Global imbalances: Is Germany the new China? A skeptical view

Sengupta, Rajeswari and Aizenman, Joshua

University of California Santa Cruz

23 September 2010

September 2010

Global Imbalances: Is Germany the new China? A Skeptical View

by

Joshua Aizenman and Rajeswari Sengupta

University of California, Santa Cruz

Abstract

In this paper we evaluate the current account patterns of China and Germany. We point out that China's current account surplus as a share of global GDP in recent years resembles that of Germany's. Yet, an important difference is that the Euro block's current account inclusive of Germany, has overall been balanced, whereas emerging Asia's current account inclusive of China, has mostly been characterized by sizable surpluses. We further find that both China and Germany's current account surpluses seem to be accounted for by common factors. However we have reasons to doubt the long run viability of these current account trends in future decades. Demographic transitions in China and Germany are projected to reduce their surpluses, and this effect is stronger for Germany. We also discuss plausible reasons to doubt the extent to which the Euro block will move towards significant surplus in the coming years.

Joshua Aizenman
UCSC and the NBER
E2, 1156 High Street,
Santa Cruz, CA 95064
jaizen@ucsc.edu

Rajeswari Sengupta
UCSC
E2, 1156 High Street
Santa Cruz, CA 95064
rsengupt@ucsc.edu

Keywords: current accounts, demographic transitions, global imbalances

JEL classification: F15, F32

"Let me introduce you to Chermany, a composite of the world's biggest net exporters: China, with a forecast current account surplus of $291bn this year and Germany, with a forecast surplus of $187bn. ... Both also believe that their customers should keep buying, but stop irresponsible borrowing. Since their surpluses entail others' deficits, this position is incoherent. Surplus countries have to finance those in deficit. If the stock of debt becomes too big, the debtors will default. If so, the vaunted "savings" of surplus countries will prove to have been illusory: vendor finance becomes, after the fact, open export subsidies."

Martin Wolf, "China and Germany Unite to Impose Global Deflation" Financial Times, March 16, 10

The great recession has focused attention on the sizable current account surpluses of China and Germany, leading some observers to align the two into a unified block sharing similar agenda. The purpose of our note is to evaluate the current account patterns of China and Germany in context of the global imbalances, and to discuss the future prospects of the continuation of these surpluses. We start by reviewing the current account patterns of these two countries during the last 30 years. Thereafter, we evaluate their current account patterns in context of regional and global imbalances, then conduct an empirical analysis of the possibility that common global and domestic factors account for the current account patterns of both countries, and finally conclude with an assessment of future trends.

From a quick inspection of the data, China seems to be the new Germany rather than the other way round. Indeed, Germany has been running significant current account surpluses during most of the 1980s, reaching 5% of its GDP in the mid 1980s, at a time when China experienced current account deficits, reaching -4 % of its GDP in the mid 1980s [see Figure 1]. Germany's current account moved towards a balanced position during the 1990s, possibly reflecting the fiscal challenges associated with unification with East Germany. On the other hand China's current account stance changed from closed to being balanced in the first half of the 1990s, into surpluses ranging between 2% and 4% of its GDP during the second half of the 1990s. Intriguingly, in the 2000s, the patterns of the current accounts of China and Germany became highly correlated, moving in tandem, from about 2% to nearly 10% of their respective GDPs in 2006, and dropping to 6% of their GDPs in 2008. Figure 3 suggests that an obvious common external factor was 'accounting' for the current account patterns of *Chermany*: the US current account deficit. [1]

Figure 1, focusing on the current account to GDP ratio, overlooks the fact that size matters. Small countries play a minor role in global imbalances, independent of their current account to GDP ratios [see Aizenman and Sun (2010)]. The big story of the last 30 years has been the sustainable, high growth rate of Chinese economy. From a small economy close to autarky in 1980, China has now become a major trader of goods and services, and a key player in the context of global imbalances. This is vividly illustrated by tracing the current account patterns of China and Germany in USD Billions, in Figure 2. It is worthwhile to note here that unitl 1994, the contribution of China to global imbalances was pratically nil. China's current account surplus accelerated from 2000s onwards, surpassing that of Gemany in 2007, thereby confirming the point that, if at all, China is the new Germany. The remakable accleration of current account srupluses of China took place at a time when trade openness of China, which was about one-third of Germany in the early 1980s, reached that of Germany in 2000s [see Figures 6-7].[2]

A look at the regional patterns reveals an obvious difference between Germany and China. Germany has been the anchor of exchange rate of the core of Europe before and after the formation of the Euro. Figure 3 shows that during the last 30 years the average current account of the Euro block was close to a balanced position. Thus, as long as the Euro block is viable, and its current account is closed to being balanced, concerns about the German current account surpluses happen to be more of an European issue, rather than a Global-imbalances issue. In contrast, China has been de-facto part of the dollar block- a block that seems to be characterized during the 2000s by sizable current account surpluses of China, moving in tandem (but in opposite direction) with the current

[1] Over the last decade (2000 to 2009) the correlation coefficients between US current account and the current accounts of China and Germany were, -0.42 and -0.81 respectively.

[2] The correlation coefficients between the current accounts (in USD) of China and Germany between 1980-1994 and 1995-2009 were, -0.29 and 0.93 respectively. Furthermore, the correlation coefficients between current accounts (in USD) of China and USA between 1980-1994 and 1995-2009 were, 0.48 and -0.61 respectively. The correlation coefficients between current accounts (in USD) of Germany and USA between 1980-1994 and 1995-2009 were, -0.57 and -0.81 respectively.

account of the US.   These patterns were dubbed by Dooley et al (2003) as Bretton Woods II. However, it is fair to say that Europe has been quite a neutral block in terms of its net contribution to global imbalances, and most of the balancing of the current account deficits of the US during the 2000s was done by East Asia and the oil and commodity exporting countries. Ironically, Germany seems to play the role of China within the Euro block, de-facto financing deficits of other block members [See Figures 4 and 5].

Data Analysis

Against this background, we next evaluate the patterns of the current account to GDP ratios of China and Germany, as a function of lagged conditional variables in a panel analysis, for 1970-2009 [see Tables 1-2]. The relatively short duration of our sample constrains our approach, and hence we sequentially add lagged conditioning variables to a bivariate regression. The set of controlling variables is mostly from Chinn and Prasad (2003) and Gruber and Kamin (2007). It includes the US current account (reflecting the possible impact of the US as the demander of last resort), world growth rate, a country's net foreign asset position, government budget balance, demographic factors (old and young dependency ratios), domestic credit to GDP ratio to proxy for domestic financial depth, trade openness, and a country's own GDP growth rate. We also estimate these countries' current account patterns by applying the Seemingly Unrelated Regression [SUR] Model, for 1970-2009 [see Table 3].

One result that is common to all our estimations is the key importance of a common global factor -- the US current account. In the SUR model, the current account/GDP surpluses of China and Germany are found to be moving in tandem with the US current account/GDP deficits, with a coefficient that is close to one. This implies that a rise in US current account/GDP deficit by 1% is associated with an equal rise of the current account/GDP surpluses of China and Germany. The growth rate of the global GDP seems to be playing an important role for Germany, but not for China. These results are in line with the key role of the US as the demander of last resort during our sample period.

Future Trends: Discussion

The dominance of the US as the spender or demander of last resort before the crisis, and the importance of the global growth rate in accounting for the surpluses of Germany hints at the limited viability of large future current account surpluses of China and Germany. This may especially be the case if the drop in US current account deficit/GDP ratio endures beyond the crisis period. In the global equilibrium, the sum of all current accounts should add up (up to statistical discrepancy) to zero. Hence, focusing on the creditors as the source of the challenges facing the global economy overlooks the contribution of the US itself to global imbalances. Similarly, focusing only on the debtor(s) would overlook the need for all parties to move from the pre-crisis state of affairs to the post-crisis one.

There are reasons to expect that the pre-crisis trends may be unsustainable. To recall, in 2000-2007, the US current account deficit/GDP was about 4-5%, funded partially by Chinese surpluses of about 8-10%, and significant current account surpluses of oil exporters, and few other countries. Looking forward, demographic factors are likely to impose important balancing effects on future current account trends. Figure 9 suggests that future demographic transitions would work towards narrowing the surpluses on China and Germany. During the next 30 years, the dependency rate of the old (population share of 65 years and older) in Germany and China would increase dramatically relative to the US. The dependency ratio of the old in the German and Chinese population is projected to increase during 2010-2035 by about 24% and 19%, respectively, whereas that of the US would increase by 14%. The dependency ratio of the young (population share of 15 years and younger) in Germany is projected to increase by 2%, whereas that of the US and China are predicted to go down by 4% and 2%, respectively. These trends may work towards mitigating the surpluses of China and Germany. Table 4 summarizes the projected changes in the dependency rates, and their projected marginal contributions, applying the regression results of Gruber and Kamin (2007). The demographic transitions of China and Germany in the next 25 years are projected to reduce their current account/GDP by about 2.5% and 3.5%, respectively.

This effect is stronger for Germany, reflecting the greater increase in the old dependency rate in Germany. These adjustments tend to be front-loaded, as the old dependency ratio curves in Figure 9 follow logistic patterns, and hence this process is likely to kick-in early on. The demographic transition in the US is projected in increase US current account deficit/GDP by 2%. Consequently, the projected demographic transitions in China and Germany would reduce their current account surpluses, mitigating their contribution to global imbalances. In contrast, the projected demographic transition in the US would increase US current account deficit, suggesting that demographics would not mitigate the need of the US to increase its net savings.

While projecting future GDP growth rates may be subject to larger standard errors than projecting demographic trends, most observers expect the growth rates of China and other emerging markets to exceed that of the US and the OECD countries by a large margin. This trend has important repercussions on the future global imbalances, and the current accounts of China and Germany. A small country embarking on an export led growth, like China in the 1970s, can sustain it without imposing negative ripple effects as long as its relative size remains small. However, the long run success of the Chinese growth strategy may put in motion forces that may curtail the sustainability of a high GDP growth rate and a large current account surplus path. By now, China has reached a critical mass of "an elephant running in a China store." The continuation of the fast growth rate of China, while maintaining large current account surplus/GDP , would be conditional on the sustainability of larger current account deficit/GDP of countries that grow at a much slower rate. This can be illustrated by investigating the size distribution and the durability of current account deficits, and by a simulation that relies on the adding-up property of current account balances, which, up to statistical discrepancies, should sum-up to zero.

Aizenman and Sun (2010) found that, with the exception of the US, the duration of spells of current account deficits during the decades prior to the 2008-09 global crisis depended negatively on the relative size of a country, as measured by its GDP/World GDP. The continuation of the pre-crisis path of the Chinese GDP growth rate, exceeding 10% a year while sustaining a current account/GDP ratio of 10 % would require overtime, large increases in the current account/GDP ratios of large players, like the US. Short of the emergence of a new demander of last resort, one may reasonably expect the unwinding of global imbalances in the coming years. This follows the observation that the US is already facing deleveraging "stabilization blues." The housing market weaknesses and the resultant private sector deleveraging point to probable reduction of consumption and increase in saving, thereby curtailing US current account deficits [see Glick and Lansing (2009)]. Similarly, the Greek crisis has put in motion forces reinforcing belt-tightening in Southern Europe. Coupled with this, the differential attitude towards fiscal policy of the core of Europe, i.e. of France and Germany, suggests that Europe may not be eager to replace the old role of the US as the global demander of last resort. EU's tendency to run on average, balanced current accounts remains an issue that deserves further exploration. Arguably, this may reflect the greater political bargaining clout of labor in Europe relative to the US. In circumstances when current account deficits are driven by balance of trade deficits, labor may oppose larger deficits to mitigate downwards wage pressure.

The unwinding of global imbalances may be facilitated by a gradual shift of China from export led growth, towards a balanced growth of internal demand, a strategy that may be consistent with the continuation of Chinese employment and GDP growth [see Feenstra and Hong (2010)]. In addition to this, the continued rise in global GDP share of emerging markets may provide a further impetus for Asian countries to switch towards heavier reliance on policies boosting domestic demand. This in turn suggests the presence of market forces that may induce China and other emerging markets to scale down their current account surpluses over time. Thus, we may expect that short of the emergence of a "new demander of last resort" replacing the US, the Chinese growth path would be challenged by the limited appetite for prolonged current account deficits of most countries, and Europe would continue running close to balanced current accounts.

References

Aizenman, J. and Y. Sun (2010). “Globalization and the Sustainability of Large Current Account Imbalances: Size Matters,” *Journal of Macroeconomics*, 32, 1: 35-44.

Chinn D. M. and E. S. Prasad (2003). “Medium-term determinants of current accounts in industrial and developing countries: an empirical exploration.” *Journal of International Economics*, 59, 1: 47-76.

Dooley, M. P., D. Folkerts-Landau and P. Garber (2003), “An Essay on the Revived Bretton Woods System,” NBER Working Paper no. 9971.

Feenstra C. R. and C. Hong (2010). “Chinese Exports and Employment,” Chapter 5 in *China’s Growing Role in World Trade*, Feenstra C. R. and S. J. Wei (eds), University of Chicago, Chicago.

Glick, R. and K. J. Lansing (2009). "U.S. Household Deleveraging and Future Consumption Growth." *FRBSF Economic Letter* 2009-16.

Gruber J. W. and S. B. Kamin (2007)“Explaining the global pattern of current account imbalances” *Journal of International Money and Finance* 26, 4: 500-522

Figure 1: Current Account to GDP Ratios of China and Germany

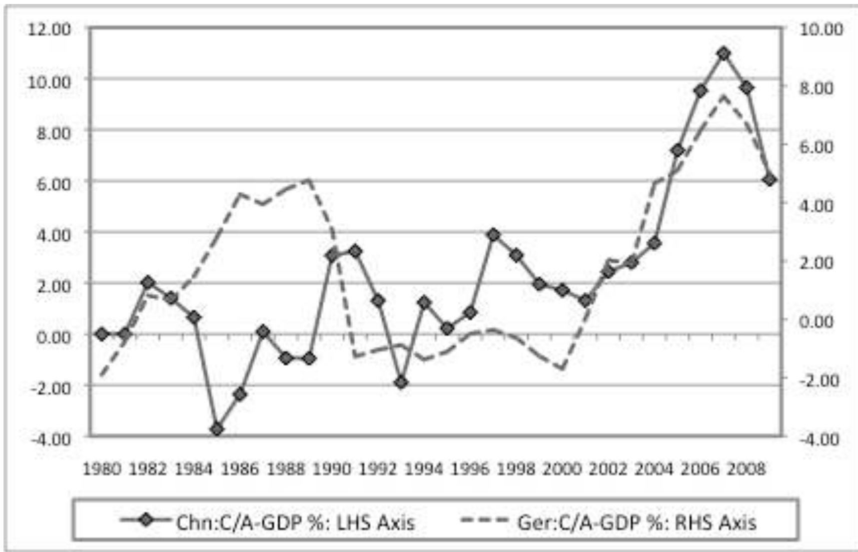


Figure 2: Current Account Balance in USD Billions of China and Germany

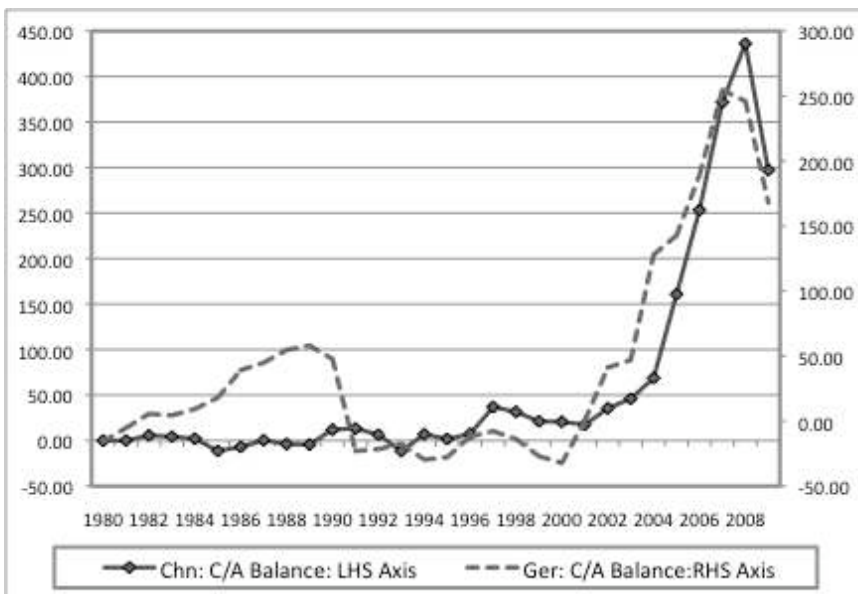


Figure 3: Countries' Current Account Balance as percentage of World GDP

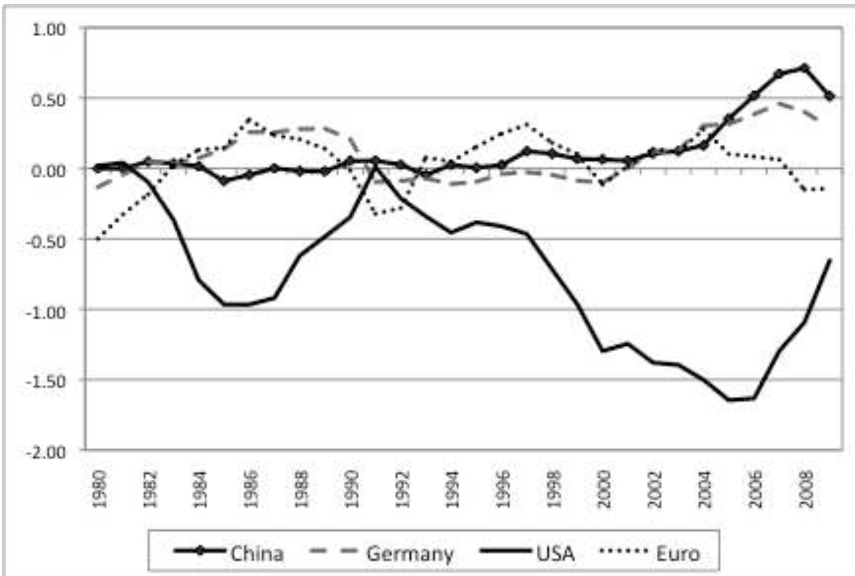
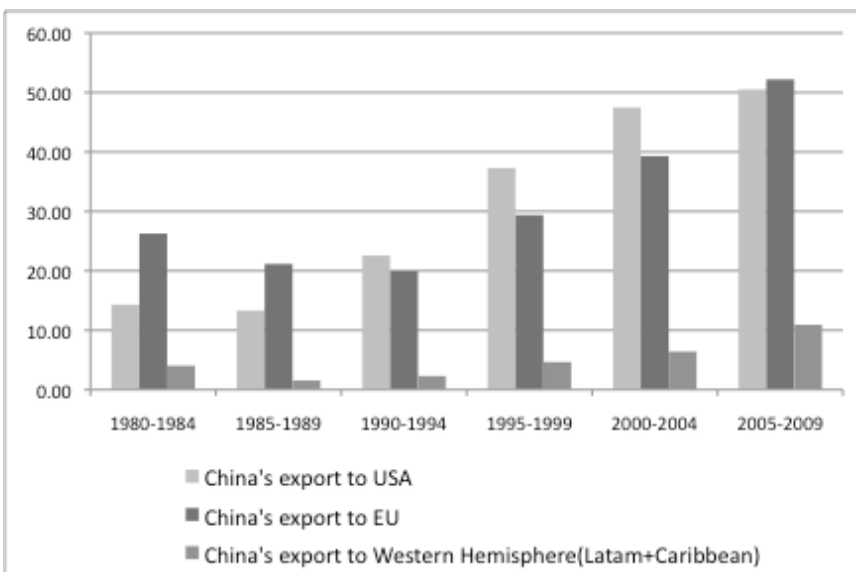


Figure 4: China's Exports to three main regions as percentage of its exports to East Asia[3]



---

[3] East Asia here includes the ASEAN countries as well as Hong Kong (HK), Japan (JA), Korea (KO) and India (IND).

Figure 5: Germany's Exports to three main regions as percentage of its exports to EU

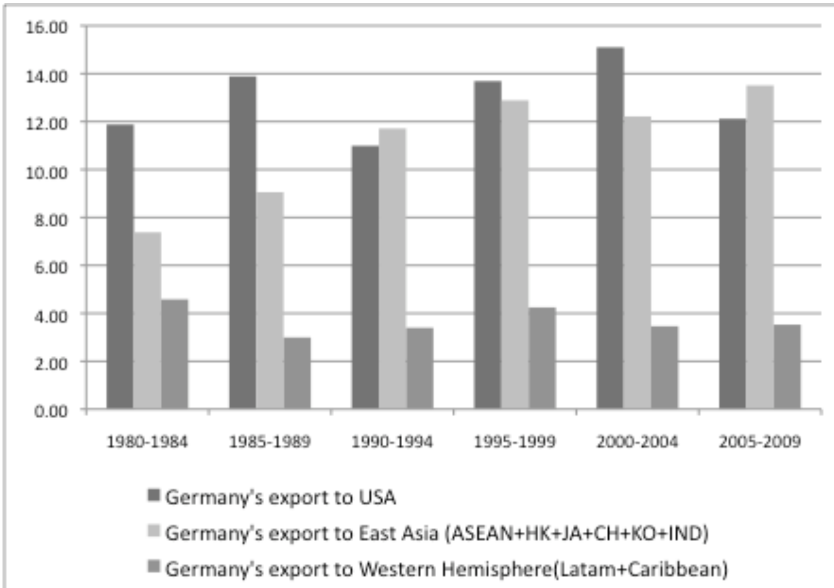


Figure 6: Ratio of Exports to GDP of China and Germany

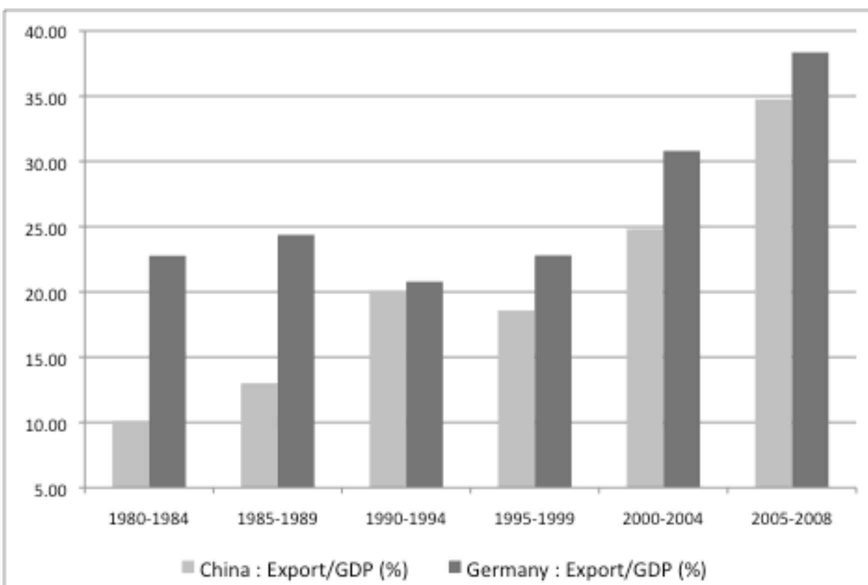


Figure 7: Ratio of Imports to GDP of China and Germany

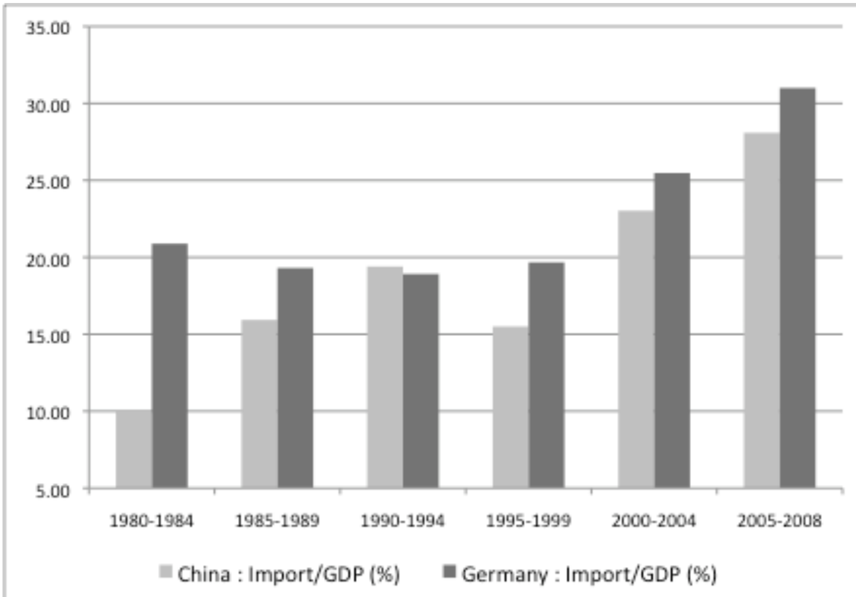


Figure 8: Projections of Dependency Ratios (Young)

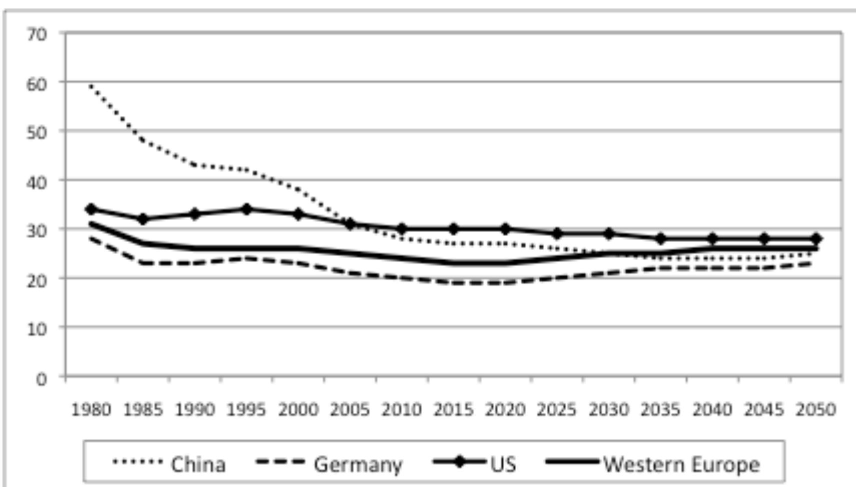


Figure 9: Projections of Dependency Ratios (Old)

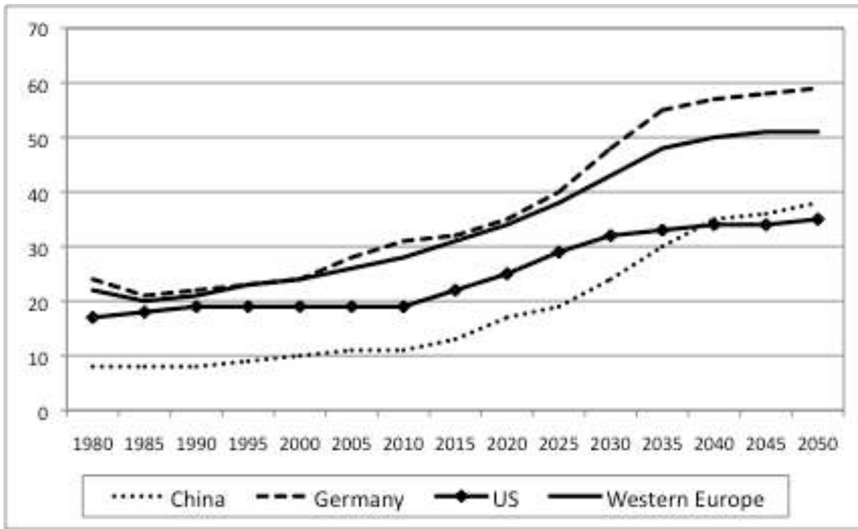


Table 1: Estimation of Germany's Current Account/GDP

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lagged Net Foreign Assets/GDP	0.11***	0.04	0.04	0.04	0.11**	0.02	-0.00	0.04	-0.02
	-0.03	-0.03	-0.03	-0.03	-0.05	-0.03	-0.04	-0.03	-0.03
Lagged US Current Account/GDP		-0.67***	-0.68***	-0.88***	-0.67***	-1.61***	-0.57***	-0.67***	-0.43***
		-0.20	-0.19	-0.28	-0.20	-0.20	-0.20	-0.20	-0.15
Lagged World Growth Rate		0.10**	0.11**	0.08	0.10**	-0.03	0.11**	0.11**	0.02
		-0.04	-0.05	-0.05	-0.04	-0.05	-0.05	-0.04	-0.04
Lagged Govt. Budget Balance/GDP			-0.06						
			-0.19						
Lagged Dependency Ratio (Young)				0.11					
				-0.08					
Lagged Dependency Ratio (Old)					-0.46*				
					-0.24				
Lagged Domestic Credit/GDP						-0.09***			
						-0.01			
Lagged Trade Openness							0.11*		
							-0.06		
Lagged GDP Growth Rate								-0.06	
								-0.17	
Lagged Current Account/GDP									0.73***
									-0.14
Constant	-0.42	-1.46***	-1.61**	-4.37*	8.45	7.28***	-5.90**	-1.34**	-0.21
	-0.50	-0.49	-0.77	-2.16	-5.12	-1.42	-2.41	-0.59	-0.47
Observations	39	38	38	38	38	38	38	38	38
R-squared	0.44	0.59	0.59	0.60	0.63	0.80	0.62	0.59	0.77

Notes: The dependent variable is current Notes: The dependent variable is current account balance scaled by GDP of Germany. The table shows time-series estimation results from ordinary least squares regression over the period from 1970 to 2009, using lagged, annual values of all explanatory variables. Robust standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 2: Estimation of China's Current Account/GDP[4]

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Lagged US Current Account/GDP	-1.01***	0.41							
	-0.25	-0.34							
Lagged World Growth Rate	0.04	0.06							
	-0.07	-0.04							
Lagged Net Foreign Assets/GDP		0.22***	0.18***	0.21***	0.22***	0.21***	0.15***	0.19***	0.11***
		-0.05	-0.02	-0.06	-0.04	-0.05	-0.05	-0.03	-0.03
Lagged Govt. Budget Balance/GDP			0.23						
			-0.20						
Lagged Dependency Ratio (Young)				-0.39					
				-0.80					
Lagged Dependency Ratio (Old)					0.08				
					-0.05				
Lagged Domestic Credit/GDP						-0.01			
						-0.02			
Lagged Trade Openness							0.04		
							-0.06		
Lagged GDP Growth Rate								-0.32***	
								-0.10	
Lagged Current Account/GDP									0.42***
									-0.15
Constant	-0.39	-0.62	-0.15	2.47	-5.10*	0.32	-1.64	2.39**	-0.30
	-0.80	-0.70	-0.68	-6.50	-2.95	-1.13	-1.41	-0.91	-0.44
Observations	38	32	32	32	32	32	29	32	32
R-squared	0.38	0.75	0.74	0.74	0.75	0.74	0.73	0.80	0.77

Notes: The dependent variable is current account balance scaled by GDP of China. The table shows time-series estimation results from ordinary least squares regression over the period from 1970 to 2009, using lagged, annual values of all explanatory variables. Robust standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

[4] Given the relatively high correlation between China's NFA and US current account deficit (-0.8), we exclude US current account as well as world growth rate from column (3) onwards i.e. when China's lagged NFA to GDP ratio is incorporated.

Table 3: Impact of Common Factors on Current Account/GDP

VARIABLES	Current Account/GDP of China (in %)	Current Account/GDP of Germany (in %)
Lagged US Current Account/GDP	**-0.96*****	**-0.96****
	(0.21)	**(0.14)**
Lagged Own Growth Rate	0.05	-0.04
	(0.04)	(0.04)
Lagged World Growth Rate	0.01	0.20***
	(0.07)	(0.08)
Constant	-0.60	-1.64***
	(0.83)	(0.59)
Observations	38	38
R-Squared	0.41	0.60

Notes: The dependent variable is current account balance scaled by GDP of China and Germany respectively. The table shows time-series estimation results from a seemingly unrelated regression model over the period from 1970 to 2009, using lagged, annual values of all explanatory variables. Robust standard errors are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Predicted Impact of Demographic Changes on Current Account/GDP between 2010 and 2035

Countries	Projected Change in Dependency Ratio (Young)	Predicted marginal impact on the Current Account/GDP	Projected Change in Dependency Ratio (Old)	Predicted marginal impact on the Current Account/GDP	Predicted total marginal impact on the Current Account/GDP
China	-0.04	0.001	0.19	-0.026	**-0.024**
Germany	0.02	-0.001	0.24	-0.032	**-0.033**
USA	-0.02	0.001	0.14	-0.019	**-0.018**

Notes: The projected changes in dependency ratios (young and old) are from the United Nations World Population Database. The predicted marginal impact on the current account/GDP for each country is based on Gruber and Kamin (2007), regression (1) in Table 2. They found that the marginal effects of young and old dependency ratios are -0.03 and -0.13, respectively. To illustrate, an increase of the old dependency ratio by 0.24 is projected to change the current account by -0.13*0.24 = - 0.032, reducing surpluses (or increasing deficit) by about 3% of the GDP.

Appendix: Data Description

Variables	Data Sources
Current Account, Nominal GDP, Net Foreign Assets, Government Budget Balance	World Economic Outlook (WEO)
Age Dependency Ratio, Young (% of working-age population below 15 years)	World Development Indicators (WDI)
Age Dependency Ratio, Old (% of working-age population above 65 years)	World Development Indicators (WDI)
Domestic Credit to Private Sector (% of GDP)	World Development Indicators (WDI)
Trade Openness (Sum of Exports and Imports Divided by GDP)	Direction of Trade Statistics (DOT)
Projections of Dependency Ratios (Young and Old)	United Nations World Population Database