

Comovements and Global Imbalances of the Current Account Balances

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Introduction

- Global imbalances (GI) – the coexistence of large current account surpluses and deficits – are often implicated as an underlying cause of the Global Financial Crisis of 2007-08, which was followed by a global economic downturn and the euro area crisis.
- Numerous studies have been made to uncover the causes of the GI. Prominent hypotheses among the existing studies include
 - i. the twin deficits hypothesis linking the government budget balance to the current account,
 - ii. the global saving glut hypothesis,
 - iii. real macroeconomic factors such as demography and productivity growth differentials as drivers of saving or investment behaviors,
 - iv. financial under-development in emerging market economies leading to the shortage of high-quality safe assets, and
 - v. a surge in demand for international reserves among emerging market economies in the aftermath of recurrent currency crises

2. The Current Account and Global Imbalances

- International macroeconomic relationships of CA balances

$$1) CA_1 + CA_2 + \dots + CA_N = 0$$

$$2) CA_j = NS_j - I_j = (PS_j - BD_j) - I_j$$

$$3) CA_j = -\sum_{i \neq j} CA_i = -CA_{ROW} = -(NS_{ROW} - I_{ROW})$$

$$4) CA_j + KI_j = \Delta FR_j$$

In a **two-country** setting (the US and the ROW)

$$\square CA_{US} = -CA_{ROW} \quad (1a)$$

$$\square CA_{US} = S_{US} - I_{US} = (PS_{US} - BD_{US}) - I_{US} \quad (2a)$$

$$\square CA_{US} = -CA_{ROW} = -(NS_{ROW} - I_{ROW}) \quad (3a)$$

$$\square CA_{US} = -CA_{ROW} = -(KO_{ROW} + \Delta FR_{ROW}) \quad (4a)$$

- (1a) The US deficit is the sum of ROW surpluses.
- (2a) Holding private saving and investment constant, an increase in budget deficits will increase the CA deficit. **The Twin Deficits Hypothesis**
- (3a) (1a) and (2a) suggest that the US deficit should be equal to the sum of ROW excess saving. **The Global Saving Glut hypothesis**
- (4a) The US current deficit has **financial dimensions**. It equals the sum of ROW capital outflow (private purchase of US financial assets) and ROW accumulation of international reserves (public purchase of US financial assets)

Causes of the current account deficits

1. Increases in BD_{US} : expansionary fiscal policy in the US
2. A reduction in PS_{US} : optimistic growth projection, real estate / financial market booms in the US
3. Increases in NS_{ROW} and/or decreases in I_{ROW} : aging population, etc.
4. Increases in ΔFR_{ROW} : ROW accumulation of international reserves after the 1997 Asian financial crisis
5. Increases in KO_{ROW} : ROW (private) purchases of US financial assets (considered to be “safe”)

These suggest that the causes of current account imbalances are likely to be extremely diverse:

- a. Internal (domestic) or external (foreign)
- b. Real or financial
- c. Private or government (central bank) action

In this paper, we focus on the **external dimension** of current account developments. This can be **global or regional**.

Purpose of the paper

- The purpose of this paper is to address the interaction of these various factors in the determination of the current account balance in a large group of countries.
- We first estimate a dynamic factor model that decomposes the observed variation in the current account into a common global factor, a regional factor (developed or emerging) and an idiosyncratic country-specific factor.
- We consider two regions: advanced economies and emerging market economies. The sample includes 20 countries in total: the U.S. and its major trading partners.
- The group of countries accounts for around 80 percent of U.S. total trade.

The Dynamic Factor Model

- We propose a model that decomposes the variation of each country's current account into their world, regional, and idiosyncratic or country-specific components.
- We estimate the unobserved common factors of current account balances using Bayesian estimation strategies based on the Monte Carlo Markov Chain (MCMC) procedure.
- We employ the dynamic factor models of Del Negro and Otrok (2008), which allow incorporation of time-varying factor loading parameters and stochastic volatility, as in Bhatt, Kishor and Ma (2017) and others.
- The Bayesian dynamic factor model is more convenient for estimation than other dynamic factor models that are based on classical estimation strategies.

The dynamic factor model

- The dynamic factor models of Del Negro and Otrok (2008) are based on the following equation.

- $y_{i,t} = c_i + \lambda_{i,t}G_t + \gamma_{i,t}R_t + e_{i,t}$
- $\beta_{i,t} = \beta_{i,t-1} + \sigma_{\eta,i}\eta_{i,t}$ where $\beta_{i,t} = [\lambda_{i,t}, \gamma_{i,t}]'$.
- $G_t = \phi_1^g G_{t-1} + \dots + \phi_q^g G_{t-q} + e^{h_t^g} v_t^g$
- $R_{j,t} = \phi_{j,1}^r R_{j,t-1} + \dots + \phi_{j,q}^r R_{j,t-q} + e^{h_{j,t}^r} v_{j,t}^r$
- $e_{i,t} = \phi_{i,1} e_{i,t-1} + \dots + \phi_{i,p_i} e_{i,t-p_i} + e^{h_{i,t}} \omega_{i,t}$

Literature review

- Dynamic factor models have been used to study comovements of important macroeconomic variables across countries and the role of global and country-specific factors
 - Stock and Watson (1998), Forni et al (2000)
 - Eickmeier (2009): output and price movements in the Euro area
 - Mumtaz and Surico (2012): inflation dynamics in industrialized countries
 - Del Negro and Otrok (2008): the evolution of international business cycles in the post-Bretton Woods period
 - Boysen-Hogrefe (2014): bond market integration in the Euro area
 - Bhatt, Kishor and Ma (2017): bond yields in the OECD countries and the role of the EMU

Data

- We measure the current account as the current account balance to GDP ratio.
- Annual data from 1970 to 2017 are obtained from World Bank's WDI (World Development Indicators) and supplemented by IMF's International Financial Statistics.
- The sample consists of 20 countries in total: the U.S. and its major trading partners.
- The group of countries accounts for around 80 % of U.S. total trade.

Figure 1

- Figure 1 shows the dynamics of the estimated global and regional factors.
- **Findings:**
- A sustained increase in the role of the **global factor** which is consistent with the fact of a more economically and financially integrated world.
 - This trend, however, retreats somewhat since the Global Financial Crisis (GFC) and the following Euro area crisis.
- The **developing-country factor**, on the other hand, shows a great deal of time variation. The low-impact period of the second half of the 1990s seems to reflect the emerging market crises in Mexico (1994-5), East Asia (1997-8), Russia (1998), and Brazil (1999). The decline in the period of the last 10 years or so seems to be related to the dual crises of the GFC and the Euro area crisis.
- The **developed-country factor** varies a lot as well. A sharp dip in the early 1980s and a gradual increase in the first decade of the 21st century followed by another sharp decline. Both declines seem to be associated with the financial crises: the ERM crisis of 1992-3 and the dual crises mentioned above.

Figure 1 Global and regional factors

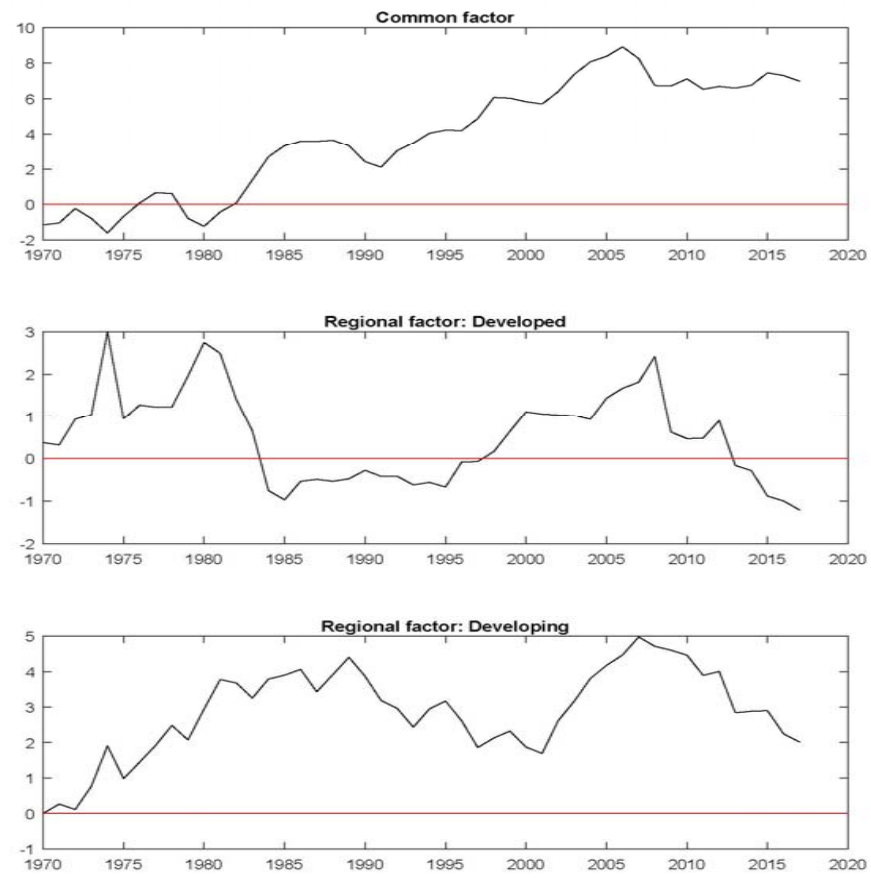


Figure 2

- Figure 2 compares the global and regional factors with corresponding simple averages.
- For example, in the top panel, the dashed line is the weighted mean of all 20 countries' current account to GDP ratio, and the solid line is the estimated global factor.
- The global factor seems most closely related to the corresponding group – in this case, the whole group – as expected.
- On the other hand, the two regional factors tend to move closely with the corresponding group average some times and deviate other times. For instance, the large discrepancy shown in the middle panel suggests that CA development in the developed countries in the past 10 years or so is not driven by the regional factor.

Figure 2 Global and regional factors and simple averages

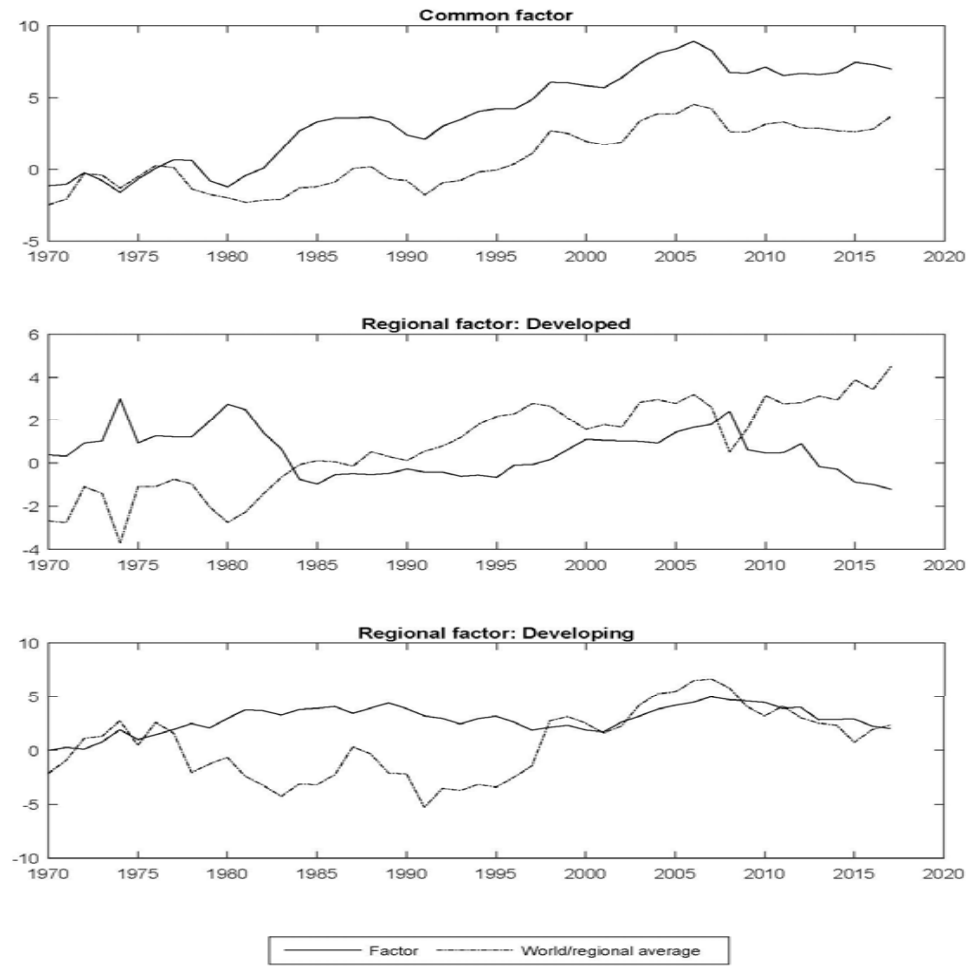


Figure 3

- The contributions of the three factors in each country's current account development for the 12 advanced economies are shown in Figure 3 and for the 8 emerging market economies in Figure 4.
- We focus on the US, China, and other countries that have significant current account balances such as Japan, Germany, Korea, and Singapore.*
- The **U.S. current account** is largely driven by the global factor. The global factor seems to account for 60 – 70 percent of variations in the US current account.
- On the other hand, variations in **China's current account** are mainly driven by country-specific factors (40-60 percent) and regional factors (20-30 percent). The global factors account for merely 10-15 percent of variations.

Figure 3 & 4

- In both countries, the role of the global factors seems declining.
- In the U.S., the decline is small and gradual.
- For China, the predominance of the country-specific factors has sharply diminished in the mid-2000s, which coincided the beginning of managed float of the Chinese yuan. Since then, their influence seems to be growing.
- Among the advanced economies, the global factor is as dominant in Japan, Singapore, and Switzerland as in the U.S.
- In most European countries, however, the global factor seems to play a much less important role compared to the idiosyncratic domestic factor. Its general trend varies across countries, rising in Germany and the U.K. while declining in France.
- In Canada, the global factor play a surprisingly small role.*
- For other countries, Japan and Singapore are more affected by global factors, while Germany is jointly impacted by country-specific and global factors.

Figure 3 Variance contribution of each factor for advanced economies

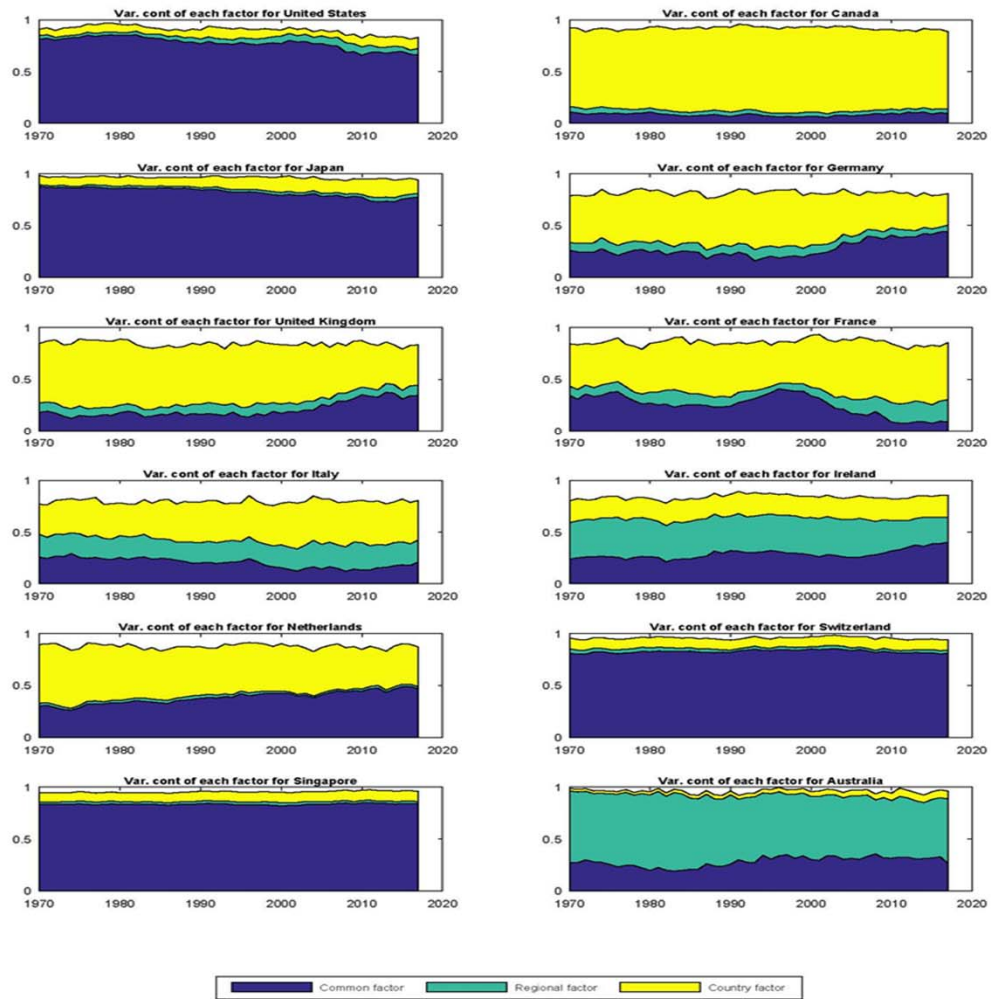


Figure 4 Variance contribution of each factor for developing economies

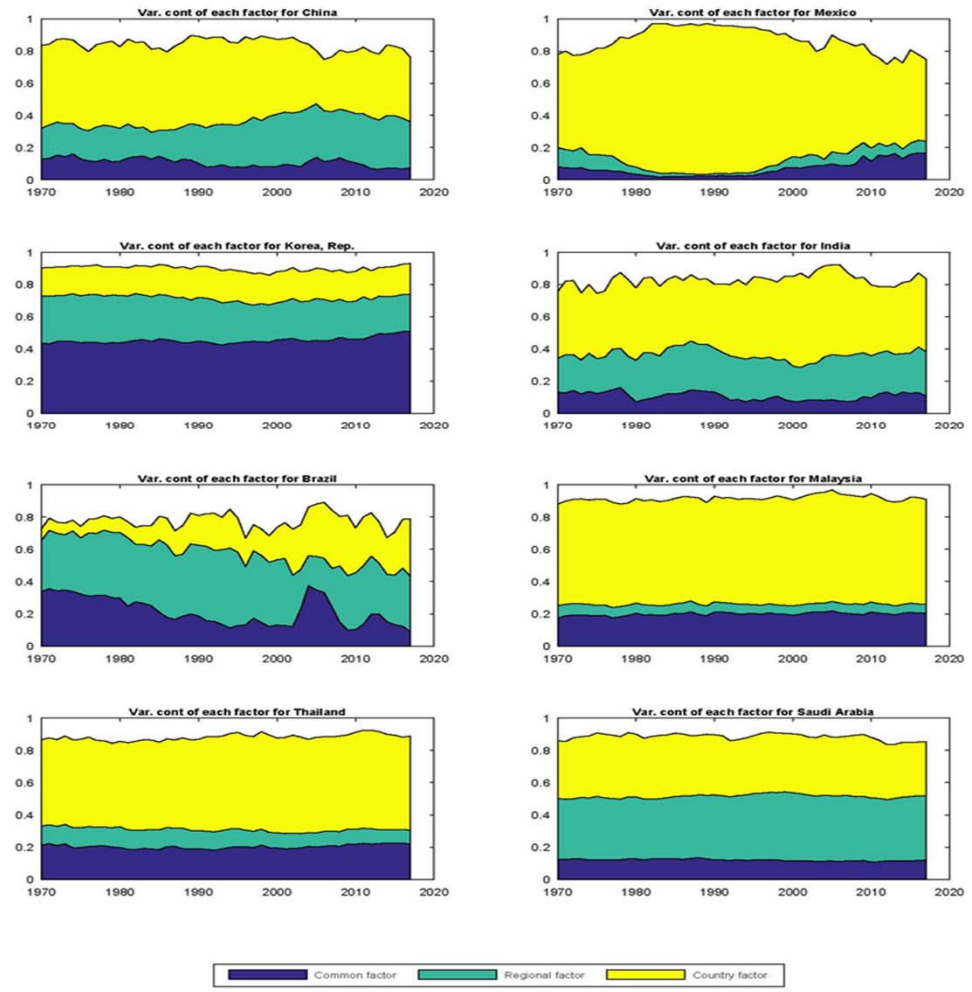


Figure 4

- The group of the developing economies show remarkably different patterns compared to those of the advanced economies shown in Figure 3
- The country-specific factor is dominant in the majority of countries while the global factor play a much smaller role as in China, Mexico, India, Malaysia, and Thailand.
- The regional factor seems to play a more significant role – explaining 30-40 percent of variation in the current account – than in the advanced economies.
 - In Brazil and Saudi Arabia, it is the dominant factor.*
 - In China, Korea, and India, its role is close to half of that of the global factor.

Figure 3 & 4 summary

- Implications on the debates on global imbalances.
- The global factor plays an important role in the evolution of the US current account.
- This suggests that the US current account balances have been strongly affected by external factors, supporting the global saving glut hypothesis of Bernanke (2005).
- In contrast, China's current account is largely explained by its own country-specific factor, suggesting the domestic or internal factors may be more important in China's current account balances.
- Germany can be a case that both external and internal factors are important.
- The global factor is dominant and the regional factor plays a minor role in the majority of the advanced economies. The country-specific factor is dominant in most European economies.
- In the developing countries, the country-specific factor is dominant in most cases. The regional factor is the close second in several countries, overwhelming even the global factor.
- The last two findings may suggest that the global factor incorporates some large portion of factors unique to the advanced economies, thus leading to the underestimation of the regional factor. On the other hand, developing economies seem to have their own characteristics that are not captured in the global factor.*

4.2 The Global and Regional Factors in the regression model of the current account

- In this section, we investigate structural determinants of the three factors where the determinants are selected on the basis of the traditional models of the current account.

Traditional models of the current account

- Chinn and Prasad (2003), Gruber and Kamin (2007), Chinn-Eichengreen-Ito (2014)
1. **Government budget** balance (as ratio to GDP)
 - The twin deficits hypothesis
 2. **Age dependency Young** (= the ratio of number of young people to working age population) and **Age dependency Old** (= the ratio of number of old people to working age population):
 - capture population structure and life-cycle savings dynamics
 3. **Private credit** (= domestic credit to private sector as a ratio of GDP)
 4. **Stock market capitalization** (as ratio to GDP) and
 5. **KA openness**: Chinn-Ito capital account openness
 - 3-5 test the degree of development of the financial sector
 6. **The terms of trade, Trade openness** (= the sum of exports and imports to GDP ratio), and the exchange rate regime (**Peg**).
 - A set of variables from the traditional trade models are also considered.
 7. Other variables: **Relative income; Relative income squared; Growth rate; Net foreign asset** position

More explanatory variables

- Financial crises and the central bank desire for reserve accumulation may lead to current account surpluses.
 - The financial crisis is measured as the total number of banking, currency, domestic and external default or restructuring, and inflation crisis, known as the **Reinhart-Rogoff financial crises**.*
 - **Foreign reserves** are measured as the level of a country's foreign reserves excluding gold (as ratio to GDP).
- To control for volatility and uncertainty in the global goods and financial markets, we use the estimated global and regional factors from previous section.
- In addition, we include financial market sentiment (**Sentiment**) from Baker and Wurgler (2007), volatility of world oil prices (**Oil price volatility**) calculated by standard deviation of WTI spot crude oil price per barrel, and a composite **world crisis index** from Carmen M. Reinhart.
- The sample covers 18 countries from 1971 to 2014.

Tables 1 & 2

- Table 1 reports descriptive statistics of all variables used in the following analysis. No obvious outliers are detected.
- Table 2 reports correlation between the global factor and measures of world commodity markets and financial markets.
- The global factor does not seem to be closely correlated to the development in either market. This suggests that the global factor seems to capture unobserved common factors underlying current account movement.
 - This finding can be contrasted to the conventional interpretation of the global saving glut hypothesis which emphasizes, among other things, the effects of global integration and financial nature of the common shocks on the current accounts. (See Chinn et al 2013.)

Table 1. Data Description

Variable	Obs	Mean	Std. Dev.	Min	Max
Current account (%)	947	0.742813	6.630968	-34.0745	50.70216
Foreign reserves (%)	939	13.76792	20.4814	0.180563	113.0791
Government Budget (%)	810	-1.21323	4.549037	-31.3377	29.802
Age dependency Old (%)	960	15.2853	7.781148	4.240974	45.03247
Age dependency Young (%)	960	40.40284	17.6477	18.55518	93.7917
Private credit (%)	927	79.83942	47.09005	2.750596	221.2885
Stock capitalization (%)	717	71.3285	54.39802	0.462272	333.885
Capital account openness	874	0.677118	0.353228	0	1
Terms of trade	868	78.74201	228.121	-1122.5	2194.589
Net foreign asset (%)	828	0.039557	0.511541	-1.01374	2.556102
Exchange rate regime (peg)	900	0.32	0.466736	0	1
Growth (%)	930	3.860975	3.943001	-23.2309	22.75918
Trade openness (%)	947	75.5272	74.52516	4.920835	441.6038
Relative income (%)	900	58.93989	39.05077	3.157298	384.8279
# Financial crises	779	0.663671	0.913961	0	6
Sentiment	900	-0.031555	0.826475	-1.94	1.81
Oil price volatility	960	3.961503	5.037906	0	29.07427
World crisis index	820	42.15916	23.1697	0.68	129.51

Table 2. Correlation between the global factor and world commodity and financial market

	Global factor	Sentiment	Oil price volatility	World crisis index
Global factor	1			
Sentiment	0.1341	1		
Oil price volatility	0.4808	0.0656	1	
World crisis index	0.0046	0.1945	0.3594	1

Table 3. Regression (1)-(3)

- Table 3 reports main regression results from the panel fixed-effect models.
- Regressions (1)-(3) use the current account as the dependent variable.
- Regression (1) is a traditional setup with a full set of determinants of current account, which is comparable to previous studies in the literature.
- Regression (2) adds the global factor of current account to control for common factors/shocks.
 - This treatment is supported by the Pesaran (2015) test for **weak cross-sectional dependence** (CD test).
 - In regression (1) of the traditional model, the CD test strongly rejects the null of no weak cross-section dependence with a P-value of 0.002.
 - This result suggests the traditional models violate the basic assumption of the OLS regression that residuals are independently distributed.
 - After adding the global factor of current account in regression (2), the CD test no longer rejects the null hypothesis with a P-value of 0.445.
- Regression (3) adds the regional factors in addition to the global factor. Both regional factors seem statistically insignificant.

Table 3

- Some important findings from Table 3 can be summarized as follows.
- **Government budget balance** is not significantly correlated to the current account, rejecting the twin deficits hypothesis. (See Chinn et al (2014) for contrasting results.)
- **Demographic structure** (Age dependency) employed as a key determinant of national savings show significantly negative effects on the current account in most cases.
- **Financial development** (credit to private sector, stock market capitalization) has a significantly negative effect on the current account, which is consistent with the hypothesis that countries with more developed financial markets should have weaker current accounts due to the “flight-to-quality” effect.

Table 3

- The exchange rate system (**Peg**) seems to play an important role on the current account.
 - Countries with less flexible exchange rate regimes seem to run a lower current account balance.
- The capital account openness (**KA openness**) has the negative effects on the current account.
- The **relative income** and its squared term are intended to capture the hypothesis that the current account balance would exhibit a U-shape pattern over development stages. However, our results do not support the hypothesis. The squared term is insignificant. Instead, there is a significant positive linear relation between relative income and the current account.
- This positive relation is also supported by the negative effects of growth rate and the positive effects of net foreign asset on the current account.

Table 3. Regression (4)-(6)

- There seems to exist a tremendous heterogeneity across countries in the explanatory power of the three structural factors.
- **Regression (4)-(6)** employ the loadings of the three factors as the dependent variable: (4) those for the global factor, (5) those for the regional factor, and (6) those for the country-specific factor.
 - Regressions (4) and (5) together can shed light on the external factors of the current account balance. Regression (6) reveals the determinants of the internal or domestic component of the current account.
- For the **loadings of the global factor**, the traditional factors such as Age dependency, Trade Openness, Relative income, Relative income squared exert expected effects on the current account. In addition, the financial market variables such as Sentiment, Private credit, and KA openness show up as significant determinants.
- For the **regional factor loadings**, in addition to the above variables, Oil price volatility, Sentiment, Peg (the exchange rate regime), and Net foreign assets show up as significant determinants.
- In the case of the **country-specific factor loadings**, Foreign reserves and Financial crises – the variables that are supposed to capture financial crises – stand out significantly.

- Some variables such as Age dependency and Peg affect all three factors in the same direction.
- On the other hand, some variables, affect them in different directions or with varying degrees of statistical significance.
- For instance, the impact of financial development on the current account is largely through the global and regional components of the current account while KA openness affects mainly the global factor.
- The exchange rate system works through the country-specific and regional factors.
- Financial crises and foreign reserves affect mainly the country-specific factors.

Table 3.
Determinants
of current
account and
its
components

VARIABLES	(1) Current account	(2) Current account	(3) Current account	(4) Global factor loadings	(5) Regional factor loadings	(6) Country specific factor
Global factor		0.999*** (0.107)	0.998*** (0.110)			
Regional factor			-0.003 (0.165)			
Foreign reserves	0.176*** (0.032)	0.206*** (0.030)	0.206*** (0.030)	0.000 (0.000)	0.000 (0.000)	0.160*** (0.025)
Financial crises (1 lag)	0.353* (0.201)	0.332* (0.185)	0.332* (0.185)	-0.002 (0.003)	-0.001 (0.003)	0.274* (0.156)
Financial crises (2 lags)	0.413** (0.190)	0.338* (0.175)	0.338* (0.175)	0.002 (0.003)	-0.001 (0.002)	0.300** (0.147)
Oil price volatility	-0.043 (0.031)	-0.072** (0.029)	-0.072** (0.034)	0.000 (0.000)	-0.001*** (0.000)	0.006 (0.024)
World crisis index	-0.001 (0.006)	0.017*** (0.006)	0.017** (0.006)	0.000 (0.000)	0.000** (0.000)	-0.001 (0.005)
Sentiment	-0.148 (0.176)	-0.022 (0.162)	-0.021 (0.162)	-0.005** (0.002)	-0.004* (0.002)	-0.032 (0.136)
Government Budget	-0.031 (0.052)	0.010 (0.048)	0.010 (0.048)	-0.001* (0.001)	0.000 (0.001)	0.039 (0.040)
Age dependency Old	-0.028 (0.068)	-0.250*** (0.067)	-0.249*** (0.067)	-0.005*** (0.001)	0.003*** (0.001)	-0.102* (0.052)
Age dependency Young	-0.077** (0.030)	0.097*** (0.033)	0.097*** (0.033)	0.001** (0.000)	-0.001*** (0.000)	-0.005 (0.023)
Private credit	-0.021*** (0.008)	-0.053*** (0.008)	-0.053*** (0.008)	-0.000* (0.000)	0.000** (0.000)	-0.009 (0.006)
Stock capitalization	0.001 (0.006)	-0.018*** (0.006)	-0.018*** (0.006)	0.000 (0.000)	-0.000** (0.000)	0.000 (0.005)
Peg	-0.839* (0.449)	-0.736* (0.412)	-0.737* (0.414)	-0.002 (0.006)	-0.013** (0.006)	-0.772** (0.348)
KA openness	0.998 (0.932)	0.704 (0.856)	0.700 (0.886)	-0.036*** (0.013)	-0.010 (0.012)	0.395 (0.722)
Terms of trade	-0.001* (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.001)
Net foreign asset	4.596*** (0.746)	3.147*** (0.702)	3.146*** (0.704)	0.002 (0.010)	-0.049*** (0.009)	0.697 (0.578)
Growth	-0.109* (0.060)	-0.143*** (0.055)	-0.143*** (0.055)	-0.001 (0.001)	0.002** (0.001)	-0.099** (0.046)
Trade openness	0.001 (0.012)	0.001 (0.011)	0.001 (0.011)	0.001*** (0.000)	-0.000 (0.000)	0.014 (0.009)
Relative income	0.081 (0.055)	0.148*** (0.051)	0.148*** (0.051)	0.002*** (0.001)	0.003*** (0.001)	-0.038 (0.042)
Relative income2	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000** (0.000)	-0.000*** (0.000)	0.000 (0.000)
Constant	-0.745 (2.755)	-7.520*** (2.632)	-7.520*** (2.635)	0.363*** (0.037)	-0.311*** (0.034)	1.370 (2.135)
CD test P-value	0.002	0.445				
Observations	500	500	500	500	500	500
R-squared	0.524	0.599	0.599	0.224	0.258	0.264
Number of countries	18	18	18	18	18	18

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Age dependency Young	-0.077** (0.030)	0.097*** (0.033)	0.097*** (0.033)	0.001** (0.000)	-0.001*** (0.000)	-0.005 (0.023)
Private credit	-0.021*** (0.008)	-0.053*** (0.008)	-0.053*** (0.008)	-0.000* (0.000)	0.000** (0.000)	-0.009 (0.006)
Stock capitalization	0.001 (0.006)	-0.018*** (0.006)	-0.018*** (0.006)	0.000 (0.000)	-0.000** (0.000)	0.000 (0.005)

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Peg	-0.839*	-0.736*	-0.737*	-0.002	-0.013**	-0.772**
	(0.449)	(0.412)	(0.414)	(0.006)	(0.006)	(0.348)
KA openness	0.998	0.704	0.700	-0.036***	-0.010	0.395
	(0.932)	(0.856)	(0.886)	(0.013)	(0.012)	(0.722)
Terms of trade	-0.001*	-0.000	-0.000	-0.000	-0.000	-0.001
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)
Net foreign asset	4.596***	3.147***	3.146***	0.002	-0.049***	0.697
	(0.746)	(0.702)	(0.704)	(0.010)	(0.009)	(0.578)
Growth	-0.109*	-0.143***	-0.143***	-0.001	0.002**	-0.099**
	(0.060)	(0.055)	(0.055)	(0.001)	(0.001)	(0.046)
Trade openness	0.001	0.001	0.001	0.001***	-0.000	0.014
	(0.012)	(0.011)	(0.011)	(0.000)	(0.000)	(0.009)
Relative income	0.081	0.148***	0.148***	0.002***	0.003***	-0.038
	(0.055)	(0.051)	(0.051)	(0.001)	(0.001)	(0.042)
Relative income2	-0.000	-0.000	-0.000	-0.000**	-0.000***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	-0.745	-7.520***	-7.520***	0.363***	-0.311***	1.370
	(2.755)	(2.632)	(2.635)	(0.037)	(0.034)	(2.135)
CD test P-value	0.002	0.445				
Observations	500	500	500	500	500	500
R-squared	0.524	0.599	0.599	0.224	0.258	0.264
Number of countries	18	18	18	18	18	18

Table 4

- Two policy related variables – government budget balances and foreign reserves – may cause the problem of **endogeneity** due to reverse causality which yields biased and inconsistent coefficient estimates.
 - It is conceivable that the government tries actively to accumulate foreign reserves as well as to implement government budget policy with an implicit or explicit target to improve the current account balance.
- In Table 4, we address this issue using instrumental variables. Government budget balance and foreign reserves are instrumented by their lag 1 and lag 2 values. Model specifications are identical to Table 3.
- Tests to examine the validity of the instruments:
 - The Cragg-Donald Wald F statistic is for **weak identification test**. The test statistics for all regressions are far greater than the critical value at all levels suggested by Stock and Yogo (2005), strongly rejecting the null hypothesis of weak instruments.
 - The Sargan test is a test of **overidentifying restrictions**. The P-values of the test in all regressions are far greater than 0.1, which suggest that the instruments are valid instruments.
 - We conclude that the adopted instruments are valid instruments ready for use.

Table 4.
Instrumental
variables
estimation of
the current
account
balance

VARIABLES	(1) Current account	(2) Current account	(3) Current account	(4) Global factor loadings	(5) Regional factor loadings	(6) Country specific factor
Government Budget	-0.059 (0.066)	0.015 (0.062)	0.020 (0.063)	-0.001 (0.001)	0.000 (0.001)	0.028 (0.050)
Foreign reserves	0.100** (0.040)	0.170*** (0.038)	0.169*** (0.038)	0.000 (0.001)	0.000 (0.001)	0.119*** (0.030)
Global factor		0.889*** (0.107)	0.873*** (0.110)			
Regional factor			-0.114 (0.162)			
Financial crises (1 lag)	0.305 (0.190)	0.304* (0.177)	0.298* (0.177)	-0.002 (0.003)	-0.001 (0.002)	0.234 (0.144)
Financial crises (2 lags)	0.445** (0.182)	0.387** (0.170)	0.386** (0.170)	0.002 (0.003)	-0.000 (0.002)	0.335** (0.138)
Oil price volatility	-0.042 (0.029)	-0.072*** (0.028)	-0.060* (0.033)	0.000 (0.000)	-0.001*** (0.000)	0.004 (0.022)
World crisis index	-0.003 (0.006)	0.014** (0.006)	0.012** (0.006)	0.000 (0.000)	0.000** (0.000)	-0.003 (0.004)
Sentiment	-0.162 (0.167)	-0.036 (0.156)	-0.031 (0.156)	-0.005** (0.002)	-0.004* (0.002)	-0.024 (0.126)
Age dependency Old	-0.013 (0.064)	-0.216*** (0.064)	-0.208*** (0.065)	-0.005*** (0.001)	0.003*** (0.001)	-0.095** (0.048)
Age dependency Young	-0.078*** (0.029)	0.085** (0.033)	0.085** (0.033)	0.001** (0.000)	-0.001*** (0.000)	0.004 (0.022)
Private credit	-0.023*** (0.007)	-0.050*** (0.007)	-0.050*** (0.007)	-0.000** (0.000)	0.000*** (0.000)	-0.011** (0.005)
Stock capitalization	0.011 (0.007)	-0.011 (0.007)	-0.010 (0.007)	0.000 (0.000)	-0.000 (0.000)	0.008* (0.005)
Peg	-1.492*** (0.433)	-1.192*** (0.405)	-1.219*** (0.407)	-0.004 (0.006)	-0.015*** (0.006)	-1.325*** (0.328)
KA openness	1.317 (0.880)	0.963 (0.821)	0.807 (0.850)	-0.036*** (0.012)	-0.008 (0.011)	0.730 (0.665)
Terms of trade	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.001)
Net foreign asset	5.136*** (0.769)	3.452*** (0.742)	3.427*** (0.742)	0.003 (0.011)	-0.051*** (0.010)	0.855 (0.581)
Growth	-0.114** (0.057)	-0.143*** (0.053)	-0.146*** (0.053)	-0.001 (0.001)	0.002** (0.001)	-0.103** (0.043)
Trade openness	-0.005 (0.011)	-0.002 (0.010)	-0.001 (0.011)	0.001*** (0.000)	-0.000 (0.000)	0.008 (0.008)
Relative income	0.122** (0.053)	0.156*** (0.050)	0.160*** (0.050)	0.002*** (0.001)	0.003*** (0.001)	-0.014 (0.040)
Relative income2	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000*** (0.000)	-0.000*** (0.000)	-0.000 (0.000)
Observations	496	496	496	496	496	496
R-squared	0.528	0.590	0.590	0.224	0.264	0.257
Number of countries	18	18	18	18	18	18
Cragg-Donald F statistic	121.7	116.4	115.3	121.7	121.7	121.7
Sargan statistic P-value	0.708	0.363	0.330	0.769	0.489	0.276

Concluding remarks

- Using a time-varying stochastic volatility dynamic factor model, this paper confirms the important role of the global factors as a key determinant of the current account balances in most countries.
- The current account is dominated by the global factor whose influence has been growing in the past 3-4 decades. However, their roles are not uniformly important in all countries.
 - For instance, the **U.S. current account** is largely driven by the global factor. The global factor seems to account for 60 – 70 percent of variations in the US current account.
 - On the other hand, variations in **China's current account** are largely driven by country-specific factors (40-60 percent) and regional factors (20-30 percent). The global factors account for merely 10-15 percent of variations.
- The global factor is dominant and the regional factor plays a minor role in the majority of the advanced economies. The country-specific factor is dominant in most European economies.
- In the emerging market countries, the country-specific factor is dominant in most cases. The regional factor is the close second in several countries, overwhelming even the global factor.

- Based on the results from our dynamic factor model, we further analyze the relative importance of different determinants of the current account on different components (global, regional, and country-specific) of the current account.
- Some highlights are as follows.
- Financial development affects the current account mainly through the external (global and regional) components of the current account. Government budget balances do not affect the current account.
- We find that both domestic financial crisis and world financial crisis strongly affect the current account. Previous own experiences of financial crisis affect the internal (country-specific) component of a country's current account, whereas world financial crisis or world financial market uncertainty will affect the external (global and regional) component of a country's current account. In contrast, foreign reserves affect the current account largely through the country-specific of the current account.

Implications

- If the current account imbalances are induced by the global or regional factors, as in the case for the US and other advanced economies, international coordination would be warranted.
 - Fiscal expansion in the surplus countries and/or fiscal contraction in the deficit countries
 - Real appreciation in the surplus countries and/or real depreciation in the deficit countries
- Promoting financial development in emerging market economies where financial market imperfections remain in the midst of the rapid process of financial globalization
- Reforming the international monetary system in which non-reserve currency countries do not have to amass huge amounts of international reserves for financial security from the potential sudden stops of large foreign capital flows

Implications

- If the current account imbalances are induced by primarily country-specific factors, as in the case of China and other emerging market economies, each country's own efforts are called for.
 - Measures to reduce national saving in the surplus countries and measures to increase national saving in the deficit countries
 - Measures to increase investment in the surplus countries and measures to decrease investment in the deficit countries

Dealing with saving surplus in China and Emerging Asia

- Causes of surges in saving
 - Rapid GDP growth
 - Increased uncertainty in the wake of 1997 Asian crisis (precautionary saving)
 - Demographic factors – aging population
 - China's unique saving behavior:
 - Culture
 - Underdeveloped social welfare systems
 - Growing corporate savings
 - Migration of manufacturing factories to China
 - Trade surpluses with the US & Europe: final goods
 - Trade deficits with other Asian countries: intermediate goods
 - Undervalued currency?

Dealing with saving surplus in China and Emerging Asia

- Causes of weak investment
 - (with the notable exceptions of China, India, and Viet Nam)
 - Lingering effects of the financial crisis, post-crisis reform and restructuring
 - Heightened regional risk in the aftermath of the crisis
 - Competitive pressure from China

End of presentation

Thank you