y_{i,t}$. The ordering of the variables imposed in the recursive form is the same as in the previous SVAR model. The panel VAR includes two lags selected by the Akaike information criterion.

A similar general set-up applies to the country-specific SVARs, which are specified as follows:

$$A(L)\Delta X_t = \mu_t \tag{4}$$

where $A(L)$ is a matrix of polynomials in the lag operator L; ΔX_t refers to a vector of our selected endogenous variables in the first-difference form that consist of global growth, regional growth, current account balance, and macroeconomic fundamentals; and μ_t is a vector of structural disturbances. The identification strategy used is based on a block recursive restriction (Christiano, Eichenbaum, and Evans 1999), which results in the following matrix A to fit a just-identified model:

$$A = \begin{bmatrix} a_{1,1} & 0 & \dots & 0 \\ a_{2,1} & \ddots & \ddots & \vdots \\ \vdots & \ddots & \ddots & 0 \\ a_{11,1} & \dots & a_{11,10} & a_{11,11} \end{bmatrix} \tag{5}$$

The ordering of the variables imposed in the recursive form implies that the variables at the top (such as $a_{1,1}$) will not be affected by contemporaneous shocks to the lower variables (such as $a_{2,1}, a_{11,1}, \dots$), while the lower variables will be affected by contemporaneous shocks to the upper variables. Usually, slower-moving variables are better candidates to be ordered before fast-moving variables (Bruno and Shin 2015). It therefore follows that we place the global growth variable at the top in the ordering, which implies that the global growth rate will only be affected by a contemporaneous shock to itself. Following the global growth variable, we place the regional growth variable second in the ordering, which implies that the regional growth rate will be affected by contemporaneous shock to the global growth and itself, but not by contemporaneous shocks to macroeconomic fundamentals or current account balance. Importantly, we put the current account balance in last place in the ordering, which is based not only on the assumption that global growth and regional growth will affect the state of the current account, but also on consideration of our first-stage empirical results that imply the macroeconomic fundamentals that drive the current account imbalance. Lastly, we place our macroeconomic fundamentals in the middle of the ordering. The lag selection of the SVAR model is based on the Akaike information criterion, which suggests that our model should be with two lags. While the main focus is on the results from the country-specific models, we also set up the VAR in panel form.

For robustness, we also use a sign restriction approach to identify the shocks. Essentially, the idea is to keep the variables of interest, regional and global growth, unrestricted, while imposing specific sign restrictions on the rest of the variables. We suggest that a positive current account balance shock will not decrease current account balances for certain periods. For our macro-fundamental variables, the sign restrictions are imposed following Brumm et al. (2019). All sign restrictions are binding for four periods (quarters) after the current account balance shock. Table A1 in the Appendix summarizes the restrictions imposed.

4. EMPIRICAL RESULTS

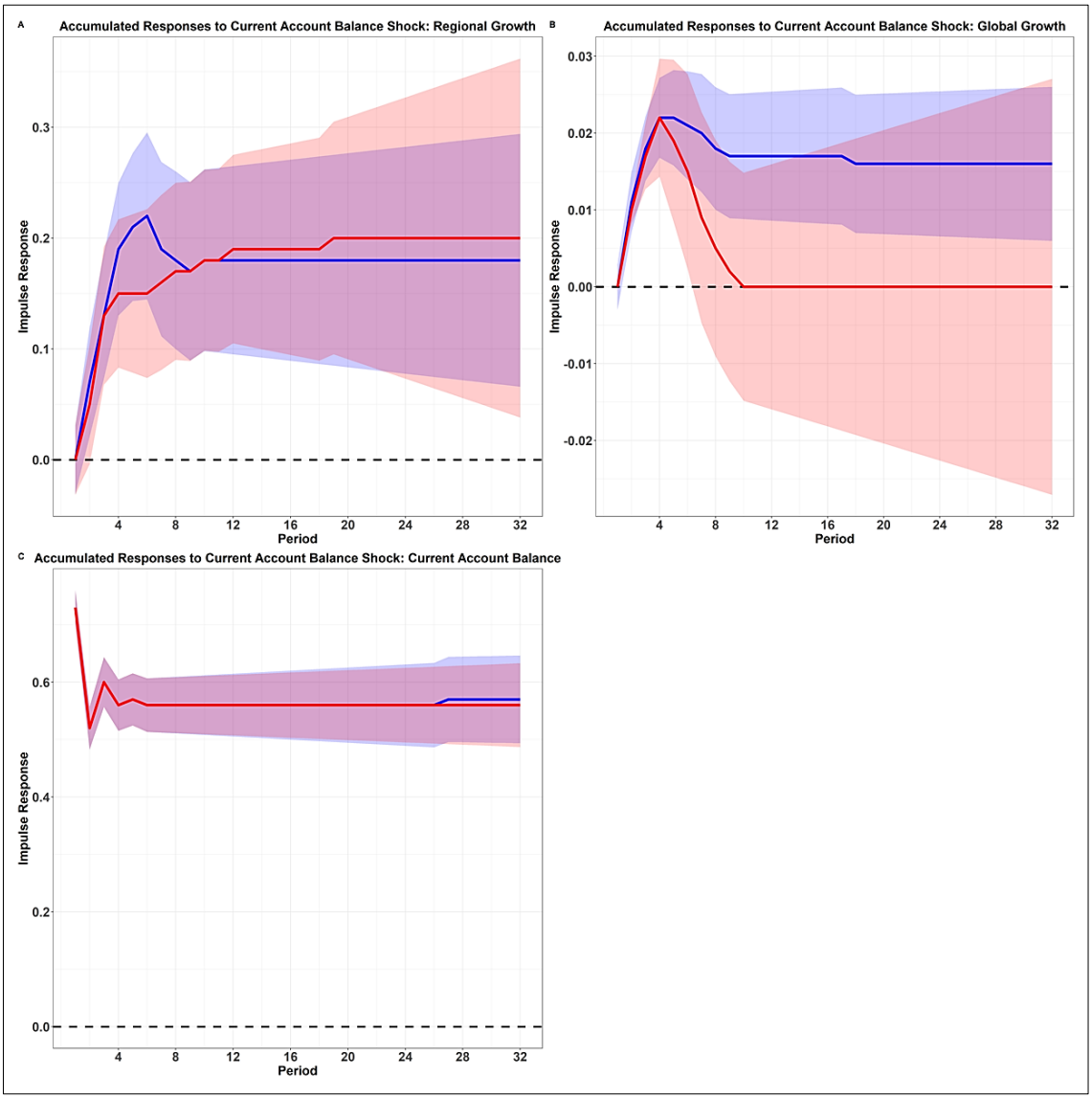
The results from the regression analysis on determinants is a crucial first stage, as this underpins the second stage analysis as regards controlling for macroeconomic determinants in the impulse responses. The first column in Table 1 reports the estimation result of the panel analysis based on Eq. (1). From the second column to the sixth column in Table 1, the estimation results of the country-specific analysis based on Eq. (2) are reported. Importantly, while there is some cross-country heterogeneity in terms of the magnitude of the coefficients, our results are largely statistically significant across countries and across variables. To further test if our first-stage model successfully assesses the drivers of current account imbalances, we compare the fitted values of the first-stage model estimated in Eq. (2) with the actual current account balances, which are illustrated in Figures A1 to A5. The figures show that our first-stage model is well fitted for all five countries, providing a strong basis for the next-stage analysis.

Table 1: The Determinants of the Current Account Balance
(% GDP)

LHS: Current Account Balance (in % of GDP)	**Panel Analysis (1)**	**PRC (2)**	**Germany (3)**	**Japan (4)**	**United Kingdom (5)**	**United States (6)**
Real GDP Growth (%)	0.249***	0.251	0.210	0.411***	0.313	–0.671***
	(0.077)	(0.163)	(0.144)	(0.095)	(0.197)	(0.122)
Credit to GDP (% of GDP)	–0.023***	–0.089***	0.058	–0.111***	0.026	–0.032*
	(0.006)	(0.023)	(0.036)	(0.018)	(0.021)	(0.017)
Trade Openness (% of GDP)	0.130***	0.204***	0.025	–0.168***	–0.045	–0.254***
	(0.022)	(0.048)	(0.044)	(0.050)	(0.061)	(0.062)
Real Effective Exchange Rate (log)	0.053***	0.092	0.099*	–0.002	–0.069***	–0.156***
	(0.012)	(0.055)	(0.053)	(0.016)	(0.023)	(0.022)
Net Foreign Assets (% of GDP)	0.068***	0.042	0.134***	–0.116**	0.084	0.064
	(0.013)	(0.048)	(0.037)	(0.048)	(0.102)	(0.082)
Old-Age Dependency (%)	–0.041	–0.815	–0.324	–0.122**	–0.600**	0.881***
	(0.027)	(0.394)	(0.128)	(0.048)	(0.250)	(0.102)
Fiscal Balance (% of GDP)	–0.073	–0.815***	–0.099	0.498***	0.215	–0.111**
	(0.055)	(0.394)	(0.128)	(0.094)	(0.137)	(0.054)
Global Value Chain (% of Rest of World)	–0.162	0.475	–1.442***	–0.986**	1.695*	0.527**
	(0.109)	(0.793)	(0.419)	(0.445)	(0.934)	(0.230)
Constant		–48.848*	–44.773*	40.591***	34.531*	59.214***
		(26.589)	(24.562)	(9.094)	(17.571)	(10.893)
Time and Country Fixed Effects	Yes	n/a	n/a	n/a	n/a	n/a
Observations	400	80	80	80	80	80
R^2	0.557	0.744	0.913	0.604	0.543	0.822

***Significant at the 1% level; **significant at the 5% level; *significant at the 10% level. The coefficients refer to the estimation of equation (1) for the panel and equation (2) for the country-specific models.

Figure 1: Impulse Responses to Current Account Balance Shock: Panel

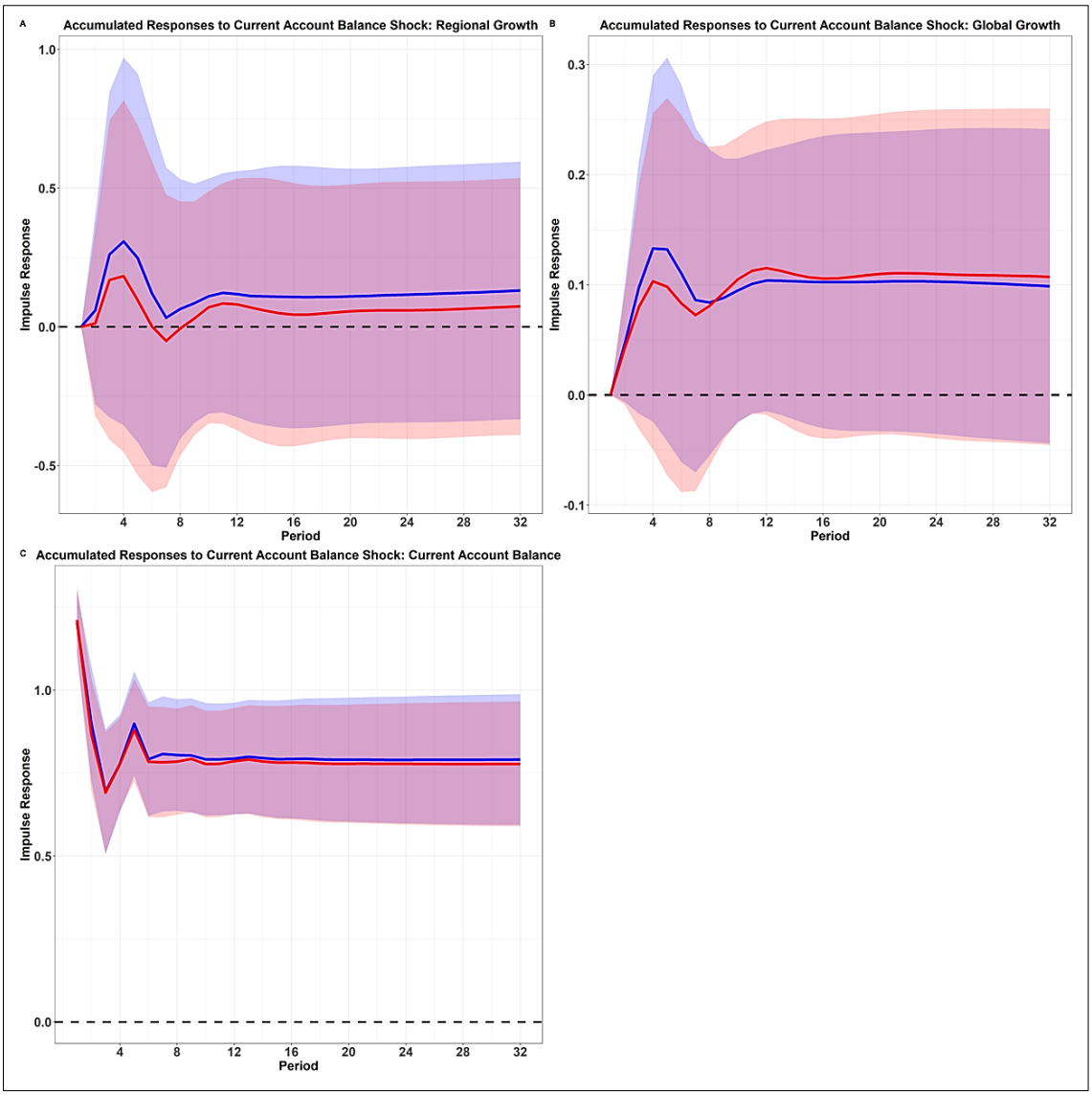


Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the (95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the (95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on block recursive restriction.

In line with previous findings in the literature, we find that credit/GDP, trade openness, net foreign assets/GDP, the fiscal balance, and old-age dependency are important factors explaining current account positions. Credit/GDP is negatively and significantly associated with current account balances, and this can be related to capital inflows fueling credit growth. We also find a significant role played by GVCs. Brumm et al. (2019) make the point that the IMF's External Balance Assessment model generally performs poorly in explaining the current account for countries with large imbalances. Our results indicate that GVCs are important driving factors of the current account in four of the top five largest countries with current account imbalances. Figures A1 to A5 indicate that, for all of the countries, our regression models suggest that the current account balances appear to be largely justified by fundamentals—i.e., the actual current account balances track very closely the fitted values from the estimation of

Eq. 2. Given the recent literature on the important role played by GVCs, we explore this further in the SVAR analysis, firstly with the panel and then the country-specific models.

Figure 2: Impulse Responses to Current Account Balance Shock: PRC

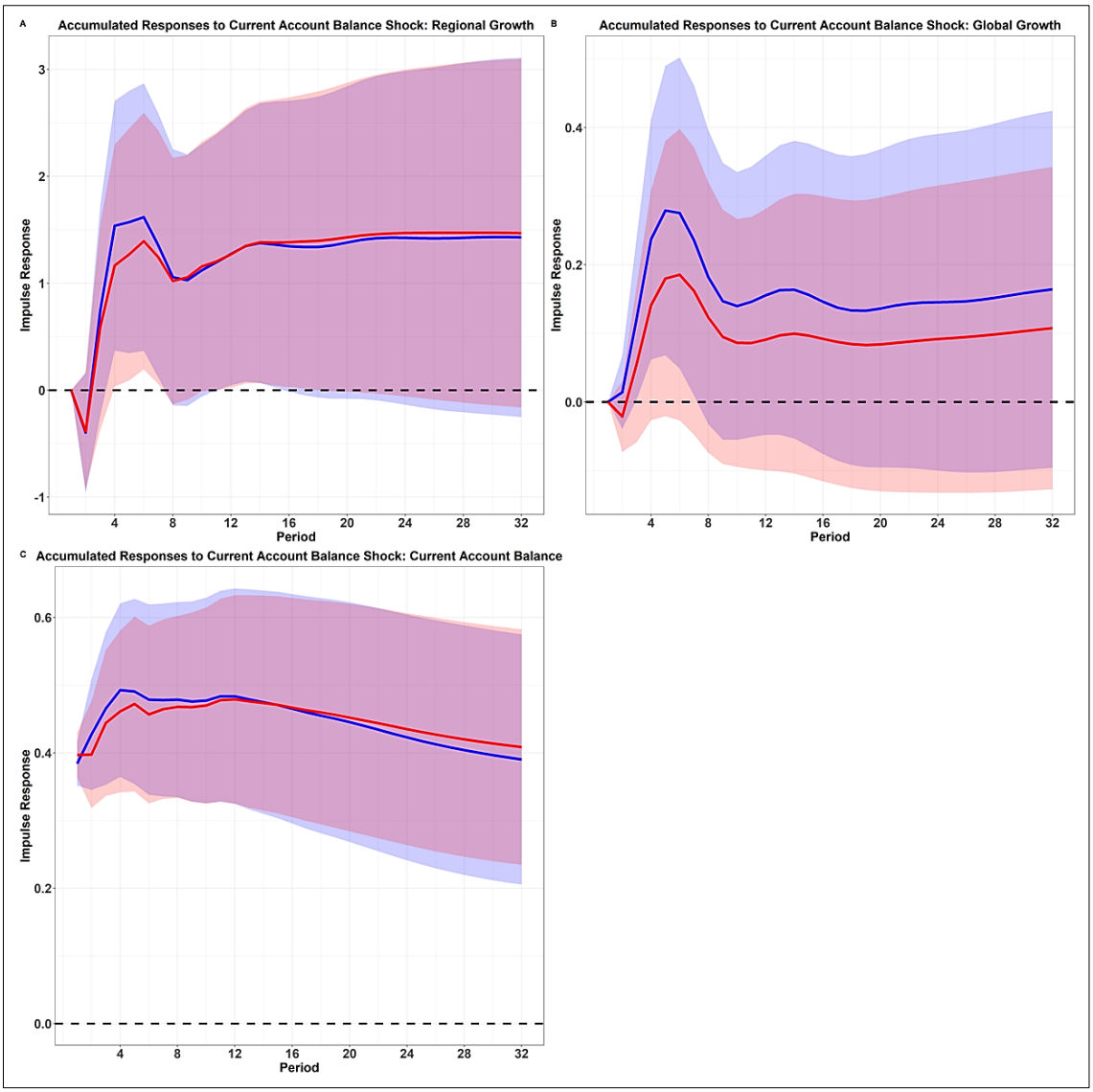


Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the (95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on block recursive restriction.

Our panel SVAR impulse responses, as shown in Figure 1, indicate a positive reaction by regional and global growth to positive shocks to the current account balance (i.e., increasing a current account surplus or reducing a current account deficit). The magnitude of the effect is stronger on regional growth than global growth by a factor of around ten, with a one percentage point rise in the current account balance increasing regional growth by around 0.2 percentage points. Where GVCs are incorporated into the VAR, the response of regional and global growth remains positive and significant over

time. In order to delve deeper into the issue, we also compute impulse responses based on country-specific SVARs.[9]

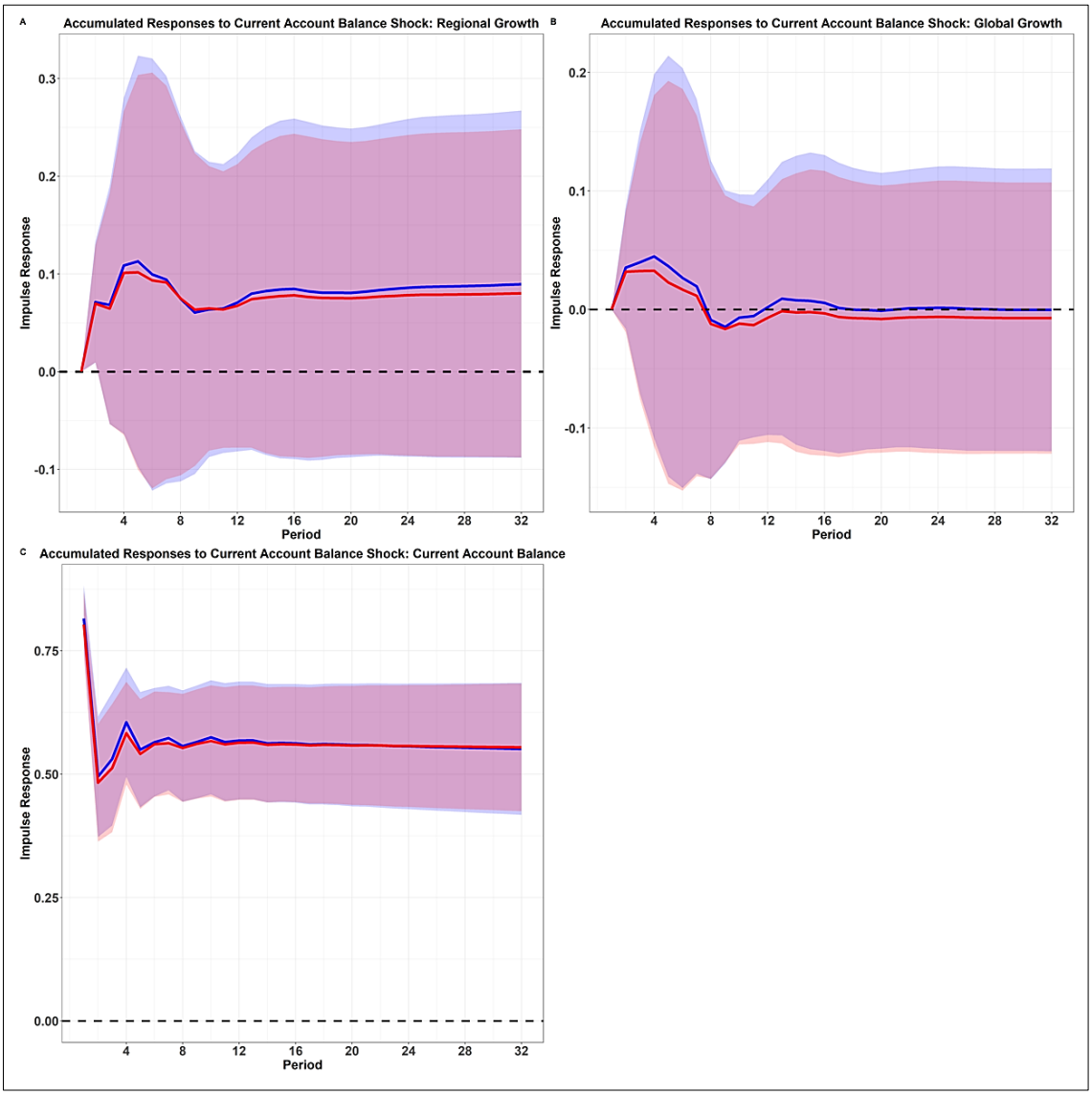
Figure 3: Impulse Responses to Current Account Balance Shock: Japan



Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on block recursive restriction.

[9] In addition, for robustness, we have used sign restrictions to identify the shocks in the SVAR, and these results are consistent with those based on block recursive identification. The shocks based on sign restrictions are provided in the Appendix in Figures A6 to A10.

Figure 4: Impulse Responses to Current Account Balance Shock: Germany

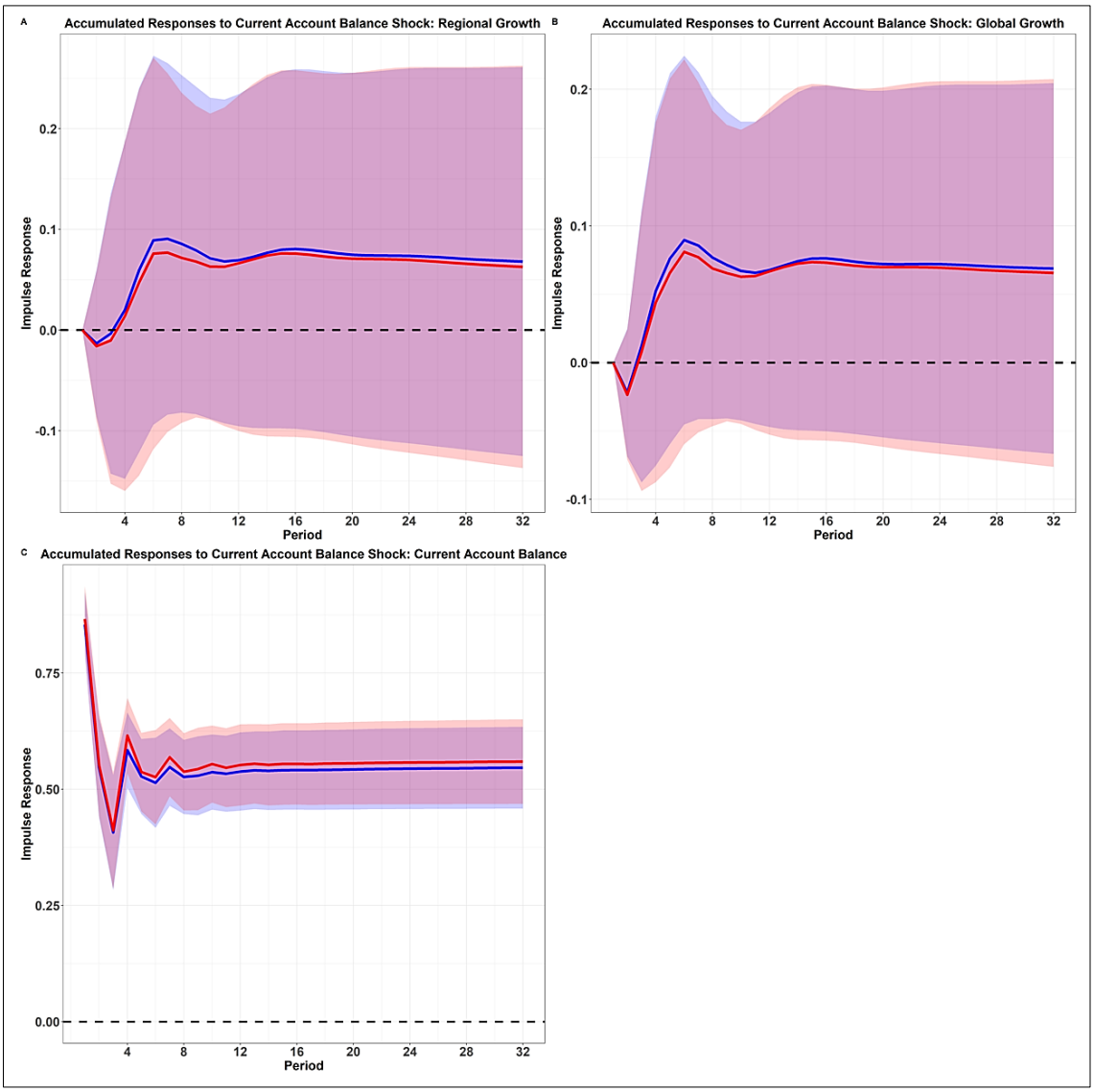


Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on block recursive restriction.

Turning to the impulse responses from our country-specific SVAR models, the results suggest that regional growth reacts strongly and positively to one-unit shocks imposed on the Chinese, Japanese, and German current account balances (see Figures 2 to 4 respectively). Global growth also reacts positively, albeit with the expected lower magnitudes. The responses of regional and global growth, which peak after around six quarters, are notably stronger when GVCs are incorporated into the VAR. The results are particularly strong in terms of the magnitude of regional growth spillovers from positive shocks to the Japanese current account balance. This may be related to Japan's dominant position globally in relation to the size of its net foreign assets, with Japan investing heavily abroad and particularly in Asia. While a large current account surplus is indicative of a strong and competitive export sector and weaker domestic demand and investment, the expectation may *prima facie* be that this should detrimentally affect growth abroad. However, our findings are very much in line with

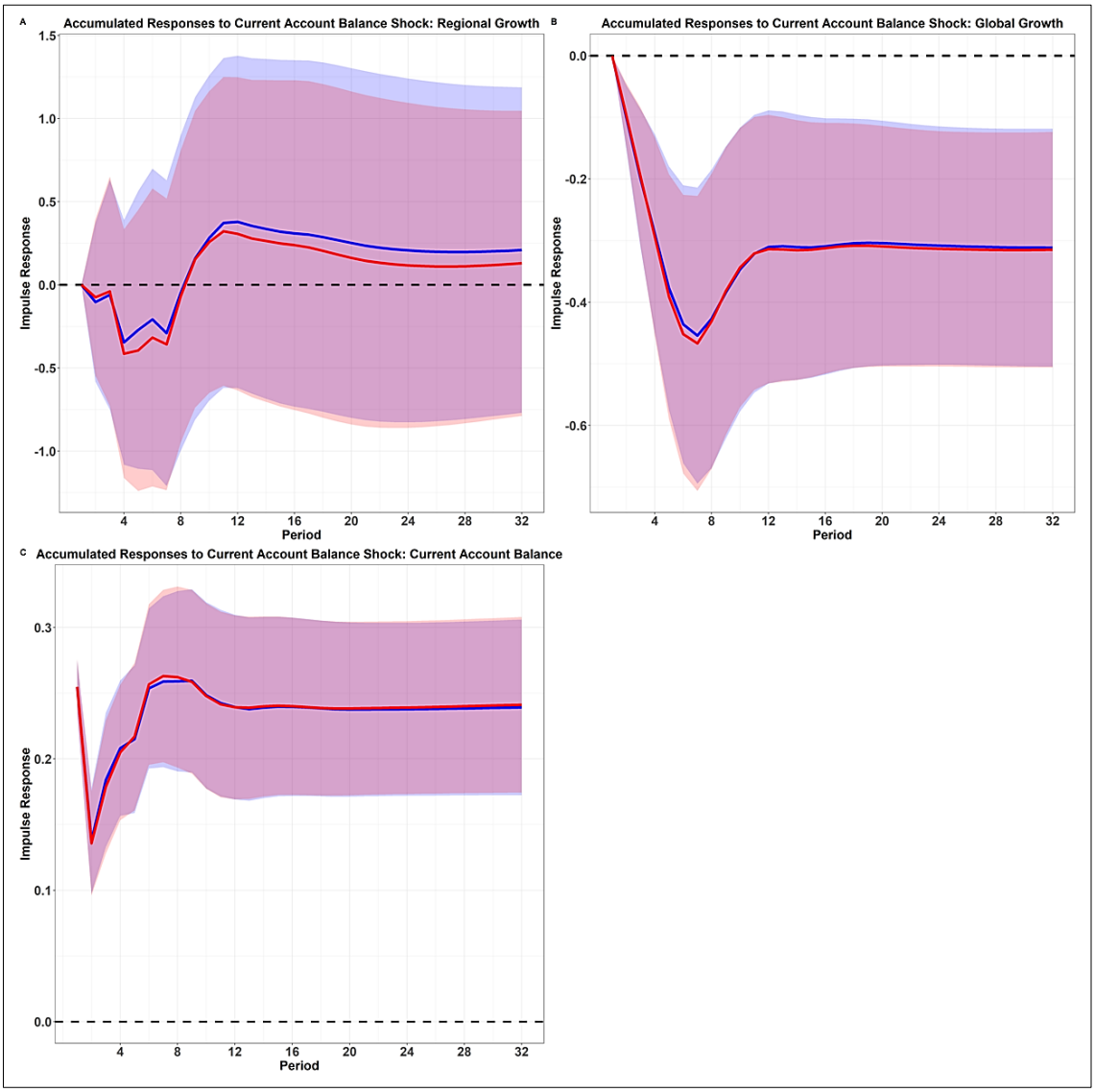
expectations from international macroeconomic theory, whereby a current account surplus implies an excess of national savings over investment and net capital outflows invested abroad. The productive use of such investment has clear positive implications for growth abroad. We also find that the magnitude of the effect on growth is amplified by trade in intermediate goods. This suggests that growing exports from current account surplus countries enhance the demand for imports in intermediate goods that are required as inputs for export production. Indeed, some work has supported the view that Germany acts as a regional hub for growth via GVCs (e.g., Baldwin 2013).

Figure 5: Impulse Responses to Current Account Balance Shock: United Kingdom



Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on block recursive restriction.

Figure 6: Impulse Responses to Current Account Balance Shock: United States



Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on block recursive restriction.

Turning to the current account deficit countries, a positive shock to the current account balance (i.e., reducing the deficit) results in different outcomes for the UK and the US. For the UK, as shown in Figure 5, we find that a one percentage point reduction in its current account deficit has a similar positive effect on regional and global growth of around 0.1 percentage points. This result is consistent with those found for shocks on current account surplus countries, albeit with smaller average magnitudes. A shift in the current account deficit toward more balance implies a reduction in net capital inflows to the UK from abroad and rising net exports, the resulting boost to domestic growth having positive spillovers abroad.

For the US, however, we find that a reduction in its current account deficit drags on regional and global growth, although there is a positive effect on regional growth after

around eight quarters (see Figure 6). Shocks imposed on the US current account balance therefore clearly lead to different effects on growth than for the other countries, possibly related to the global reserve currency status of the US dollar and transmission of the negative domestic effects of the US deficit abroad. High demand for US Treasury bonds from abroad even at very low interest rates (so-called 'exorbitant privilege') and the scale of US dollar-denominated claims held abroad are key distinguishing factors for the US. Our results indicate that a one percentage point shift in the US current account balance from deficit toward surplus would drag on global growth by around 0.3 percentage points. One explanation is that less demand from the US for goods and services from the rest of the world would have negative growth effects abroad. Historically, US consumers have acted as the 'buyer of last resort' for the global economy, propping up global demand (Greider 1998). Lower US import demand could hurt growth elsewhere. A further explanation is that a decline in the US current account deficit (which, through corresponding changes to the capital account, would lower demand for US dollar-denominated financial assets) would lead to a depreciation in the US dollar, which would lead to a negative wealth effect on foreign investors, reducing the value of already existing US dollar-denominated claims. Moreover, it is well understood that the US dollar's reserve currency status means that it can finance its borrowing from abroad at a relatively low cost, and this helps to spur domestic and global growth. It follows that a reduction in the US deficit may have a detrimental effect on global growth.

5. CONCLUSIONS

This paper examines the regional and global growth effects of the current account balances of the PRC, Germany, Japan, the UK, and the US. Controlling for a host of macroeconomic determinants, we find that current account surplus shocks emanating from the PRC, Japan, and Germany have strong positive effects on regional growth. Global growth also reacts positively to current account shocks in these economies, albeit with somewhat lower magnitudes. These positive effects hold regardless of whether GVCs are accounted for, although the responses are notably stronger with GVCs. For current account deficit countries, the magnitude of the effect of positive shocks to the current account balance (i.e., reducing the deficit) on regional and global growth is much lower. For the UK, its resulting stronger net exports spill over positively abroad, helped by trade in intermediate goods. In the case of the US, there is a slight negative effect on global growth as the effects of its deficit transmit negatively abroad. Arguably, this is related to the US dollar's special status as a global reserve currency and the scale of US-dollar denominated assets abroad. In particular, a positive shock to the US current account balance and resulting depreciation of the US dollar could have negative wealth effects abroad, as the value of US-dollar denominated claims held by foreign investors would fall.

Our findings have important policy implications. In particular, they suggest that countries with large and persistent current account surpluses do not necessarily drag on regional growth, contrary to conventional wisdom that their inherent lower levels of domestic demand and investment and highly competitive export sector negatively affect the growth of the region. Therefore, rather than focus on measures aimed at reducing high and persistent current account surpluses *per se*, it is important for policymakers to understand more closely the nature of trade between countries, notably in relation to trade in intermediate goods at the regional level. Going forward, future research may consider examining the channels through which different characterizations of a current account imbalance affect extra-country growth at the regional and global levels.

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APPENDIX

Table A1: Sign Restrictions

	Current Account Balance	Global Growth	Regional Growth	Real GDP Growth	Credit to GDP	Trade Openness	REER	Net Foreign Assets	Old-Age Dependency	Fiscal Balance	Global Value Chain
Positive Current Account Balance Shock	>0	?	?	<0	<0	>0	<0	<0	<0	<0	>0

Note: ? denotes no restriction; > defines a positive effect of the current account balance shock on the variable; < defines a negative effect of the current account balance shock on the variable

Figure A1: Current Account Balance and Fitted Values from the First-Stage Regression: PRC

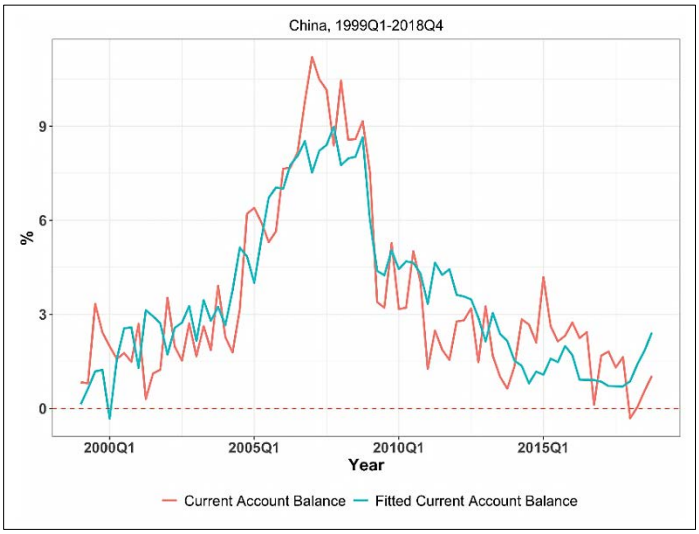


Figure A2: Current Account Balance and Fitted Values from the First-Stage Regression: Germany

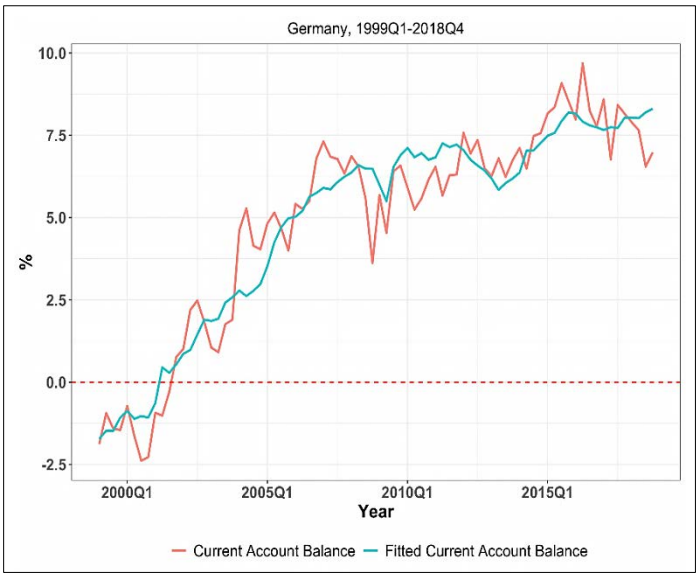


Figure A3: Current Account Balance and Fitted Values from the First-Stage Regression: Japan

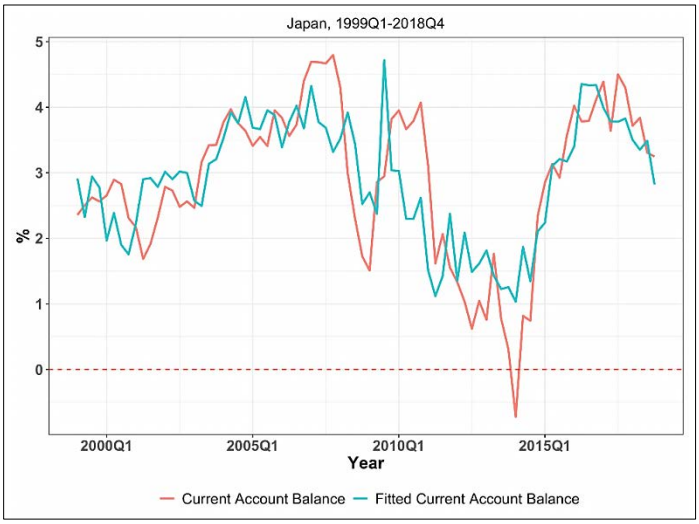


Figure A4: Current Account Balance and Fitted Values from the First-Stage Regression: United Kingdom

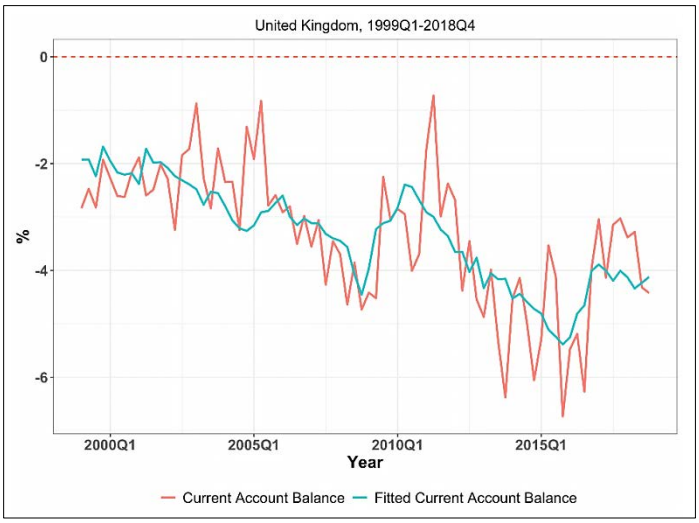


Figure A5: Current Account Balance and Fitted Values from the First-Stage Regression: United States

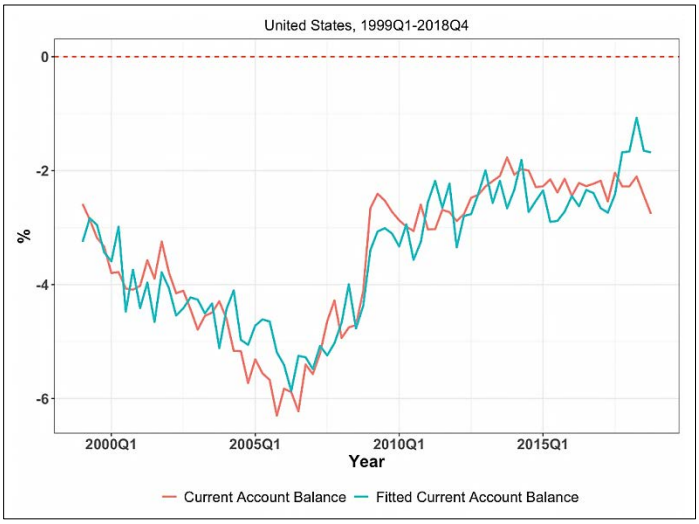
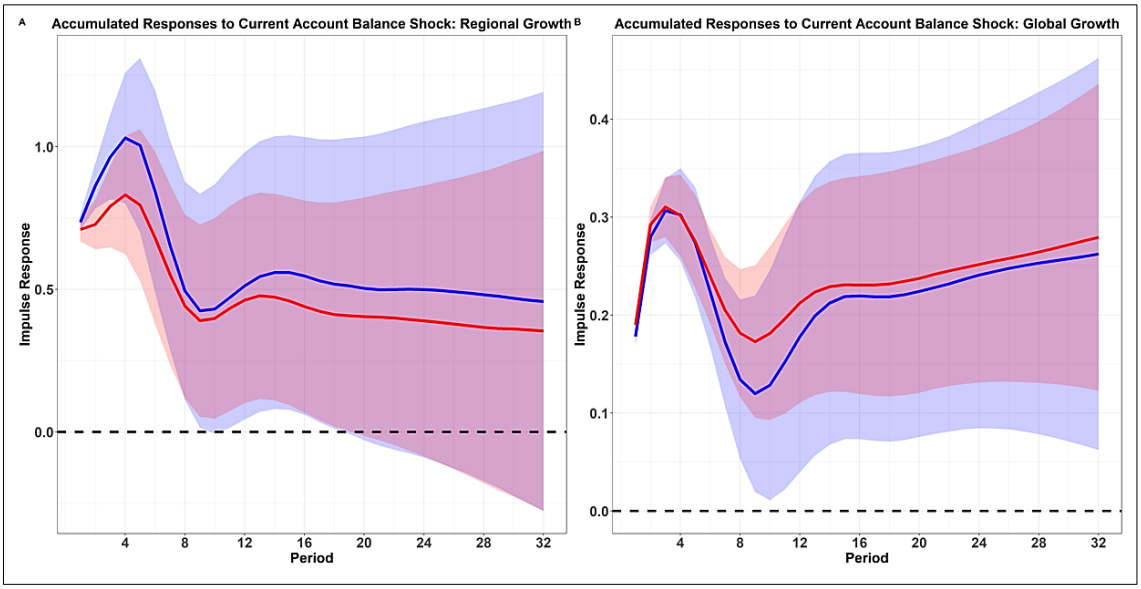
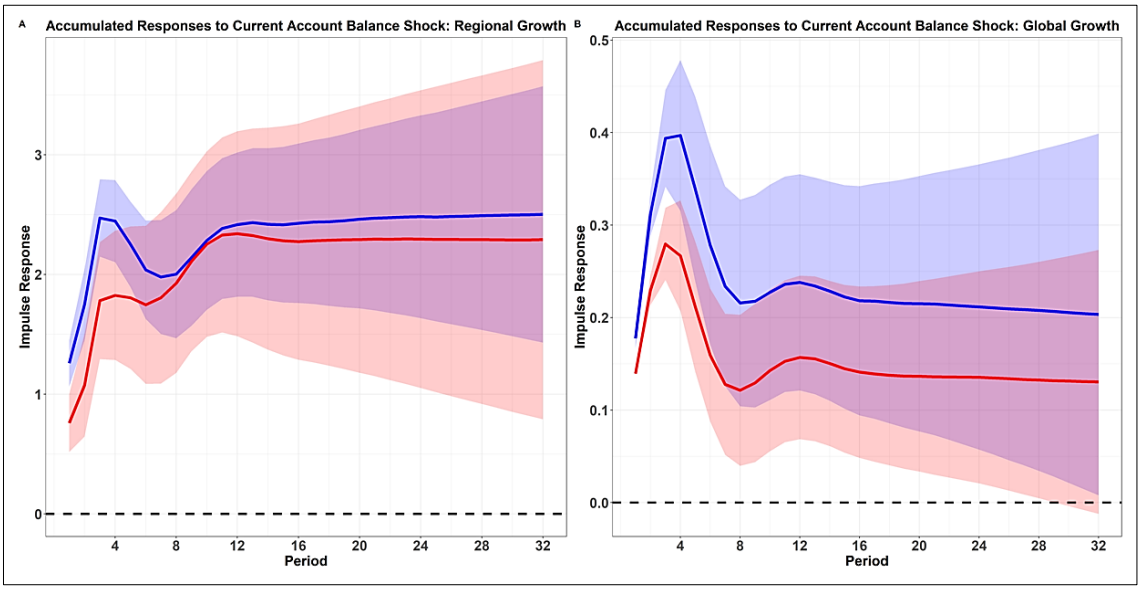


Figure A6: Impulse Responses to Current Account Balance Shock: PRC



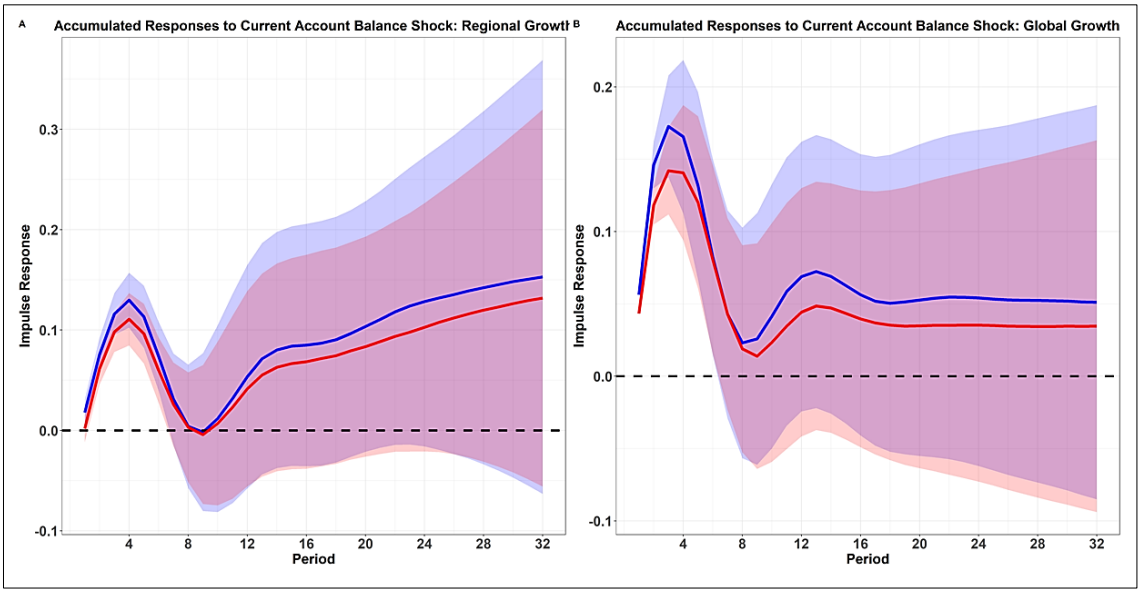
Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on sign restrictions as per Table A1.

Figure A7: Impulse Responses to Current Account Balance Shock: Japan



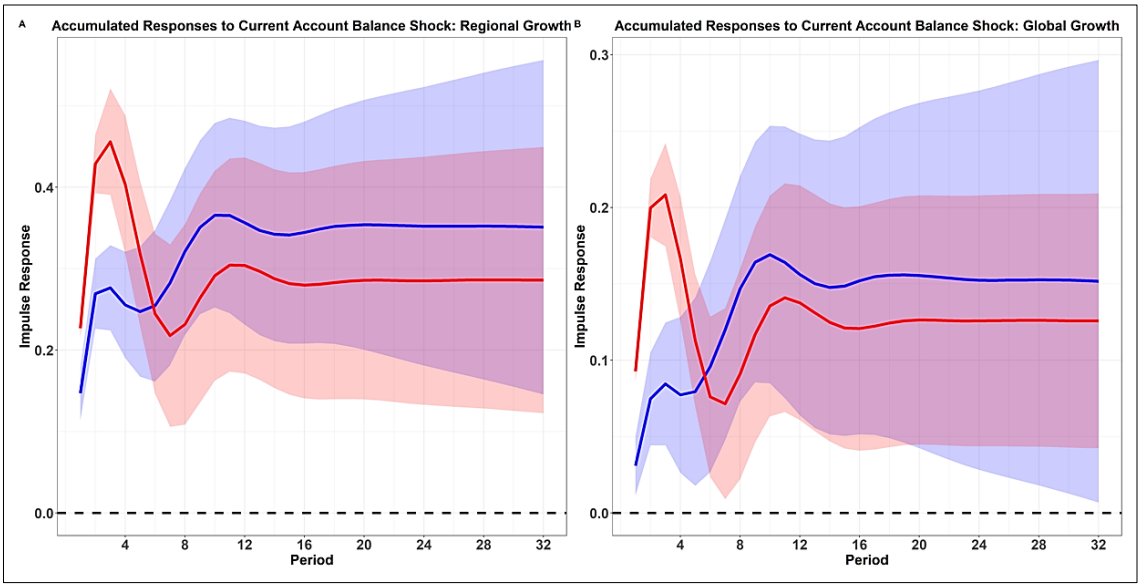
Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on sign restrictions as per Table A1.

Figure A8: Impulse Responses to Current Account Balance Shock: Germany



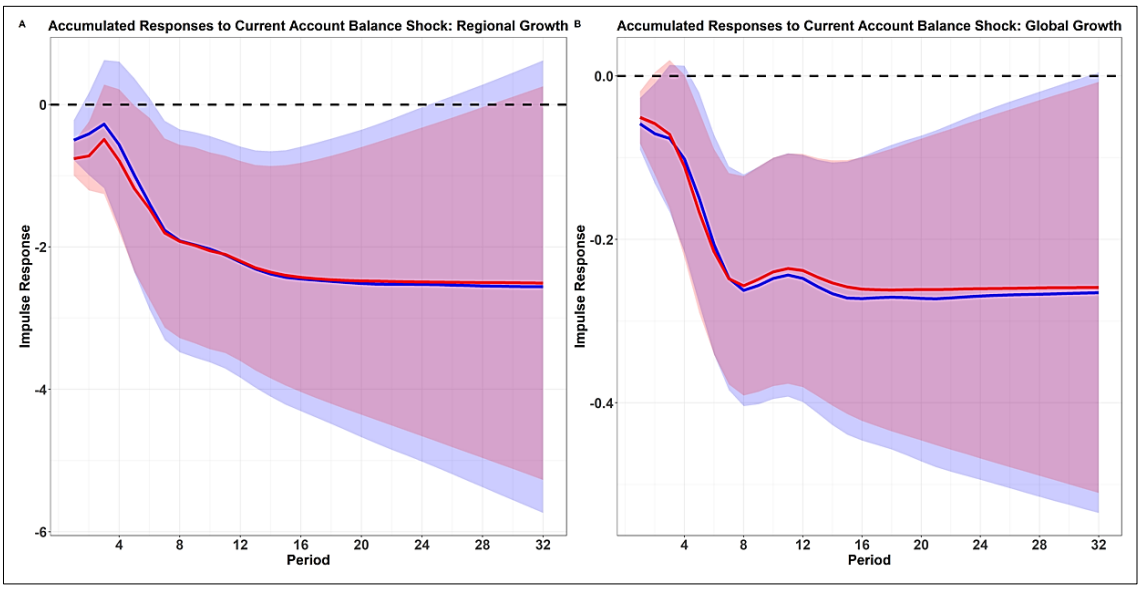
Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on sign restrictions as per Table A1.

Figure A9: Impulse Responses to Current Account Balance Shock: United Kingdom



Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on sign restrictions as per Table A1.

Figure A10: Impulse Responses to Current Account Balance Shock: United States



Note: The blue line refers to the impulse response in the framework that includes GVCs. The red line refers to the impulse response in the framework that excludes GVCs. The blue shaded area refers to the 95%) standard error bands of the impulse response in the framework that includes GVCs. The red shaded area refers to the 95%) standard error bands of the impulse response in the framework that excludes GVCs. Identification scheme based on sign restrictions as per Table A1.