

# The Policy and Structural Determinants of Emerging Market Sensitivity to Core Economy Conditions

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## Abstract

This paper investigates the questions of why and how financial conditions of developing and emerging market countries can be affected by the movements in the major economies, namely, the U.S., Japan, the Euro area, and China. To investigate this question, we take a two-stage approach. We first estimate the extent of sensitivity to several important financial variables of the major economies, such as policy interest rate, sovereignty bond spread, changes in stock market prices, and the nominal effective exchange rates while controlling for global and domestic factors. With the estimated measure of the extent of sensitivity, we examine its determinants by testing a number of variables for country-specific macroeconomic conditions or policies, real or financial linkages with the major economies, and the levels of institutional development. We find that, for most of the financial variables we examine, the link with the major economies has been dominant for developing and emerging market economies in the last two decades or so. At the same time, the movements of policy interest rate and sovereignty spread have been more sensitive to those of the major economies since the time of the Global Financial Crisis of 2008. Our estimation results suggest that, across different financial linkages, overall, higher levels of direct trade linkage and financial development, greater import demand by the major economies, and higher levels of gross national debt tend to lead to closer linkages of the financial conditions between the sample countries and the three center economies. Open macro policy arrangements are found to have indirect, not direct, effects on the extent of sensitivity.

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## 1. Introduction

The increasingly integrated nature of the financial system was amply demonstrated by the events of mid-2013 when Fed Chairman Bernanke's statements regarding the normalization of U.S. monetary policy sparked turmoil in emerging market currency and bond markets. Following on the heels of complaints about unconventional monetary policy implementation in the preceding years, it is clear that – at a minimum – policymakers in emerging market economies perceive an increasing vulnerability to the whims of the global financial system.

The idea that the monetary policies of financial center countries could have large spillover effects on the smaller economies is not new. During the mid-1990's, when advanced economy central bankers raised policy rates, after several years of negative real interest rates, similar complaints were lodged, and it is not unreasonable to at least partly trace the financial crises in Latin America and subsequently in East Asia to the cycle in core country policy interest rates.

One key difference is that in the earlier episode's aftermath, the semi-fixed exchange rate regimes were tagged as a contributing factor. In contrast, countries adhering to a variety of exchange rate regimes all experienced challenges in insulating their economies in the most recent episode. This has led to a revisionist interpretation that suggests that the international trilemma is no longer relevant; rather the trilemma has been reduced to a dilemma between open financial markets and monetary independence.

An emphatic expression of the view that the countries in the periphery are all sensitive to a "global financial cycle" in capital flows, asset prices and credit growth, irrespective of exchange rate regimes, has been forwarded by Helene Rey (2013). For instance, witness the experience of Brazil, India, Indonesia, South Africa, and Turkey – the "Fragile Five" – during the so called taper tantrum. These economies were hard hit, although others also experienced large effects.

Figure 1 illustrates the 36-month rolling correlations of domestic money market rates with the U.S. money market rate for different country groups, namely the groups of developed countries (IDC), developing countries (LDC), and emerging market economies (EMG), and China between 1990 and 2013. The figure shows that the correlation between domestic and the U.S. policy interest rates tends to be high for developed countries and hovers at relatively high levels in the last decade. The correlation also fluctuates, but experiences two dips in recent years,

one in 2005 and the other at the time of the global financial crisis. The two dips in the correlations correspond to the time when the U.S. Federal Reserve changed its policy rate rapidly.<sup>4</sup> This figure suggests that developing countries on average tend to retain high monetary independence from the U.S. whereas the monetary policy of developed countries appear more subject to that of the U.S.

Figure 2 is recreated for long-term interest rates. In the figure, again, the long-term interest rates of industrialized countries register high correlations with that of the U.S. rates especially in the first half of the sample period, though the correlation has been on a rising trend again for this group of countries. Developing countries experience relatively high correlations in the early 2000s but since the late 2000s, the correlations appear to be trendless for these countries. According to this figure, it appears that long-term interest rates across countries, including both developed and developing countries tended to be highly correlated during the Great Moderation period.

Figure 3 presents an interesting picture. It illustrates the time-varying correlations of stock market price indexes with the U.S. index. Since the mid-2000s till recently, all the country groups had maintained high levels of correlations of stock market price indexes with the U.S. stock market, though the correlations declined since the global financial crisis.

What do these figures tell us? Broadly speaking, the extent of correlations is the highest for stock market price movements, followed by the long-term and short-term interest rates. If we consider that short-term interest rates bear lowest levels of risks, we may be able to generalize that the prices of assets with higher risk tends to be more highly correlated with that of the center economy, the United States. Of course, these figures are not sufficient for us to make such a generalization. Furthermore, a number of factors can affect the connectivity of asset prices including the policy regimes of the economies of concern, macroeconomic conditions, the extent of trade linkage, the development level and size of financial markets, the types of assets themselves, and global market and economic conditions.

Many studies such as Ahmed and Zlate (2013), Forbes and Warnock (2010), Fratzscher (2011), and Ghosh, et al. (2012) have documented the importance of global factors such as advanced economy interest rates and global risk appetite in affecting capital flows to small open

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<sup>4</sup> The Federal Reserve started raising the federal fund rate target from 1.00% in June 2004 to 5.25% in June 2006. It started lowering the target from 5.25% in September 2007 all the way essentially to the 0.00-0.25 by December 2008.

economies. Nonetheless, these studies have also pointed out that domestic, country-specific factors also retain some importance. In particular, the institutional and macroeconomic policy frameworks of the emerging market economies also determine the variations in flows.

Given this context, we focus on the questions of why movements in the major advanced economies often have large effects on other financial markets, how these cross-market linkages have changed over time, and what kind of factors contribute to explaining the sensitivity to the movements in the big advanced economies. More particularly, we will conduct an empirical analysis on what determines the sensitivity of economies to factors pertaining to the core economies in the world, namely, the U.S., the Euro area, Japan, and China.

For the last two decades, the Chinese economy has been growing at impressive rates and moving upward fast on the development ladder. However, its financial markets may not be developed or sophisticated to the extent of becoming the center of global financial cycles. Despite data limitations of the country as well as the relatively short history of China being one of the G3 countries, we will examine whether and to what extent our sample countries are sensitive to the center economies that include.

For our empirical exploration, we employ an estimation process akin to Forbes and Chinn (2004), which is composed of two stages of estimations. First, we investigate the extent of sensitivity of several important financial factors to global, cross-country, and domestic factors. With this estimation, we will measure the extent of sensitivity to changes in financial conditions of the center economies. Second, using the measure of sensitivity, we will examine its determinants among a number of country-specific variables. In so doing, we will unravel whether the sensitivity is driven by countries' macroeconomic conditions or policies, real or financial linkage with the center economy, or the level of institutional development of the countries.

In Section 2, we will spell out the framework of the two stage estimation exercise. We will report and discuss the estimation results in section 3. In Section 4, we will make concluding remarks.

To anticipate the results, we find that for most of the financial variables we examine, the strength of the links with the center economies have been dominant over the last decade or so. The influence of global financial factors, for which we use VIX and Ted spread, has been increasing since around the time of the global financial crisis. The results we obtain suggest that,

across different financial linkages, higher levels of direct trade linkage and financial development, greater import demand by the center economies, and higher levels of gross national debt tend to lead to stronger financial linkages between the sample countries and the three center economies. Open macro policy arrangements such as exchange rate regimes and financial openness can affect the extent of financial linkage but often interactively through other explanatory variables.

## 2. The Methods for the Two Stages Estimation Exercise

### 2.1 The First-Stage Estimation

As a first step, we identify the extent of sensitivity of several important financial factors to global, cross-country, and domestic factors for each of our sample countries, using the estimation model shown below:

$$R_{it}^F = \alpha_{Fi} + \sum_{g=1}^G \beta_{Fi}^G Z_i^G + \sum_{c=1}^C \gamma_{Fi}^C X_i^C + \phi_{Fi} Y_{it} + \varepsilon_{it}. \quad (1)$$

While the  $Z_i^G$  is a vector of global factors, the  $X_i^C$  is a vector of cross-country factors, and  $Y_{it}$  is a control variable for domestic factors.  $C$  represents the center economies: the U.S., the Euro area, Japan, and China.  $\hat{\gamma}_{it}^C$  is the estimate of our focus and represents the extent of sensitivity of a financial variable ( $R_{it}^F$ ) to cross-country factors, or more specifically, linkages to the four major economies.

As for the financial variable as the dependent variable, we are interested in 1) policy short-term interest rate; 2) stock market price changes; 3) sovereign bond spread; and 4) the rate of change in the nominal effective exchange rate (NEER). We use money market rates to represent policy short-term interest rate. For stock market prices, we use stock market price indices reported in the IMF's *International Financial Statistics (IFS)*. Sovereign bond spread is the difference between the long-term interest rate (usually 10 year government bond) and the U.S. three-month treasury yields. We use the nominal effective exchange rate indices from the IFS.

For a vector of global factors ( $Z_t^C$ ), we have two subsets of global factors. The first global factors are “real global factors,” which include global interest rates (for which we will use the first principal component of U.S. FRB, ECB, and Bank of Japan’s interest rates); oil prices; gold prices; and commodity prices. To avoid multicollinearity or redundancy, we also calculate the first principal component of oil and commodity prices and use the resultant variable as a control variable for input or commodity prices. Also, when we estimate for the policy interest rate correlation, we do not include the first component of U.S. FRB, ECB, and Bank of Japan’s interest rates as part of the global factor vector because it would overlap with  $X^C$ .

The second subset is “financial global factors.” In this group, we include the VIX index from the Chicago Board Options Exchange (CBOE), which measures the implied volatility of S&P 500 index options.<sup>5</sup> The index is a proxy for the extent of investors’ risk aversion.<sup>6</sup> As another financial global factor, we include the “Ted spread,” which is the difference between the 3-month Eurodollar Deposit Rate in London and the 3-month U.S. Treasury Bill yield. This measure gauges the general level of stress in the money market for financial institutions. With the assumption that the 3-month U.S. Treasury Bill is risk-free, when financial institutions experience a hard time in accessing liquidity in the international financial markets, the spread tends to rise. The same set of global factors is used for all the estimations with different dependent variables.

The vector of cross-country linkage factors ( $X^C$ ) corresponds to the dependent variable. For example, if the short-term interest rate for country  $i$  is the dependent variable,  $X_i^C$  includes the short-term interest rates of the four major economies. We implement the estimation for each of the sample countries for the four different dependent variables and for a time period ( $p$ ) that can be either three or five-year period.

While the financial variables we test as the dependent variables can be affected by global factors or the conditions of the major economies, they can be influenced by the home countries’ domestic economic conditions. If their factors are significant, but if they are not properly controlled, the estimates on the global or cross-country, linkage variables can be spurious. Hence,

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<sup>5</sup> The VIX index series starts in 1990, but we use the VXO index, an older version of the VIX index, to extrapolate the VIX index to 1986. The correlation between the two indices is about 99%.

<sup>6</sup> A higher VIX index indicates a higher level of risk appetite.

we include the year-on-year growth rate of industrial production index to control for the domestic economic conditions.

The main objective of this first stage estimation is to estimate the correlation of a specific financial variable between country  $i$  and each of the center economies while controlling for global and domestic factors. Again, the estimated coefficient of our focus is  $\hat{\gamma}_{Fi}^C$ . A significantly positive  $\hat{\gamma}_{Fi}^C$  indicates a closer linkage between country  $i$  and economic center country  $C$ .

All the data used for this estimation exercise are monthly frequency. The same set of explanatory variables (except for the world interest rate) is regressed against the four financial variables: policy interest rate, stock market price changes, the rate of change in the nominal effective exchange rate index, and sovereignty bond spread.

We also conduct tests for two estimation models. One model does not include China as one of the “center economies.” In this model setup, we are testing the sensitivity of our sample economies to rather traditional major economies of the U.S., the Euro area, and Japan. Excluding China relaxes data limitations as well, especially for the second-stage estimation. The other model is the one that does include China as one of the center economies. Including China changes the sample periods when the dependent variable is stock market price index changes due to data limitations. Also, the set of explanatory variables changes in the second-stage estimation, which we will explain later.

Because we deal with a relatively long sample period and we can easily suspect instability in the estimated coefficients. Hence, we run the estimation for three and five year panels starting in 1986 in the case of three-year panels and 1985 in the case of five year panels.<sup>7</sup> For the rest of the paper, we focus on the results from the estimations on the three-year panels since the results from five-year panels are qualitatively similar.

We apply this estimation to a group of about 100 countries including both advanced economies (IDC) and less developed countries (LDC), though the number of countries included in the four models differs depending on data availability. In our sample, the U.S. and Japan are not included for the model that excludes China as a major economy. China is excluded for the model in which China is one of the major economies. As for the Euro member countries, they are

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<sup>7</sup> In the case of five year intervals, the first panel is composed of three years: 1985-1987, and after that, five-year periods are constituted: 1988-1992, 1993-1997, 1998-2002, 2003-2007, and 2008-2012. For the model that includes China as one of the major economies, the three-year panels start in 1994 and the five-year panels start in 1993.

removed after the introduction of the euro in January 1999 or when they become member countries, whichever comes first. We also have a subsample of emerging market countries (EMG) within the LDC subsample.<sup>8</sup>

## 2.2 The Second Stage Estimation

Once we estimate  $\gamma_{Fi}^C$  for each of the four dependent variables for the whole sample (FULL) as well as the subsamples of IDC, LDC, and EMG, we will regress the estimate  $\gamma_{Fi}^C$  on a number of country-specific variables.

$$\hat{\gamma}_{Fit}^C = \theta_0 + \theta_1 OMP_{Fit} + \theta_2 MC_{Fit} + \theta_3 LINK_{Fit} + \theta_4 INST_{Fit} + \theta_5 CRISIS_{Fit} + u_{Fit} \quad (2)$$

We have four groups of explanatory variables. The first group of explanatory variables is a set of open macroeconomic policy choices ( $OMP_i$ ), for which we include the indexes for exchange rate stability ( $ERS$ ) and financial openness ( $KAOPEN$ ) from the trilemma indexes by Aizenman, et al. (2013).<sup>9</sup> A country that has a fixed exchange rate arrangement with a major country, or the base country, is more subject to financial shocks occurring to the base country if it has more open financial markets. Saxena (2008) found the extent of pass-through from foreign interest rates to domestic interest rates is higher under *floating* exchange rate regimes than pegging regimes.<sup>10</sup> Christiansen and Pigott (1997) also suggest that even under floating exchange rate regimes, foreign factors play an important role in affecting long-term interest rates. Hence, it is an empirical question how and to what extent both financial openness and exchange rate stability matter for transmitting financial shocks. As another variable potentially closely related to the trilemma framework, we suspect the level of international reserves (IR) holding may affect

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<sup>8</sup> The emerging market countries (EMG) are defined as the countries classified as either emerging or frontier during the period of 1980-1997 by the International Financial Corporation plus Hong Kong and Singapore.

<sup>9</sup> As Mundell (1963) argued and Aizenman, et al. (2013) have empirically shown it holds, a country may simultaneously choose any two, but not all, of the three goals of monetary policy independence, exchange rate stability, and financial market openness to the full extent. Given this linearity, all of the three trilemma indexes should not be included in the estimation at once.

<sup>10</sup> To explain the counterintuitive results, Saxena argues that the classification of exchange rate regimes may allow some of the countries that conduct active but incomplete foreign exchange interventions to be classified as “floating” regimes so that the results for the floating regimes may include those of de facto pegging regimes. Also, she argues countries with floating exchange rates tend to have more developed financial markets which tend to follow the trend of the center country’s financial markets.

the extent of cross-country financial linkages and include a variable for IR holding (excluding gold) as a share of GDP. Aizenman, et al. (2010, 2011) show the macroeconomic impact of trilemma policy configurations can depend upon the level of IR holding.

The group  $MC_i$  includes macroeconomic conditions such as inflation volatility, current account balance, and public finance conditions. As the measure of public finance conditions, we include either of gross national debt and general budget balance, both as shares of GDP, in the estimation. These variables have been test as factors affecting the direction and volumes of capital flows. These variables are included as deviations from the major economies. We use the data from the IMF's *International Financial Statistics* and *World Economic Outlook* Database.

In addition to these groups of variables, we will include variables that reflect the extent of linkages with the center countries (*LINK*). One linkage variable is meant to capture real, trade linkage, which we will measure as:  $TR\_LINK_{ip} = IMP_{ip}^C / GDP_{ip}$ , where  $IMP_{ip}^C$  is total imports into center economy  $C$  from country  $i$ , that is normalized by country  $i$ 's GDP.<sup>11</sup> Another linkage variable is financial linkage,  $FIN\_LINK_{ip}$ . For one, we will measure it with the ratio of the total stock of bank lending from country  $C$  in country  $i$  as a share of country  $i$ 's GDP ( $BL_i^C$ ) for which we use the BIS consolidated banking statistics data. As another variable of financial linkage, we also use the ratio of the total stock of foreign investment from country  $C$  in country  $i$  as a share of country  $i$ 's GDP ( $FDINV_i^C$ ).<sup>12</sup> These financial link variables are, however, unavailable for China. Therefore, the model that includes China as one of the major economies does not include these two variables for the estimations.

Another variable that also reflects the linkage with the major economies is the variable for the extent of trade competition (*Trade\_Comp*). *Trade\_Comp* measure the importance to country  $i$  of export competition in the third markets between country  $i$  and major country  $c$ . Shocks to country  $c$ , and especially shocks to country  $c$  that affect country  $c$ 's exchange rate, could affect the relative price of country  $c$ 's exports and therefore affect country  $i$  through trade competition in third markets.

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<sup>11</sup> We use the data from the IMF *Direction of Trade* database.

<sup>12</sup> We use the *OECD International Direct Investment* database. Due to possible nonstationarity of the data series, we include the first-difference of the FDI data series.

$$Trade\_Comp_i^c = \frac{100}{Max(Trade\_Comp)} \sum_k \left[ \frac{Exp_{W,k}^c * Exp_{W,k}^i}{Exp_{W,k}^w * GDP_i} \right]$$

$Exp_{W,k}^c$  is exports from large-country  $c$  to every other country in the world ( $W$ ) in industrial sector  $k$  whereas  $Exp_{W,k}^w$  is exports from every country in the world to every other country in the world (i.e. total global exports) in industrial sector  $k$ .  $Exp_{W,k}^i$  is exports from country  $i$  to every other country in the world in industrial sector  $k$ , and  $GDP_i$  is GDP for country  $i$ . We assume merchandise exports are composed of five industrial sectors ( $K$ ), that is, manufacturing, agricultural products, metals, fuel, and food. A higher value of this variable indicates country  $i$  and major economic  $c$  exports products in similar sectors so that their exported products tend to be competitive to each other. This index is normalized using the maximum value of the product in parentheses for every country pair in the sample. Thus, it ranges between zero and one.<sup>13</sup>

Theoretical prediction of this variable is not straightforward. For example, if a major economy lowers its policy interest rate, that would help depreciate the major economy's currency and therefore make its exports more competitive. If country  $i$  tends to export similar products in terms of the aggregated industrial sectors, that may also lead to a fall in the policy interest rate of country  $i$ , which makes a positive estimated coefficient on this variable. However, if a fall in the policy rate in this example foresees some underperforming productivity growth in the future, that may make competitors exporters appear more attractive. A rise in the demand for competitors' exports may lead a rise in the policy interest rate, making the expected sign of the estimate negative.

The fourth group is composed of the variables characterize the nature of institutional development (*INST*), namely, variables for financial development and legal development. As Caballero-Farhi-Gourinchas (2008) theoretically predict and Chinn and Ito (2007) empirically show, both Financial and legal development are important factors for the volume and directions of cross-border capital flows. Alfaro, et al. (2008) argue that institutional development is also an

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<sup>13</sup> This variable is an aggregated version of the trade competitiveness variable in Forbes and Chinn (2003). Their index is based on more disaggregated 14 industrial sectors.

important factor. If these factors affect cross-border capital flows, they should also affect the extent of sensitivity to financial shocks occurring to the center economies.

There is no agreement about what would be the best way to measure the extent of financial development, because the development of financial markets can be gauged in terms of size, depth, activeness, unit or transaction costs, and profitability to name a few. Here, to measure the level of financial development, we calculate a composite index, or the first principal component, of financial development (*FD*) using the data on private credit creation, stock market capitalization, stock market total value, and private bond market capitalization all as shares of GDP.<sup>14</sup> Additionally, we also include a measure of legal development, for which we use *LEGAL* which is the first principal component of law and order (*LAO*), bureaucratic quality (*BQ*), and anti-corruption measures (*CORRUPT*), all from the ICRG database.<sup>15</sup>

The  $\hat{\gamma}_{Fi}^C$  estimated from the first stage estimation can entail noise, because economic or financial disruptions can contribute to an extreme  $\hat{\gamma}_{Fi}^C$ . To control for that, we also include a vector of currency and banking crises (*CRISIS*). We use the crisis dummies from Aizenman and Ito (2013) to identify the two types of the crises. For currency crisis, Aizenman and Ito use the exchange market pressure index using the exchange rate against the currency of the base country. The banking crisis dummy is based on the papers by Laeven and Valencia (2008, 2010, 2012).<sup>16</sup>

For each of the four financial variables we estimated in the first-stage regression, we have  $(i \times C \times t)$   $\hat{\gamma}$ 's where  $t$  refers to either three- or five-year panels and  $C$  is four when we include China as a major economy and three if we do not. The variables in the vectors *MC* and *INST* are included in the estimations as differences from the U.S., Japanese, Chinese, and Euro Area's counterparts.

We use  $\hat{\gamma}_{Fi}^C$  from three- or five-year panels as we mentioned, though our discussions focus on the results from three-year panel estimations. For each of the three- or five-year periods, we average all the explanatory variables.<sup>17</sup> By so doing, we will essentially form non-overlapping three- or five-year panels.

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<sup>14</sup> Because the private bond market capitalization data go back only to 1990, the *FD* series before 1990 are extrapolated using the principal component of private credit creation, stock market capitalization, and stock market total values, which goes back to 1976. These two *FD* measures are highly correlated with each other.

<sup>15</sup> Higher values of these variables indicate better conditions.

<sup>16</sup> For more details on the construction of the indexes, see Appendix 1 of Aizenman and Ito (2013).

<sup>17</sup> If a crisis occurs in the three- or five-year period, we assign the value of one for the dummy.

### 3. Estimation Results

#### 3.1 Results of the First-Stage Estimations: The Extent of Linkages with the Major Economies

##### *Contributions of Different Factor Vectors*

For the first-stage estimation, we have four variables to estimate: policy interest rate, stock market price changes, nominal effective exchange rate changes, and sovereignty debt spread. We regress each of these dependent variables on four groups of explanatory variables: real global, financial global, cross-country, and domestic factors for three-year non-overlapping panels in the 1986-2012 period.<sup>18</sup>

To grasp the general trend of the groups of factors that influence the five financial variables, we focus on the joint significance of the variables included in the real global, financial global, cross-country, and domestic groups. Figures 4-1 through 4-4 illustrate the proportion of countries for which the joint significance tests are found to be statistically significant (with the  $p$ -value less than 10%) for each of the four financial variables. These figures are made using the model that includes China as a major economy. The figure illustrates the proportion for the full sample and the three country groups (i.e., IDC, LDC, and EMG) after 1992.

Let us make general observations of these five panels of figures, focusing on the results of the LDC and EMG groups.

First, the movements of the financial variables of the major economies matter for all of the four financial variables. These variables of the four major economies score the highest proportion of joint significance for all the country groups. For the policy interest rate and sovereignty spread models among LDC and EMG countries, the proportions of joint significance of the four major economies' financial variables remain relatively constant throughout the sample period. For the model of stock market price changes, the proportion of joint significance of the major economies' stock market price movements have been in a moderate rise among developing and emerging market countries in the aftermath of the Asian financial crisis period, signifying the stock markets in the major economies matter for developing countries.

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<sup>18</sup> For the model that includes China as a center economy, the sample for the stock market price estimation starts in 1994 due to data availability.

Second, as far as policy interest rate is concerned, the frequency of joint significance is also relatively high for the group of financial global variables and has been in a moderate rising trend for developing countries, especially those with emerging markets. Interestingly, the last two three-year panels experienced high proportions for all country groups, suggesting the policy interest rates of the major economies have been quite influential since the global financial crisis. In the panels for 1998-2000 and 2001-2003, the proportions are also relatively high for all the country groups. Considering that market economies, especially those in East Asia, experienced major financial crises in the 1998-2000 period, and that several economies including the U.S. experienced a bust of the IT bubble in the 2001-2003 period, the figures suggest that economies tend to follow the monetary policy of the major economies in a financial turbulence.

Third, stock market movements in almost all the developed economies seem to have been influenced by those in the major economies. The fact that many of the countries in this group have highly sophisticated stock markets explain the high proportion of joint significance.<sup>19</sup> Among developing or emerging market countries, the proportion of these economies subject to movements in the center economies used to be lower, but now it has been in a rising trend since the millennium.

Fourth, the characteristics of the portions of joint significance for the sovereignty spread model appear similar to those of the policy interest rate model; the major economies' sovereignty spreads play a dominantly important role; and the effect of financial global factors appears high especially during the global financial crisis. Compared to the policy rate model, however, real global factors appear important for all the country groups especially in the 2000s.

Fifth, for the changes in the NEER, the movements of the NEER among the major economies are dominantly important for all the country groups, especially developed economies. Interestingly, the highest proportion of developing or emerging market countries appear sensitive to the movements of the NEER of the major economies in the 2010-2012. These results are consistent with the sensitive reactions shared among policy leaders in emerging market economies to the U.S. discussions on the directions and decisions of unconventional monetary measures in the last few years.

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<sup>19</sup> This subsample includes most of the European Monetary Union members. That also contributes to the high proportion of joint significance.

Last, among the four types of financial variables, the contribution of industrial production growth as the domestic factor is generally low, though it tends to be slightly higher for the policy rate and sovereignty spread estimation models.

Overall, as Rey (2013) argues, these figures suggest that economies, both advanced and emerging, seem subject to the financial conditions of the major economies. We will investigate the determinants of the extent of sensitivity to the financial conditions of the major economies in the next subsection.

### *Contributions of China as a Major Economy*

So far, the estimation results illustrated in Figure 3 are based on the assumption that China is one of the major economies that exert financial influences. In the last decade or so, the Chinese economy has impressed the world and became the world's second largest economy. Hence, the economy can influence other economies' financial markets through its performance of real variables such as industrial production, export volumes, and GDP. However, one can still question whether China's financial markets per se are well-developed and externally open enough to affect the financial conditions of other countries. Many studies have shown that there is still much room for China to further develop and open its financial markets.<sup>20</sup> That said, we can question whether China is a financially influential economy or not.

As previously discussed, we conduct the two types of estimation exercise, depending on whether or not we consider China as one of the major economies. When we repeat the previous exercise of testing the joint significance of each vector of explanatory variables while excluding China from the group of the major economies, i.e., removing the Chinese variable from the cross-country, linkage vector, the general characteristics we observed in Figure 4 still turn out to be qualitatively intact, which suggests that the influence of China as a financially influential economy can be minimal.

To test it more formally, we compare the adjusted R-squared values of the two types of estimations for each country and each three-year panel, and for each of the four financial variables. Figure 5 illustrates the cross-country averages of the difference in the adjusted-R squared values between the estimation with China as one of the major economies and the one without for the four financial variables. The averages of the gap are calculated for the groups of

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<sup>20</sup> See Huang, et al. (2013) and Hung (2009) among others.

developed countries, developing countries, emerging market countries, and east Asian emerging market economies as a comparison.<sup>21</sup>

Overall, the contribution of including China as one of the major economies to the adjusted R-squared depends on the financial variable to test. As for the policy interest rate model, including China as a major country would increase the adjusted R-squared. However, despite the recent impressive rise as an economic power, interestingly, the extent of increase appears the highest in the Asian crisis years. Among East Asian emerging market economies, including the Chinese policy interest rate in the estimation model would increase the adjusted R-squared as much as almost 10% on average. In the last two three-year panels, the contribution seems negligible.

A similar observation can be also made for the sovereignty bond spread model, though the contribution of including China is even larger in the 1998-2000 period, and China's policy interest rate is also influential among East Asian emerging markets in the 2004-2006 period.

In the NEER figure, we see a high increase in the adjusted R-squared in the 1992-1994 period for developing and emerging market countries, especially in East Asia. This must be a reflection of the Renminbi's devaluation in 1994. In 1995 – 2000, China's NEER continues to appear somewhat influential. However, China's influence becomes negligible in the last two panels. Given the debate on the undervaluation of the Renminbi in those years, the lack of China's NEER's influence is interesting.

China's stock markets do not appear influential in most of the sample period, except for the 2004-2006 period. Considering that China's stock markets became open only recently, the lack of influence of China's stock markets is quite understandable.

### **3.2 Results of the Second-Stage Estimations: Determinants of the Linkages with the Center Economies**

Now that we have  $\hat{\gamma}_{Fi}^C$  for the four dependent variables, we investigate the determinants of the extent of linkages using the estimation model based on equation (2).

For that, we estimate two models with two different dependent variables for each of the four financial variables. Estimation Type 1 has the dependent variable of  $\hat{\gamma}_{Fi}^C$  from the first-stage

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<sup>21</sup> The group of East Asian emerging market economies includes: Hong Kong, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

estimation that does not include China as one of the major economies. Hence, for country  $i$  in one three-year panel  $t$ , there are three (i.e.,  $\hat{\gamma}_{Fi}^{US}$ ,  $\hat{\gamma}_{Fi}^{JP}$ , and  $\hat{\gamma}_{Fi}^{EURO}$ ), making  $(i \times 3 \times t)$  observations. Estimation Type 2 is done for the first-stage estimation with China included as one major economy, so that country  $i$  in one three-year panel  $t$  has four  $\hat{\gamma}_{Fi}^C$  ( $(i \times 4 \times t)$  observations).<sup>22</sup> For Estimation Type 2, because the data for cross-country bank lending and FDI stock provided by China are unavailable, its right-hand side does not include these variables.<sup>23</sup>

Tables 1 through 4 report the estimation results for the four financial variables for the FULL, IDC, LDC, and EMG samples for both Type 1 and Type 2 estimations. The bottom of the tables also report the joint significance tests for each vector of explanatory variables. We will focus our observations on the results for the subgroups of LDC and EMG.

As for the linkage of policy interest rate, reported in Tables 1-1 and 1-2, the variables that characterize countries' open macro policies do not appear to affect the extent of sensitivity to the monetary policies of the center economies. In both Tables 1-1 and 1-2, we can see that the variables of exchange rate stability, financial openness, and IR holding are not jointly significant for any of the samples shown in the tables. However, in Estimation Type 2, interestingly, IR holding is found to be a significantly negative contributor to the level of sensitivity for both IDC and LDC countries, though the estimates for LDC are only marginally significant. The negative estimates of IR holding may mean that countries may be able to retain monetary independence if they hold higher levels of IR.

Macroeconomic conditions seem to play an important role. The more volatile inflation a developing country experiences, the bilateral linkage with the center economies tends to be greater, which we can observe whether or not we include China as a major economy. This result may suggest that a country with volatile inflation tends to be more sensitive to changes in the monetary policy of the center economies. A country with greater gross debt also tends to be more sensitive to the movements of policy interest rate of the center economies. A consistent result is also found for emerging market economies when the model includes budget balance (as a share of GDP) instead of gross debt; the higher level of budget deficit an emerging market economy

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<sup>22</sup> Inclusion of China also changes the magnitude (and statistical significance) of the estimates for  $\gamma_{Fi}^{US}$ ,  $\gamma_{Fi}^{JP}$ , and  $\gamma_{Fi}^{EURO}$ .

<sup>23</sup> Type 2 estimation tends to have more observations, because the observation of dependent variables is greater and excluding the variables of cross-border bank lending and FDI relaxes data limitations.

runs, the more sensitive its monetary policy becomes with respect to that of the center economies. These results suggest that highly indebted countries tend to be more susceptible to shocks from the center economies, which can be possible due to the tendency among developing countries to get externally financed in hard currencies instead of their own currencies (Eichengreen and Hausmann, 1999). A rise in the borrowing cost by an increase in the center economies' policy interest rates get translated into a rise in the borrowing cost by an increase in countries' own policy interest rates.

Among the factors of external links, trade link direct trade linkages are the most important variable in determining how shocks to the center economies affect the monetary policies of other non-center economies of both industrialized and developing countries. A country with more trade with the major economies tends to be more sensitive to changes in the monetary policies of the center economies. In the Type 1 estimation, neither cross-bank lending nor FDI stock (both in terms of changes) is a significant contributor to the extent of sensitivity.

Financial development may matter but only for developed countries, not developing or emerging market countries. Developed countries with more developed financial markets tend to be more sensitive to the changes in the monetary policies of the center economies. That suggests that developed countries with deep financial markets can be good investment destinations for foreign investors, so that their arbitrage actions may lead those countries to follow the monetary conditions of the center economies more closely. However, developing or emerging market countries attempt to retain monetary independence once they experience a currency or banking crisis.

Tables 2-1 and 2-2 show that the model for stock market price changes shares some characteristics with the model for policy interest rates. A developing or emerging market country with more volatile inflation, or with larger government debt or deficit tends to be more sensitive to stock market movements of the center economies, while financial development matters but again only for developed economies.

Unlike the case with policy interest rates, the degree of exchange rate stability matters for stock market price changes. A country with greater exchange rate stability tends to experience a smaller degree of co-movement of stock market prices with the center economies. This result is somewhat counterintuitive considering that greater exchange rate stability may leave an economy more susceptible to external financial shocks. However, if a shock occurs in the center

economies, international investors may try to recognize their portfolios in the markets where the exchange rate is flexible because the exchange rate risk is greater than in a fixed exchange rate regime. In the estimation with the budget balance variable for the EMG countries, financial openness is found to increase the level of sensitivity with the center economies. Interestingly, however, none of the external link variables matters for stock market price changes. They are not jointly significant either.

Naturally, pursuing greater exchange rate stability would lead the nominal effective exchange rate to be more sensitive to that of the center economies, which is the case for all the subsample country groups (Tables 3-1 and 3-2). Greater financial openness would also contribute to greater sensitivity, though not for the EMG group.

Countries with worsened current account balances or with larger budget deficits are less sensitive to the NEER of the center economies. These results may reflect that such countries often face some difficulty in maintaining exchange rate stabilities against the currencies of the major economies while there is a general tendency among developing economies to pursue greater exchange rate stability (Aizenman, et al. 2013, Calvo, et al. 2000). The negative effect of inflation volatility on the sensitivity to the center economies' NEER can also be explained in a similar way.

Not surprisingly, countries with greater bilateral trade links with the center economies tend to be more sensitive to the NEER movements of the center economies. The impact of trade competitiveness is found to be negative though insignificantly so in the Type 2 estimation. This means peripheral countries with more competitive trade structure to that of the major economies tend to become alternative investment destination if a shock occurs to the center economies. For example, if a shock happens in a way that causes depreciation of the center economies' currencies, such as predicted output growth, an institutional change that would increase the level of labor rigidities, and a decrease in the appetite for the center economies' financial assets, the demand for financial assets in peripheral economies can rise and push the values of their currencies.

In contrast, countries with more developed financial markets tend to be less sensitive to the NEER movements of the center economies. These results are consistent with the observation that greater financial development allows a country to have more flexible exchange rate

movements; countries could afford to detach their currency values' movements from those of the center economies.

Tables 4-1 and 4-2 show that the movements of sovereignty bond spread among developing and emerging market countries tend to be more responsive to those of the center economies if they have more direct trade linkages with them or if they have more developed financial markets. As was in the case of policy interest rate, deeper or more developed financial markets seem to contribute to allowing shocks occurring to the center economies to spread to peripheral economies. In this sense, as Ito (2014) argues, countries can face the dilemma of financial development. On the one hand, developing countries want to develop or deepen their financial market to reap the benefit of greater financial intermediation. On the other hand, more developed financial markets could attract more foreign investment once government authorities decided to open the markets. However, that could make the markets more susceptible to external financial shocks or the global financial cycles.

Other factors, however, do not seem to be robust determinants of the sensitivity of the center economies' sovereignty spread.

#### *Interactive Effects of the Open Macro Policy Variables*

In the previous analysis, among the vector of explanatory variables, the vector of open macro policy variables is found to be the least jointly-significant. While these variables may not directly affect the extent of sensitivity to the center economies' financial variables, they may still affect the effect of other variables indirectly. Hence, we re-estimate the models while including interactive terms between the variables for exchange rate stability and financial openness and some selected variables. More specifically, we are interested in whether exchange rate stability and financial openness affect the impact of current account balances, government gross debt (both as a share of GDP), trade demand from the center economies, and the level of financial development, and report the results in Table 3 for all the four financial variables.<sup>24</sup>

We find several interesting results. First, while greater government debt alone would increase the extent of sensitivity to the movements of policy interest rate of the center economies, its interactive effect with exchange rate stability is found to be negative. A similar interactive

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<sup>24</sup> We use the Type 2 estimation model. The estimates for inflation volatility, trade competition, legal development, and currency and banking crisis are omitted from presentation due to space limitation.

effect is also found for the stock market price model. These results are somewhat counterintuitive, since countries with greater exchange rate stability may be more susceptible to shocks occurring to the center economies. However, these results may be another piece of evidence for the fear of floating (Calvo, et al. 2000); if a developing country faces more flexibility in its exchange rate movements on de facto basis while being highly indebted, such a country tends to be more sensitive to the movements of policy interest rates of the center economies and possibly try to align its own policy rate to those of the center economies. The threshold of the exchange rate stability index is 0.94, under which the marginal effect of gross government debt is positive, indicating that, for most of the levels of exchange rate stability, the net impact of gross government debt is positive, and its impact is greater as the extent of exchange rate *flexibility* increases.<sup>25</sup> The same explanation should apply to the case of stock market price changes shown in Table 3-2. For the stock market price model, interestingly, the estimate on the exchange rate stability variable becomes significantly negative.

Second, for the stock market price movements, the interactive effect between trade demand by the center economies and exchange rate stability is positive, meaning that greater trade demand from the center economies would make peripheral economies more sensitive to the stock market movements of the center economies if the countries pursue more stable exchange rate movements. The threshold of ERS for the positive impact is 0.58.

Furthermore, for emerging market economies, the interaction between financial openness and current account balances also matters. If a country with open financial markets runs current account deficits (i.e., negative current account balances), the stock market price movements of that country tend to be more sensitive to those of the major economies. This means that financial liberalization may make net borrower countries more susceptible to shocks occurring in the stock markets of the major economies.

Third, we observe such risk of financial liberalization in the link between peripheral countries and the major economies in terms of the movements of the nominal effective exchange rates; a country with more developed and open financial markets is more linked with the major economies through synchronized effective exchange rate movements. A country with more

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<sup>25</sup> In Column 9 of Table 3-1,  $\hat{\theta}_{GD}GDebt_{it} + \hat{\theta}_{GD-ERS}GDebt \cdot ERS_{it}$  is found to be  $1.408GDebt_{it} - 1.506GDebt \cdot ERS_{it}$  or  $(1.408 - 1.506ERS_{it})GDebt_{it}$ . By solving this for  $GDebt$  to have a positive impact, the threshold can be calculated. Likewise, the threshold of  $ERS$  for the stock market price model can be calculated as

exchange rate stability and greater gross national debt would also face more synchronized effective exchange rate movements. When greater exchange rate stability is coupled with more developed financial markets, however, the extent of synchronization tends to be smaller. In other words, a greater level of financial development would allow a developing country to become more independent of the NEER movements of the major economies.

#### **4. Concluding Remarks**

This paper investigates the questions of why and how financial conditions of developing and emerging market countries can be affected by the movements in the major advanced economies, namely, the U.S., Japan, the Euro area, and China. For estimation, we take a two-stage approach. We first investigate the extent of sensitivity to several important financial variables, such as policy interest rate, sovereignty bond spread, changes in stock market prices and the nominal effective exchange rates, of the major economies while controlling for global and domestic factors. Once we measure the extent of sensitivity, we will examine its determinants by testing a number of variables for country-specific macroeconomic conditions or policies, real or financial linkages with the center economy, and the levels of institutional development.

We find that for most of the financial variables we examine, the link with the center economies has been dominant for developing and emerging market economies in the last two decades. At the same time, the movements of policy interest rate and sovereignty spread have been more sensitive to those of the major economies since around the time of the Global Financial Crisis of 2008.

While China has been impressing the world with rapid economic growth and its influence on other economies, including the country as one of the major economies does not necessarily increase the goodness of fit for the estimations on the sensitivity of the financial variables of our concern. This suggests that, as of now, China may not exert influence in the financial sector to the same extent of other major economies such as the U.S., the Euro area, and Japan.

Our estimation results suggest that, across different financial linkages, overall, higher levels of direct trade linkage and financial development, greater import demand by the center

economies, and higher levels of gross national debt tend to lead to closer linkages of the financial conditions between the sample countries and the center economies.

The arrangements of open macro policies such as the exchange rate regime and financial openness does not seem to have a direct influence on the sensitivity to the major economies in terms of the movements of financial variables. However, the extents of exchange rate stability and financial openness do matter for the level of sensitivity when they are interacted with other variables such as current account balances, gross national debt, trade demand, and financial development. Thus, we can conclude that open macro policy arrangements affect the framework where other important macroeconomic, institutional, or policy variables affect the extent of sensitivity to the major economies.

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**Table 1-1: Factor Affecting the Correlations of Policy Interest Rate, 1986-2012 (Estimation Type 1: China not included)**

		FULL	FULL	IDC	IDC	LDC	LDC	EMG	EMG
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Open Macro Policy</i> (OMP)	Exchange stability	0.099 (0.276)	0.190 (0.313)	0.355 (0.452)	0.410 (0.482)	0.227 (0.366)	-0.502 (0.425)	0.073 (0.467)	-0.745 (0.595)
	Financial openness	-0.134 (0.237)	-0.070 (0.247)	-0.042 (0.501)	-0.227 (0.526)	-0.108 (0.325)	0.204 (0.326)	-0.375 (0.421)	0.021 (0.451)
	IR Holding	-0.610 (0.604)	-0.629 (0.602)	-1.206 (1.050)	-1.760 (1.157)	-0.908 (0.893)	-1.212 (0.899)	-0.462 (1.091)	1.705 (1.401)
<i>Macro. Conditions</i> (MC)	CA balance (%)	-0.285 (0.844)	0.252 (0.926)	-0.644 (1.623)	-0.780 (1.742)	0.267 (1.165)	0.962 (1.234)	-0.720 (1.988)	0.546 (2.065)
	Inflation Vol.	2.403 (1.239)*	0.131 (1.597)	-5.303 (2.876)*	-5.799 (2.981)*	3.712 (1.611)**	6.718 (2.074)***	3.486 (1.906)*	2.378 (2.496)
	Gross debt (%)	0.348 (0.124)***		0.446 (0.175)**		0.271 (0.176)		0.452 (0.192)**	
	Budget balance (%)		-0.235 (0.965)		0.383 (2.735)		0.413 (1.158)		-9.955 (3.344)***
<i>External Link</i> (LINK)	Trade competition	-0.833 (0.877)	-0.917 (0.890)	-3.520 (2.619)	-2.771 (2.702)	-0.736 (1.189)	0.323 (1.176)	-0.674 (1.392)	-1.940 (1.463)
	Trade demand	2.367 (0.859)***	2.512 (0.838)***	2.545 (1.363)*	3.431 (1.404)**	2.755 (1.199)**	2.829 (1.161)**	3.215 (1.338)**	3.467 (1.414)**
	Chg. in bank lend.	-1.733 (2.092)	-1.823 (2.001)	0.471 (2.035)	0.081 (2.157)	-5.368 (3.551)	-4.799 (3.290)	-4.996 (4.338)	-5.291 (4.367)
	Chg. in FDI stock	6.858 (8.641)	9.809 (8.395)	1.836 (12.605)	4.940 (13.372)	8.530 (11.623)	11.506 (10.841)	8.677 (13.238)	9.424 (13.088)
<i>Institutional Dev.</i> (INST)	Fin. Dev.	0.436 (0.216)**	0.442 (0.217)**	0.717 (0.391)*	0.669 (0.442)	0.443 (0.291)	0.423 (0.282)	0.430 (0.358)	0.364 (0.375)
	Legal Dev.	0.516 (0.454)	0.336 (0.453)	-0.707 (0.989)	-1.230 (1.057)	0.874 (0.854)	-0.765 (0.840)	0.277 (0.996)	-1.849 (1.135)
<i>Crises</i> (CRISIS)	Currency crisis	-0.240 (0.233)	-0.396 (0.232)*	-0.153 (0.245)	-0.096 (0.262)	-0.289 (0.366)	-1.264 (0.369)***	-0.479 (0.409)	-0.735 (0.431)*
	Banking crisis	-0.336 (0.167)**	-0.324 (0.165)*	-0.183 (0.191)	-0.246 (0.202)	-0.430 (0.259)*	-0.345 (0.256)	-0.570 (0.312)*	-0.409 (0.345)
	N	476	400	135	135	341	265	273	222
	Adj. R2	0.07	0.05	0.14	0.09	0.03	0.06	0.04	0.06
	# of countries	56	49	18	18	38	31	28	24
	F-test, OMP	0.70	0.66	0.61	0.43	0.67	0.36	0.74	0.50
	F-test, Macro	0.00	0.99	0.03	0.28	0.03	0.01	0.01	0.02
	F-test, Ext. Link	0.08	0.03	0.40	0.18	0.15	0.05	0.16	0.14
	F-test, Inst. Dev.	0.00	0.01	0.15	0.21	0.10	0.28	0.42	0.19
	F-test, All	0.00	0.00	0.00	0.03	0.03	0.01	0.03	0.02

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The second estimation is conducted for the estimates  $\hat{\gamma}_{Fi}^C$  from the first-stage estimation that does not include China as one of the major economies.

**Table 1-2: Factor Affecting the Correlations of Policy Interest Rate, 1986-2012 (Estimation Type 2: China included)**

		FULL	FULL	IDC	IDC	LDC	LDC	EMG	EMG
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Open Macro Policy (OMP)</i>	Exchange stability	0.225 (0.226)	0.163 (0.264)	0.445 (0.324)	0.318 (0.382)	0.418 (0.358)	0.034 (0.428)	0.228 (0.439)	-0.511 (0.570)
	Financial openness	0.009 (0.187)	-0.063 (0.207)	0.293 (0.329)	0.008 (0.414)	0.135 (0.309)	0.061 (0.329)	-0.190 (0.385)	-0.363 (0.445)
	IR Holding	-1.000 (0.495)**	-0.969 (0.518)*	-1.687 (0.836)**	-1.829 (0.980)*	-1.422 (0.872)	-1.304 (0.941)	-1.244 (1.030)	1.612 (1.391)
<i>Macro. Conditions (MC)</i>	CA balance (%)	0.004 (0.633)	0.665 (0.739)	-1.540 (1.127)	-0.173 (1.326)	0.311 (0.975)	1.124 (1.139)	-0.890 (1.775)	-1.913 (1.975)
	Inflation Vol.	3.325 (0.181)***	1.435 (1.355)	0.120 (1.805)	-0.182 (2.235)	3.338 (0.252)***	3.165 (2.090)	3.341 (0.258)***	0.064 (2.448)
	Gross debt (%)	0.173 (0.089)*		0.475 (0.155)***		0.156 (0.144)		0.366 (0.168)**	
	Budget balance (%)		-0.438 (0.723)		-1.952 (2.017)		-0.386 (1.027)		-10.943 (3.067)***
<i>External Link (LINK)</i>	Trade competition	-0.236 (0.679)	-0.503 (0.723)	-1.925 (1.440)	-0.897 (1.580)	-0.059 (1.113)	0.114 (1.169)	0.655 (1.265)	-0.667 (1.423)
	Trade demand	2.505 (0.775)***	2.609 (0.778)***	1.709 (1.039)	3.324 (1.177)***	2.234 (1.264)*	2.618 (1.213)**	2.627 (1.358)*	2.419 (1.462)*
	Chg. in bank lend.								
	Chg. in FDI stock								
<i>Institutional Dev. (INST)</i>	Fin. Dev.	0.412 (0.186)**	0.438 (0.199)**	0.832 (0.251)***	0.618 (0.310)**	0.379 (0.305)	0.430 (0.320)	0.197 (0.356)	0.129 (0.404)
	Legal Dev.	0.425 (0.341)	0.243 (0.372)	0.069 (0.673)	-0.288 (0.805)	0.729 (0.757)	-0.363 (0.802)	0.631 (0.865)	-1.321 (1.005)
<i>Crises (CRISIS)</i>	Currency crisis	-0.222 (0.171)	-0.251 (0.196)	-0.210 (0.173)	-0.031 (0.213)	-0.084 (0.305)	-0.665 (0.368)*	-0.195 (0.337)	-0.479 (0.417)
	Banking crisis	-0.211 (0.135)	-0.304 (0.143)**	-0.064 (0.148)	-0.275 (0.178)	-0.292 (0.243)	-0.321 (0.260)	-0.439 (0.276)	-0.485 (0.339)
	<i>N</i>	802	586	267	207	535	379	415	308
	Adj. R2	0.31	0.05	0.14	0.11	0.25	0.01	0.30	0.05
	# of countries	56	49	18	18	38	31	28	24
	F-test, OMP	0.18	0.24	0.04	0.21	0.28	0.57	0.54	0.56
	F-test, Macro	0.00	0.63	0.01	0.77	0.00	0.42	0.00	0.00
	F-test, Ext. Link	0.00	0.00	0.12	0.02	0.18	0.07	0.08	0.26
	F-test, Inst. Dev.	0.00	0.01	0.00	0.13	0.21	0.40	0.62	0.41
	F-test, All	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The second estimation is conducted for the estimates  $\hat{\gamma}_{Fi}^C$  from the first-stage estimation that includes China as one of the major economies.

**Table 2-1: Factor Affecting the Correlations of Stock Market Price Index, 1986-2012 (Estimation Type 1: China not included)**

		FULL	FULL	IDC	IDC	LDC	LDC	EMG	EMG
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Open Macro Policy</i> (OMP)	Exchange stability	0.005 (0.122)	0.067 (0.137)	0.424 (0.219)*	0.439 (0.230)*	-0.325 (0.155)**	-0.297 (0.181)	-0.293 (0.179)	-0.328 (0.209)
	Financial openness	0.169 (0.110)	0.181 (0.126)	0.233 (0.400)	0.327 (0.420)	0.021 (0.121)	0.008 (0.137)	0.210 (0.140)	0.202 (0.158)
	IR Holding	0.041 (0.245)	0.169 (0.269)	-0.419 (0.604)	-0.254 (0.647)	0.324 (0.310)	0.493 (0.339)	0.254 (0.359)	0.570 (0.446)
<i>Macro. Conditions</i> (MC)	CA balance (%)	-0.557 (0.370)	0.193 (0.414)	-0.686 (0.934)	1.029 (0.973)	-0.551 (0.443)	-0.325 (0.465)	-0.187 (0.678)	-0.226 (0.683)
	Inflation Vol.	0.594 (0.597)	-0.462 (0.997)	2.083 (2.056)	3.395 (2.115)	0.646 (0.650)	-0.605 (1.131)	0.589 (0.670)	-0.966 (1.236)
	Gross debt (%)	0.136 (0.036)***		0.314 (0.068)***		0.092 (0.045)**		0.138 (0.051)***	
	Budget balance (%)		-0.438 (0.723)		-1.952 (2.017)		-0.386 (1.027)		-10.943 (3.067)***
<i>External Link</i> (LINK)	Trade competition	-0.181 (0.356)	-0.453 (0.388)	-1.556 (1.157)	-1.211 (1.208)	0.212 (0.419)	-0.082 (0.445)	-0.098 (0.458)	-0.364 (0.482)
	Trade demand	-0.473 (0.341)	-0.094 (0.368)	-0.404 (0.741)	-0.010 (0.749)	-0.415 (0.406)	-0.082 (0.437)	-0.274 (0.425)	-0.052 (0.457)
	Chg. in bank lend.	0.787 (0.692)	0.943 (0.730)	0.032 (0.884)	-0.112 (0.928)	0.556 (1.180)	0.453 (1.199)	0.878 (1.349)	0.629 (1.373)
	Chg. in FDI stock	1.989 (3.090)	1.490 (3.241)	-1.070 (5.062)	-1.602 (5.255)	1.420 (3.782)	0.137 (3.796)	0.928 (3.956)	-0.564 (3.924)
<i>Institutional Dev.</i> (INST)	Fin. Dev.	0.167 (0.089)*	0.070 (0.095)	0.570 (0.200)***	0.202 (0.230)	-0.031 (0.103)	-0.123 (0.105)	0.052 (0.115)	-0.065 (0.119)
	Legal Dev.	-0.145 (0.198)	-0.084 (0.218)	-1.198 (0.555)**	-1.216 (0.592)**	-0.449 (0.317)	-0.333 (0.364)	-0.429 (0.336)	-0.393 (0.398)
<i>Crises</i> (CRISIS)	Currency crisis	0.079 (0.096)	0.161 (0.104)	0.178 (0.132)	0.178 (0.140)	0.008 (0.135)	0.106 (0.146)	0.032 (0.137)	0.127 (0.147)
	Banking crisis	0.012 (0.068)	-0.016 (0.074)	0.031 (0.106)	-0.103 (0.112)	0.030 (0.091)	0.024 (0.099)	0.005 (0.103)	-0.009 (0.113)
	N	389	345	119	117	270	228	235	193
	Adj. R2	0.07	0.02	0.25	0.24	0.01	-0.02	0.00	-0.03
	# of countries	48	45	19	19	29	26	24	21
	F-test, OMP	0.48	0.37	0.15	0.15	0.14	0.16	0.14	0.16
	F-test, Macro	0.00	0.09	0.00	0.00	0.05	0.71	0.09	0.69
	F-test, Ext. Link	0.37	0.47	0.28	0.70	0.86	0.99	0.91	0.92
	F-test, Inst. Dev.	0.16	0.76	0.01	0.12	0.27	0.24	0.44	0.48
	F-test, All	0.00	0.13	0.00	0.00	0.21	0.83	0.45	0.82

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The second estimation is conducted for the estimates  $\hat{\gamma}_{Fi}^C$  from the first-stage estimation that does not include China as one of the major economies.

**Table 2-2: Factor Affecting the Correlations of Stock Market Price Index, 1986-2012 (Estimation Type 2: China included)**

		FULL	FULL	IDC	IDC	LDC	LDC	EMG	EMG
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Open Macro Policy</i> (OMP)	Exchange stability	-0.086 (0.083)	-0.101 (0.092)	0.257 (0.124)**	0.282 (0.159)*	-0.231 (0.116)**	-0.321 (0.120)***	-0.250 (0.136)*	-0.466 (0.147)***
	Financial openness	0.047 (0.077)	0.163 (0.084)*	-0.250 (0.238)	-0.086 (0.300)	0.004 (0.089)	0.075 (0.093)	0.147 (0.106)	0.238 (0.107)**
	IR Holding	0.091 (0.177)	0.187 (0.188)	-0.591 (0.424)	-0.429 (0.510)	0.265 (0.242)	0.447 (0.248)*	0.196 (0.284)	0.536 (0.319)*
<i>Macro. Conditions</i> (MC)	CA balance (%)	-0.182 (0.257)	0.222 (0.274)	0.518 (0.548)	1.345 (0.662)**	-0.195 (0.308)	-0.145 (0.316)	0.110 (0.517)	0.118 (0.470)
	Inflation Vol.	0.085 (0.035)**	0.078 (0.042)*	1.446 (1.122)	2.420 (1.489)	0.100 (0.036)***	0.066 (0.042)	0.084 (0.037)**	0.072 (0.041)*
	Gross debt (%)	0.136 (0.036)***		0.314 (0.068)***		0.092 (0.045)**		0.138 (0.051)***	
	Budget balance (%)		-0.438 (0.723)		-1.952 (2.017)		-0.386 (1.027)		-10.943 (3.067)***
<i>External Link</i> (LINK)	Trade competition	-0.083 (0.242)	-0.374 (0.264)	-1.267 (0.484)***	-1.365 (0.636)**	0.134 (0.311)	-0.133 (0.316)	-0.060 (0.351)	-0.303 (0.350)
	Trade demand	0.194 (0.267)	0.393 (0.288)	0.438 (0.411)	0.742 (0.511)	-0.294 (0.342)	0.169 (0.349)	-0.248 (0.361)	0.127 (0.369)
	Chg. in bank lend.								
	Chg. in FDI stock								
<i>Institutional Dev.</i> (INST)	Fin. Dev.	0.124 (0.068)*	0.120 (0.075)	0.651 (0.114)***	0.397 (0.163)**	-0.082 (0.085)	-0.107 (0.089)	-0.027 (0.093)	-0.057 (0.097)
	Legal Dev.	-0.141 (0.135)	-0.148 (0.150)	0.250 (0.333)	-0.218 (0.416)	-0.196 (0.227)	-0.310 (0.248)	-0.143 (0.241)	-0.399 (0.269)
<i>Crises</i> (CRISIS)	Currency crisis	0.008 (0.063)	0.066 (0.076)	0.102 (0.080)	0.087 (0.105)	-0.019 (0.090)	0.091 (0.110)	-0.002 (0.093)	0.100 (0.110)
	Banking crisis	0.077 (0.049)	0.004 (0.055)	0.134 (0.072)*	-0.049 (0.092)	0.065 (0.066)	0.029 (0.074)	0.039 (0.075)	-0.023 (0.086)
	N	612	486	222	172	390	314	330	256
	Adj. R2	0.04	0.03	0.26	0.23	0.04	0.02	0.04	0.04
	# of countries	48	45	19	19	29	26	24	21
	F-test, OMP	0.64	0.15	0.16	0.30	0.16	0.02	0.11	0.00
	F-test, Macro	0.00	0.02	0.00	0.00	0.01	0.45	0.00	0.16
	F-test, Ext. Link	0.76	0.22	0.03	0.08	0.68	0.85	0.73	0.68
	F-test, Inst. Dev.	0.19	0.27	0.00	0.05	0.34	0.15	0.78	0.26
	F-test, All	0.00	0.01	0.00	0.00	0.01	0.12	0.01	0.03

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The second estimation is conducted for the estimates  $\hat{\gamma}_{Fi}^C$  from the first-stage estimation that includes China as one of the major economies.

**Table 3-1: Factor Affecting the Correlations of NEER, 1986-2012 (Estimation Type 1: China not included)**

		FULL	FULL	IDC	IDC	LDC	LDC	EMG	EMG
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Open Macro Policy</i> (OMP)	Exchange stability	0.959 (0.116)***	0.882 (0.118)***	0.783 (0.184)***	0.923 (0.184)***	0.940 (0.171)***	0.840 (0.193)***	0.874 (0.203)***	0.974 (0.199)***
	Financial openness	0.272 (0.100)***	0.301 (0.103)***	0.038 (0.225)	-0.111 (0.220)	0.289 (0.137)**	0.387 (0.143)***	-0.129 (0.159)	-0.043 (0.153)
	IR Holding	0.244 (0.238)	0.061 (0.237)	-0.124 (0.483)	-0.233 (0.490)	0.505 (0.354)	0.410 (0.433)	0.480 (0.346)	-0.148 (0.392)
<i>Macro. Conditions</i> (MC)	CA balance (%)	1.390 (0.406)***	1.186 (0.401)***	1.574 (0.716)**	1.301 (0.714)*	1.368 (0.636)**	1.240 (0.623)**	1.264 (0.647)*	1.541 (0.587)***
	Inflation Vol.	-0.090 (0.551)	0.478 (0.604)	1.853 (1.305)	1.807 (1.251)	-0.184 (0.067)***	-0.715 (0.784)	-0.183 (0.062)***	-0.176 (0.056)***
	Gross debt (%)	0.004 (0.050)		-0.063 (0.078)		-0.025 (0.072)		-0.064 (0.068)	
	Budget balance (%)		0.225 (0.691)		1.735 (1.156)		0.108 (1.070)		2.324 (1.091)**
<i>External Link</i> (LINK)	Trade competition	-1.148 (0.337)***	-0.847 (0.344)**	0.274 (1.002)	0.146 (0.982)	-1.203 (0.438)***	-1.120 (0.472)**	-0.785 (0.456)*	-0.549 (0.444)
	Trade demand	1.360 (0.317)***	1.208 (0.311)***	0.645 (0.629)	0.488 (0.607)	1.609 (0.413)***	1.451 (0.424)***	1.704 (0.400)***	1.789 (0.397)***
	Chg. in bank lend.	-0.752 (0.653)	-0.737 (0.619)	-0.989 (0.774)	-0.975 (0.761)	-0.966 (1.224)	-0.704 (1.184)	-0.246 (1.296)	0.221 (1.210)
	Chg. in FDI stock	3.657 (2.913)	3.607 (2.727)	3.878 (4.469)	4.144 (4.381)	3.581 (3.893)	3.828 (3.621)	2.283 (3.783)	3.502 (3.437)
<i>Institutional Dev.</i> (INST)	Fin. Dev.	-0.141 (0.087)	-0.095 (0.084)	0.116 (0.168)	0.229 (0.179)	-0.253 (0.117)**	-0.162 (0.116)	-0.189 (0.117)	-0.072 (0.110)
	Legal Dev.	-0.092 (0.181)	-0.189 (0.177)	-0.871 (0.426)**	-0.788 (0.426)*	-0.287 (0.316)	-0.417 (0.332)	-0.011 (0.330)	0.150 (0.341)
<i>Crises</i> (CRISIS)	Currency crisis	0.157 (0.090)*	0.110 (0.088)	0.123 (0.111)	0.162 (0.111)	0.158 (0.142)	0.077 (0.156)	0.212 (0.136)	0.061 (0.138)
	Banking crisis	-0.080 (0.062)	-0.069 (0.059)	-0.156 (0.089)*	-0.118 (0.087)	-0.013 (0.091)	0.023 (0.089)	-0.041 (0.098)	0.040 (0.095)
	N	386	338	145	145	242	193	196	165
	Adj. R2	0.26	0.25	0.30	0.33	0.26	0.21	0.26	0.31
	# of countries	45	41	19	19	26	22	19	17
	F-test, OMP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-test, Macro	0.01	0.01	0.07	0.03	0.01	0.13	0.01	0.00
	F-test, Ext. Link	0.00	0.00	0.40	0.50	0.00	0.01	0.00	0.00
	F-test, Inst. Dev.	0.06	0.07	0.12	0.13	0.03	0.13	0.24	0.76
	F-test, All	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The second estimation is conducted for the estimates  $\hat{\gamma}_{Fi}^C$  from the first-stage estimation that does not include China as one of the major economies.

**Table 3-2: Factor Affecting the Correlations of NEER, 1986-2012 (Estimation Type 2: China included)**

		FULL	FULL	IDC	IDC	LDC	LDC	EMG	EMG
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Open Macro Policy</i> (OMP)	Exchange stability	0.631 (0.072)***	0.674 (0.075)***	0.416 (0.092)***	0.557 (0.104)***	0.823 (0.129)***	0.765 (0.134)***	0.796 (0.163)***	0.849 (0.148)***
	Financial openness	0.072 (0.062)	0.091 (0.065)	-0.219 (0.108)**	-0.309 (0.128)**	0.179 (0.096)*	0.249 (0.091)***	-0.151 (0.119)	-0.003 (0.105)
	IR Holding	0.253 (0.152)*	0.160 (0.152)	0.085 (0.287)	0.095 (0.310)	0.238 (0.273)	-0.056 (0.283)	0.292 (0.286)	-0.251 (0.291)
<i>Macro. Conditions</i> (MC)	CA balance (%)	0.501 (0.270)*	0.647 (0.253)**	0.960 (0.370)***	1.249 (0.397)***	0.362 (0.461)	0.653 (0.395)*	0.142 (0.499)	0.592 (0.408)
	Inflation Vol.	-0.137 (0.036)***	-0.130 (0.033)***	0.062 (0.614)	0.297 (0.714)	-0.152 (0.037)***	-0.127 (0.036)***	-0.151 (0.036)***	-0.123 (0.035)***
	Gross debt (%)	0.023 (0.032)		-0.002 (0.049)		0.011 (0.050)		-0.024 (0.055)	
	Budget balance (%)		0.041 (0.421)		0.426 (0.595)		0.612 (0.710)		1.709 (0.760)**
<i>External Link</i> (LINK)	Trade competition	-0.629 (0.203)***	-0.564 (0.211)***	-0.374 (0.374)	-0.383 (0.418)	-0.392 (0.317)	-0.330 (0.304)	-0.166 (0.356)	-0.074 (0.320)
	Trade demand	0.869 (0.222)***	0.923 (0.218)***	1.256 (0.316)***	1.250 (0.334)***	0.647 (0.333)*	0.667 (0.303)**	0.763 (0.337)**	0.855 (0.299)***
	Chg. in bank lend.								
	Chg. in FDI stock								
<i>Institutional Dev.</i> (INST)	Fin. Dev.	-0.185 (0.058)***	-0.250 (0.059)***	0.046 (0.083)	-0.021 (0.098)	-0.391 (0.089)***	-0.353 (0.086)***	-0.317 (0.093)***	-0.284 (0.085)***
	Legal Dev.	-0.011 (0.106)	0.095 (0.110)	-0.072 (0.217)	-0.132 (0.244)	-0.080 (0.207)	0.151 (0.203)	0.157 (0.224)	0.480 (0.214)**
<i>Crises</i> (CRISIS)	Currency crisis	0.066 (0.052)	0.033 (0.057)	-0.045 (0.058)	0.028 (0.066)	0.263 (0.091)***	0.016 (0.101)	0.342 (0.094)***	0.046 (0.097)
	Banking crisis	-0.008 (0.040)	-0.008 (0.040)	-0.073 (0.052)	-0.066 (0.057)	0.006 (0.065)	0.053 (0.060)	-0.033 (0.073)	0.043 (0.068)
	N	659	488	297	227	363	261	288	216
	Adj. R2	0.16	0.23	0.19	0.29	0.21	0.25	0.19	0.28
	# of countries	45	41	19	19	26	22	19	17
	F-test, OMP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-test, Macro	0.00	0.00	0.08	0.01	0.00	0.00	0.00	0.00
	F-test, Ext. Link	0.00	0.00	0.00	0.00	0.11	0.06	0.08	0.02
	F-test, Inst. Dev.	0.00	0.00	0.84	0.79	0.00	0.00	0.00	0.00
	F-test, All	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The second estimation is conducted for the estimates  $\hat{\gamma}_{Fi}^C$  from the first-stage estimation that includes China as one of the major economies.

**Table 4-1: Factor Affecting the Correlations of Sovereignty Spread, 1986-2012 (Estimation Type 1: China not included)**

		FULL	FULL	IDC	IDC	LDC	LDC	EMG	EMG
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Open Macro Policy</i> (OMP)	Exchange stability	-0.022 (0.174)	0.056 (0.182)	0.353 (0.236)	0.473 (0.250)*	-0.265 (0.278)	-0.241 (0.333)	-0.216 (0.296)	-0.233 (0.364)
	Financial openness	-0.137 (0.165)	-0.162 (0.176)	-0.442 (0.298)	-0.677 (0.307)**	-0.236 (0.264)	-0.092 (0.298)	-0.163 (0.291)	-0.079 (0.311)
	IR Holding	0.067 (0.362)	-0.073 (0.379)	-0.565 (0.633)	-0.970 (0.673)	0.641 (0.637)	0.662 (0.812)	0.347 (0.664)	0.493 (0.878)
<i>Macro. Conditions</i> (MC)	CA balance (%)	-0.339 (0.632)	-0.255 (0.642)	0.856 (0.932)	0.965 (0.989)	-1.247 (1.185)	-1.015 (1.210)	-0.619 (1.240)	-0.961 (1.239)
	Inflation Vol.	0.059 (0.836)	0.020 (1.036)	5.405 (1.940)***	7.238 (1.937)***	-0.511 (1.169)	-1.439 (1.548)	-0.361 (1.275)	-1.707 (1.552)
	Gross debt (%)	0.181 (0.080)**		0.086 (0.101)		0.166 (0.130)		0.151 (0.131)	
	Budget balance (%)		-0.105 (1.147)		0.938 (1.581)		-0.482 (2.068)		-0.024 (2.189)
<i>External Link</i> (LINK)	Trade competition	-0.927 (0.534)*	-0.738 (0.547)	-2.578 (1.285)**	-2.662 (1.342)**	-0.926 (0.813)	-0.786 (0.859)	-0.789 (0.838)	-0.579 (0.886)
	Trade demand	2.338 (0.513)***	2.452 (0.512)***	1.294 (0.807)	1.532 (0.830)*	3.250 (0.784)***	3.175 (0.811)***	3.267 (0.812)***	3.312 (0.833)***
	Chg. in bank lend.	1.220 (1.059)	1.206 (1.032)	1.759 (0.991)*	1.450 (1.036)	-1.229 (2.448)	-0.682 (2.437)	-0.632 (2.537)	0.115 (2.497)
	Chg. in FDI stock	4.258 (4.741)	4.337 (4.604)	1.590 (5.718)	1.053 (5.969)	6.425 (7.482)	7.541 (7.293)	7.842 (7.533)	7.803 (7.230)
<i>Institutional Dev.</i> (INST)	Fin. Dev.	0.430 (0.139)***	0.392 (0.141)***	0.318 (0.215)	0.380 (0.244)	0.477 (0.217)**	0.453 (0.228)**	0.492 (0.224)**	0.441 (0.229)*
	Legal Dev.	0.052 (0.303)	0.274 (0.306)	-1.445 (0.557)**	-1.563 (0.592)***	-0.290 (0.658)	-0.499 (0.745)	-0.380 (0.693)	-0.613 (0.788)
<i>Crises</i> (CRISIS)	Currency crisis	0.052 (0.145)	0.065 (0.145)	0.131 (0.142)	0.147 (0.151)	0.018 (0.280)	0.108 (0.316)	-0.035 (0.282)	0.098 (0.315)
	Banking crisis	0.115 (0.107)	0.063 (0.111)	0.014 (0.113)	0.031 (0.119)	0.463 (0.196)**	0.383 (0.225)*	0.292 (0.215)	0.089 (0.255)
	N	368	321	142	142	226	179	204	162
	Adj. R2	0.13	0.14	0.25	0.27	0.10	0.10	0.08	0.09
	# of countries	48	43	19	19	29	24	25	21
	F-test, OMP	0.85	0.81	0.24	0.05	0.51	0.79	0.78	0.89
	F-test, Macro	0.16	0.98	0.02	0.00	0.53	0.73	0.71	0.68
	F-test, Ext. Link	0.00	0.00	0.11	0.14	0.00	0.00	0.00	0.00
	F-test, Inst. Dev.	0.00	0.00	0.02	0.02	0.09	0.14	0.09	0.15
	F-test, All	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The second estimation is conducted for the estimates  $\hat{\gamma}_{Fi}^C$  from the first-stage estimation that does not include China as one of the major economies.

**Table 4-2: Factor Affecting the Correlations of Sovereignty Spread, 1986-2012 (Estimation Type 2: China included)**

		FULL	FULL	IDC	IDC	LDC	LDC	EMG	EMG
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Open Macro Policy (OMP)</i>	Exchange stability	-0.094 (0.110)	-0.102 (0.127)	0.126 (0.126)	0.197 (0.167)	-0.230 (0.229)	-0.352 (0.260)	-0.219 (0.240)	-0.310 (0.283)
	Financial openness	-0.002 (0.106)	0.009 (0.123)	0.074 (0.154)	-0.271 (0.209)	-0.255 (0.215)	-0.093 (0.241)	-0.174 (0.232)	-0.049 (0.250)
	IR Holding	-0.204 (0.236)	-0.328 (0.266)	-0.549 (0.406)	-1.099 (0.501)**	0.406 (0.549)	0.432 (0.654)	0.133 (0.564)	0.206 (0.705)
<i>Macro. Conditions (MC)</i>	CA balance (%)	0.028 (0.428)	0.185 (0.448)	0.252 (0.514)	1.224 (0.646)*	-0.946 (0.954)	-0.865 (0.927)	-0.642 (0.976)	-0.978 (0.955)
	Inflation Vol.	-0.275 (0.559)	0.423 (0.766)	0.651 (0.961)	4.307 (1.302)***	-0.360 (0.962)	-0.414 (1.247)	-0.019 (1.058)	-0.711 (1.242)
	Gross debt (%)	0.078 (0.049)		0.102 (0.068)		0.092 (0.096)		0.041 (0.098)	
	Budget balance (%)		-0.388 (0.763)		0.472 (0.966)		-0.902 (1.607)		-0.350 (1.699)
<i>External Link (LINK)</i>	Trade competition	-0.463 (0.333)	-0.347 (0.371)	-1.023 (0.513)**	-1.493 (0.673)**	-0.716 (0.664)	-0.428 (0.680)	-0.447 (0.677)	-0.143 (0.701)
	Trade demand	2.594 (0.369)***	2.834 (0.403)***	2.258 (0.432)***	2.511 (0.539)***	2.614 (0.726)***	2.687 (0.710)***	2.541 (0.734)***	2.745 (0.720)***
	Chg. in bank lend.								
	Chg. in FDI stock								
<i>Institutional Dev. (INST)</i>	Fin. Dev.	0.412 (0.095)***	0.393 (0.106)***	0.536 (0.114)***	0.600 (0.159)***	0.275 (0.194)	0.277 (0.199)	0.279 (0.194)	0.263 (0.199)
	Legal Dev.	-0.064 (0.191)	0.018 (0.210)	-0.160 (0.307)	-1.115 (0.400)***	0.476 (0.530)	-0.217 (0.573)	0.364 (0.545)	-0.267 (0.597)
<i>Crises (CRISIS)</i>	Currency crisis	-0.090 (0.088)	-0.053 (0.104)	-0.004 (0.079)	0.062 (0.107)	-0.136 (0.208)	-0.138 (0.251)	-0.147 (0.206)	-0.122 (0.250)
	Banking crisis	0.093 (0.070)	0.016 (0.082)	0.024 (0.071)	-0.012 (0.092)	0.344 (0.159)**	0.381 (0.181)**	0.237 (0.169)	0.164 (0.205)
	<i>N</i>	618	470	288	221	330	249	294	222
	Adj. R2	0.14	0.16	0.25	0.29	0.06	0.08	0.04	0.07
	# of countries	48	43	19	19	29	24	25	21
	F-test, OMP	0.70	0.56	0.28	0.13	0.42	0.51	0.61	0.68
	F-test, Macro	0.37	0.91	0.31	0.00	0.69	0.76	0.92	0.76
	F-test, Ext. Link	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	F-test, Inst. Dev.	0.00	0.00	0.00	0.00	0.14	0.38	0.19	0.41
	F-test, All	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The second estimation is conducted for the estimates  $\hat{\gamma}_{Fi}^C$  from the first-stage estimation that includes China as one of the major economies.

**Table 3-1: Interactive Effects of OMP: Policy Interest Rate, 1986-2012 (Type 2: China included)**

	FULL	FULL	FULL	IDC	IDC	IDC	LDC	LDC	LDC	EMG	EMG	EMG
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Exchange stability	0.250 (0.232)	-0.169 (0.434)	-0.195 (0.441)	0.398 (0.365)	1.242 (0.631)*	2.139 (0.722)***	0.227 (0.375)	-0.389 (0.747)	-0.328 (0.806)	0.090 (0.457)	-0.692 (0.842)	-0.823 (0.911)
Financial openness	-0.279 (0.385)	-0.115 (0.191)	-0.241 (0.387)	0.135 (0.761)	0.565 (0.378)	0.487 (0.792)	-0.341 (0.708)	0.078 (0.308)	-0.271 (0.734)	-0.547 (0.786)	0.035 (0.394)	-0.314 (0.814)
IR Holding	-0.613 (0.553)	-0.457 (0.551)	-0.447 (0.557)	-0.288 (1.103)	-0.039 (0.929)	-0.855 (1.152)	-1.212 (0.984)	-1.164 (0.943)	-1.041 (0.986)	-1.158 (1.161)	-0.823 (1.135)	-0.082 (1.252)
CA balance (%)	1.829 (2.112)	-3.576 (1.734)**	-1.766 (2.553)	-10.196 (5.822)*	2.668 (2.750)	-9.014 (6.155)	2.619 (3.222)	-3.720 (2.883)	-1.223 (4.058)	0.578 (3.724)	-6.740 (4.181)	-4.650 (4.727)
Gross debt (%)	0.007 (0.207)	0.834 (0.207)***	0.555 (0.253)**	0.811 (0.672)	0.217 (0.336)	-3.429 (0.736)***	0.815 (0.323)**	1.310 (0.335)***	1.408 (0.396)***	0.745 (0.356)**	1.474 (0.379)***	1.428 (0.428)***
Trade demand	1.757 (2.114)	3.655 (1.695)**	2.483 (2.528)	1.074 (6.054)	4.435 (2.470)*	8.780 (6.520)	0.916 (3.171)	2.930 (2.708)	1.286 (4.001)	0.581 (3.301)	2.441 (3.002)	0.096 (4.396)
Fin. Dev.	0.703 (0.429)	0.543 (0.353)	0.800 (0.477)*	2.988 (1.394)**	0.270 (0.708)	2.651 (1.563)*	0.680 (0.654)	0.624 (0.582)	0.787 (0.717)	0.656 (0.700)	0.551 (0.637)	0.811 (0.774)
KAO x CAB	-2.311 (2.573)		-2.356 (2.566)	9.098 (6.678)		13.527 (7.235)*	-2.940 (3.947)		-3.036 (3.911)	-2.082 (5.146)		-6.826 (5.516)
KAO x Debt	0.264 (0.272)		0.498 (0.278)*	-0.329 (0.729)		3.074 (0.777)***	-0.788 (0.442)*		-0.306 (0.456)	-0.350 (0.538)		0.417 (0.577)
KAO x Trade Demand	1.146 (2.579)		1.289 (2.565)	0.677 (6.375)		-2.259 (6.584)	2.066 (4.089)		2.192 (4.054)	2.826 (4.313)		2.799 (4.298)
KAO x FD.	-0.378 (0.546)		-0.321 (0.566)	-2.172 (1.509)		-2.865 (1.592)*	-0.213 (0.944)		-0.264 (1.014)	-0.379 (1.057)		-0.493 (1.133)
ERS x CAB		6.105 (2.807)**	6.216 (2.838)**		-12.242 (6.401)*	-13.217 (8.047)		6.491 (4.384)	6.428 (4.520)		9.900 (6.638)	13.485 (7.263)*
ERS x Debt		-1.090 (0.351)***	-1.230 (0.365)***		0.853 (0.723)	1.851 (0.832)**		-1.697 (0.546)***	-1.506 (0.587)**		-1.573 (0.648)**	-1.850 (0.710)***
ERS x Trade Demand		-1.976 (3.195)	-1.876 (3.212)		-6.687 (4.596)	-10.646 (5.239)**		-1.585 (5.337)	-1.431 (5.486)		-0.179 (6.200)	0.208 (6.310)
ERS x FD.		-0.276 (0.601)	-0.296 (0.628)		1.842 (1.509)	2.732 (1.724)		-0.131 (0.951)	-0.117 (1.064)		-0.121 (1.116)	-0.198 (1.241)
<i>N</i>	802	803	802	267	267	267	536	537	536	415	415	415
Adj. R2	0.48	0.38	0.49	0.21	0.23	0.25	0.50	0.52	0.51	0.32	0.35	0.34
# of countries	56	56	56	18	18	18	38	38	38	28	28	28
F-test, OMP	0.48	0.72	0.68	0.76	0.12	0.03	0.52	0.55	0.54	0.57	0.65	0.67
F-test, Macro	0.00	0.00	0.00	0.18	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F-test, Ext. Link	0.52	0.06	0.33	0.44	0.16	0.31	0.96	0.55	0.91	0.84	0.72	0.94
F-test, Inst. Dev.	0.04	0.02	0.02	0.10	0.91	0.15	0.52	0.53	0.51	0.64	0.66	0.58
F-test, Int. Terms	0.70	0.01	0.03	0.14	0.25	0.00	0.42	0.03	0.23	0.92	0.16	0.36
F-test, All	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The estimates for inflation volatility, trade competition, legal development, and currency and banking crisis are omitted from presentation due to space limitation.

**Table 3-2: Interactive Effects of OMP: Stock Market Price Changes, 1986-2012 (Type 2: China included)**

	FULL	FULL	FULL	IDC	IDC	IDC	LDC	LDC	LDC	EMG	EMG	EMG
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Exchange stability	-0.133 (0.084)	-0.383 (0.173)**	-0.432 (0.174)**	0.167 (0.130)	-0.139 (0.237)	-0.138 (0.240)	-0.226 (0.119)*	-0.866 (0.292)***	-0.900 (0.299)***	-0.273 (0.141)*	-0.831 (0.321)**	-0.934 (0.331)***
Financial openness	0.182 (0.161)	0.058 (0.078)	0.206 (0.163)	-1.453 (0.505)***	-0.349 (0.268)	-1.274 (0.509)**	-0.088 (0.226)	0.020 (0.089)	-0.034 (0.230)	0.107 (0.239)	0.189 (0.106)*	0.124 (0.243)
IR Holding	0.151 (0.192)	0.074 (0.193)	0.129 (0.197)	-0.120 (0.487)	-0.563 (0.471)	-0.053 (0.507)	0.303 (0.264)	0.226 (0.262)	0.274 (0.277)	0.333 (0.317)	0.248 (0.309)	0.415 (0.345)
CA balance (%)	1.369 (0.801)*	0.354 (0.622)	1.384 (0.922)	7.746 (3.316)**	-0.080 (1.226)	6.907 (3.336)**	0.981 (0.920)	-0.151 (0.845)	0.693 (1.105)	1.806 (1.007)*	-0.003 (1.118)	1.150 (1.273)
Gross debt (%)	0.123 (0.086)	0.248 (0.076)***	0.192 (0.101)*	0.372 (0.341)	0.339 (0.139)**	0.434 (0.344)	0.197 (0.098)**	0.299 (0.096)***	0.339 (0.121)***	0.211 (0.106)**	0.281 (0.105)***	0.331 (0.130)**
Trade demand	-0.937 (0.911)	-0.997 (0.551)*	-1.672 (1.001)*	-6.362 (2.628)**	0.692 (1.003)	-6.035 (2.741)**	-0.552 (1.022)	-1.808 (0.745)**	-2.003 (1.235)	-0.735 (1.051)	-2.065 (0.787)***	-2.705 (1.312)**
Fin. Dev.	-0.202 (0.156)	0.183 (0.127)	-0.089 (0.174)	2.731 (0.838)***	1.189 (0.274)***	2.550 (0.838)***	-0.104 (0.176)	0.094 (0.160)	0.049 (0.202)	-0.120 (0.183)	0.075 (0.166)	0.012 (0.208)
KAO x CAB	-2.158 (1.037)**		-1.859 (1.053)*	-7.695 (3.634)**		-8.367 (3.911)**	-1.690 (1.250)		-1.549 (1.288)	-2.599 (1.427)*		-2.921 (1.507)*
KAO x Debt	0.048 (0.114)		0.063 (0.116)	-0.050 (0.372)		-0.081 (0.395)	-0.138 (0.144)		-0.101 (0.147)	-0.111 (0.162)		-0.097 (0.168)
KAO x Trade Demand	1.219 (1.052)		0.975 (1.059)	7.094 (2.791)**		6.918 (2.771)**	0.316 (1.239)		0.375 (1.240)	0.668 (1.275)		0.925 (1.280)
KAO x FD.	0.486 (0.200)**		0.498 (0.209)**	-2.167 (0.878)**		-1.553 (0.915)*	0.086 (0.269)		0.151 (0.285)	0.219 (0.284)		0.239 (0.302)
ERS x CAB		-0.942 (0.982)	-0.365 (0.998)		2.442 (2.286)	3.585 (2.524)		0.000 (1.264)	0.495 (1.307)		0.234 (1.871)	1.680 (1.991)
ERS x Debt		-0.207 (0.138)	-0.181 (0.141)		-0.169 (0.270)	-0.148 (0.283)		-0.439 (0.186)**	-0.386 (0.190)**		-0.350 (0.219)	-0.312 (0.227)
ERS x Trade Demand		2.358 (0.989)**	2.012 (0.990)**		0.157 (1.537)	0.272 (1.520)		3.667 (1.581)**	3.412 (1.592)**		4.803 (1.733)***	4.476 (1.756)**
ERS x FD.		-0.134 (0.243)	-0.319 (0.252)		-1.112 (0.502)**	-0.926 (0.522)*		-0.405 (0.328)	-0.512 (0.347)		-0.253 (0.354)	-0.466 (0.379)
N	612	612	612	222	222	222	390	390	390	330	330	330
Adj. R2	0.08	0.07	0.08	0.26	0.24	0.24	0.07	0.07	0.07	0.09	0.10	0.10
# of countries	48	48	48	19	19	19	29	29	29	24	24	24
F-test, OMP	0.26	0.15	0.06	0.02	0.46	0.07	0.18	0.03	0.02	0.20	0.01	0.03
F-test, Macro	0.01	0.00	0.00	0.02	0.04	0.02	0.01	0.00	0.00	0.00	0.01	0.00
F-test, Ext. Link	0.50	0.16	0.22	0.00	0.04	0.01	0.83	0.05	0.26	0.68	0.02	0.07
F-test, Inst. Dev.	0.22	0.24	0.53	0.00	0.00	0.01	0.48	0.65	0.78	0.53	0.76	0.93
F-test, Int. Terms	0.01	0.11	0.02	0.03	0.09	0.04	0.32	0.09	0.22	0.17	0.08	0.08
F-test, All	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.01	0.02	0.01	0.01	0.01

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The estimates for inflation volatility, trade competition, legal development, and currency and banking crisis are omitted from presentation due to space limitation.

**Table 3-3: Interactive Effects of OMP: NEER, 1986-2012 (Type 2: China included)**

	FULL	FULL	FULL	IDC	IDC	IDC	LDC	LDC	LDC	EMG	EMG	EMG
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Exchange stability	0.572 (0.072)***	0.697 (0.148)***	0.663 (0.146)***	0.399 (0.088)***	0.850 (0.158)***	0.840 (0.153)***	0.720 (0.131)***	1.057 (0.315)***	0.863 (0.320)***	0.645 (0.176)***	0.834 (0.388)**	0.552 (0.403)
Financial openness	0.253 (0.124)**	0.139 (0.063)**	0.256 (0.125)**	-0.473 (0.215)**	-0.292 (0.115)**	-0.498 (0.205)**	0.658 (0.237)***	0.267 (0.105)**	0.652 (0.244)***	0.287 (0.249)	-0.021 (0.133)	0.256 (0.253)
IR Holding	0.415 (0.165)**	0.558 (0.169)***	0.488 (0.169)***	0.038 (0.308)	0.267 (0.283)	0.113 (0.300)	0.356 (0.309)	0.635 (0.301)**	0.465 (0.320)	0.420 (0.337)	0.595 (0.314)*	0.287 (0.364)
CA balance (%)	0.038 (0.654)	1.252 (0.597)**	0.481 (0.804)	-3.066 (1.656)*	3.247 (0.749)***	-1.596 (1.594)	0.744 (0.905)	0.242 (1.043)	0.345 (1.221)	0.580 (0.949)	1.440 (1.157)	1.571 (1.273)
Gross debt (%)	0.034 (0.074)	-0.145 (0.068)**	-0.063 (0.090)	0.599 (0.190)***	-0.346 (0.096)***	0.256 (0.191)	-0.160 (0.109)	-0.301 (0.108)***	-0.328 (0.135)**	-0.166 (0.119)	-0.324 (0.118)***	-0.257 (0.139)*
Trade demand	0.638 (0.609)	0.604 (0.466)	0.322 (0.711)	-1.348 (1.653)	1.408 (0.687)**	-0.982 (1.692)	1.440 (0.820)*	0.976 (0.776)	1.132 (1.126)	1.423 (0.823)*	0.601 (0.804)	0.274 (1.136)
Fin. Dev.	-0.683 (0.132)***	-0.368 (0.111)***	-0.709 (0.152)***	0.397 (0.397)	-0.548 (0.185)***	-0.142 (0.398)	-0.789 (0.183)***	-0.226 (0.175)	-0.525 (0.213)**	-0.857 (0.197)***	-0.326 (0.179)*	-0.628 (0.218)***
KAO x CAB	0.914 (0.845)		0.920 (0.852)	5.072 (1.878)***		5.526 (1.883)***	-0.017 (1.279)		-0.264 (1.305)	0.168 (1.398)		0.293 (1.443)
KAO x Debt	-0.155 (0.095)		-0.175 (0.097)*	-0.801 (0.206)***		-0.693 (0.206)***	0.140 (0.155)		0.066 (0.159)	0.028 (0.177)		-0.130 (0.185)
KAO x Trade Demand	0.784 (0.737)		0.632 (0.742)	3.050 (1.758)*		2.426 (1.675)	-0.653 (1.084)		-0.422 (1.100)	-0.197 (1.085)		0.233 (1.076)
KAO x FD.	0.661 (0.168)***		0.685 (0.174)***	-0.271 (0.427)		-0.419 (0.416)	0.602 (0.284)**		0.776 (0.299)***	0.860 (0.313)***		1.078 (0.336)***
ERS x CAB		-1.035 (1.089)	-0.959 (1.082)		-3.881 (1.500)**	-4.246 (1.570)***		0.424 (1.695)	0.497 (1.713)		-1.592 (1.902)	-2.005 (2.001)
ERS x Debt		0.159 (0.125)	0.227 (0.126)*		0.531 (0.184)***	0.579 (0.181)***		0.485 (0.208)**	0.453 (0.209)**		0.374 (0.252)	0.369 (0.267)
ERS x Trade Demand		0.991 (0.851)	0.742 (0.844)		-1.189 (1.066)	-0.857 (1.030)		-0.101 (1.699)	0.223 (1.703)		1.349 (1.845)	1.912 (1.866)
ERS x FD.		0.358 (0.213)*	0.033 (0.217)		1.368 (0.346)***	1.297 (0.340)***		-0.447 (0.352)	-0.742 (0.366)**		-0.113 (0.380)	-0.713 (0.412)*
<i>N</i>	660	660	660	297	297	297	363	363	363	288	288	288
Adj. R2	0.23	0.20	0.23	0.33	0.35	0.37	0.23	0.25	0.26	0.24	0.25	0.26
# of countries	45	45	45	19	19	19	26	26	26	19	19	19
F-test, OMP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.18
F-test, Macro	0.00	0.00	0.00	0.01	0.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00
F-test, Ext. Link	0.00	0.00	0.00	0.13	0.10	0.76	0.02	0.07	0.09	0.05	0.32	0.64
F-test, Inst. Dev.	0.00	0.00	0.00	0.61	0.01	0.94	0.00	0.41	0.05	0.00	0.17	0.01
F-test, Int. Terms	0.00	0.08	0.00	0.00	0.00	0.00	0.31	0.03	0.03	0.09	0.28	0.02
F-test, All	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

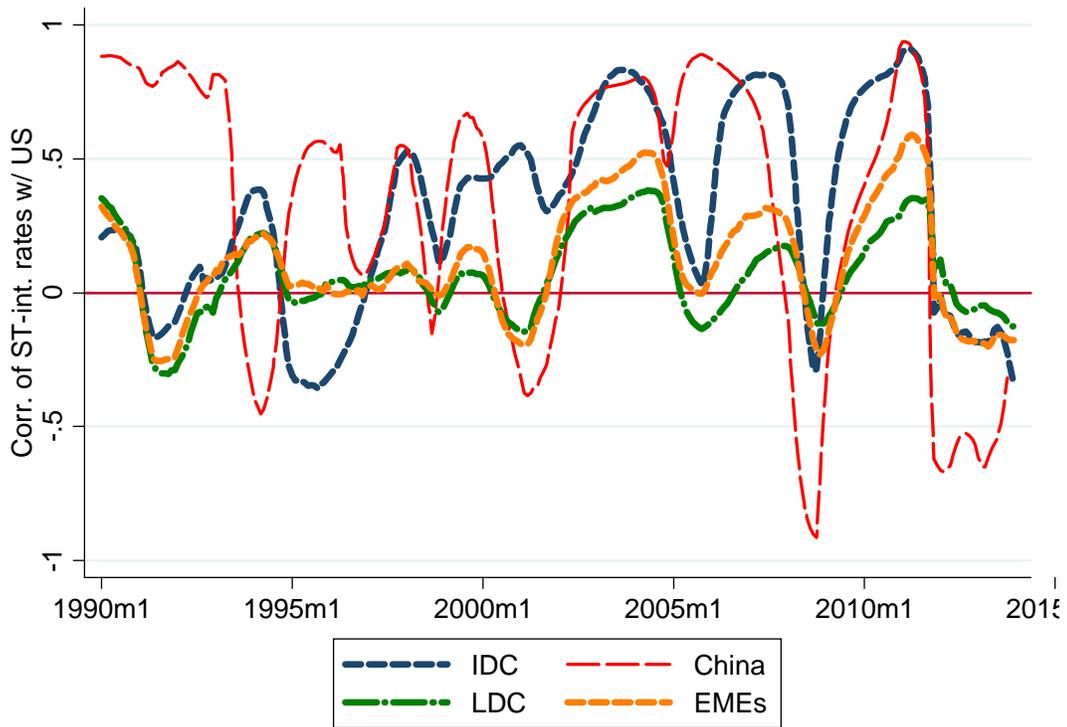
Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The estimates for inflation volatility, trade competition, legal development, and currency and banking crisis are omitted from presentation due to space limitation.

**Table 3-4: Interactive Effects of OMP: Sovereign Spread, 1986-2012 (Type 2: China included)**

	FULL	FULL	FULL	IDC	IDC	IDC	LDC	LDC	LDC	EMG	EMG	EMG
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Exchange stability	-0.088 (0.116)	0.098 (0.207)	0.121 (0.210)	0.030 (0.134)	0.501 (0.237)**	0.491 (0.239)**	-0.153 (0.244)	-0.264 (0.452)	-0.149 (0.486)	-0.120 (0.254)	-0.183 (0.449)	0.034 (0.491)
Financial openness	-0.120 (0.209)	-0.030 (0.113)	-0.126 (0.212)	-0.841 (0.338)**	-0.138 (0.175)	-0.806 (0.334)**	-0.614 (0.454)	-0.324 (0.226)	-0.639 (0.477)	-0.631 (0.450)	-0.202 (0.243)	-0.679 (0.475)
IR Holding	-0.247 (0.273)	-0.307 (0.276)	-0.279 (0.284)	-0.508 (0.492)	-1.032 (0.440)**	-0.469 (0.498)	0.136 (0.629)	0.074 (0.634)	0.178 (0.671)	-0.100 (0.642)	-0.239 (0.659)	-0.145 (0.714)
CA balance (%)	1.094 (1.257)	0.918 (0.986)	1.670 (1.419)	6.098 (2.630)**	2.203 (1.127)*	6.455 (2.601)**	-0.691 (2.188)	-1.383 (2.203)	-0.704 (2.669)	-0.628 (2.167)	-0.609 (2.353)	-0.152 (2.718)
Gross debt (%)	0.121 (0.136)	-0.026 (0.112)	0.011 (0.155)	0.427 (0.294)	-0.084 (0.144)	0.250 (0.304)	0.322 (0.236)	0.238 (0.220)	0.308 (0.274)	0.349 (0.234)	0.125 (0.222)	0.274 (0.272)
Trade demand	2.391 (1.383)*	2.447 (0.792)**	2.951 (1.529)*	-0.319 (2.524)	2.794 (1.031)**	0.909 (2.667)	2.132 (2.406)	1.380 (1.542)	1.540 (2.806)	2.200 (2.371)	1.849 (1.556)	2.374 (2.843)
Fin. Dev.	0.586 (0.242)**	0.162 (0.184)	0.371 (0.269)	1.978 (0.657)**	0.142 (0.277)	1.513 (0.668)**	0.681 (0.398)*	0.317 (0.351)	0.587 (0.442)	0.824 (0.401)**	0.411 (0.350)	0.753 (0.445)*
KAO x CAB	-1.278 (1.526)		-0.890 (1.579)	-6.430 (2.989)**		-5.756 (3.118)*	-0.551 (2.750)		-0.610 (2.920)	-0.023 (2.820)		0.372 (3.097)
KAO x Debt	-0.049 (0.166)		-0.062 (0.172)	-0.339 (0.318)		-0.371 (0.329)	-0.194 (0.308)		-0.179 (0.329)	-0.335 (0.317)		-0.381 (0.345)
KAO x Trade Demand	0.226 (1.557)		-0.617 (1.581)	2.650 (2.682)		1.855 (2.639)	0.069 (2.792)		0.078 (2.830)	0.009 (2.769)		-0.055 (2.819)
KAO x FD.	-0.227 (0.292)		-0.315 (0.305)	-1.496 (0.705)**		-1.662 (0.712)**	-0.444 (0.548)		-0.512 (0.592)	-0.647 (0.564)		-0.690 (0.612)
ERS x CAB		-1.921 (1.688)	-1.909 (1.752)		-4.142 (2.251)*	-2.886 (2.470)		0.175 (3.289)	0.018 (3.475)		-0.441 (3.475)	-1.224 (3.794)
ERS x Debt		0.224 (0.190)	0.256 (0.198)		0.434 (0.276)	0.499 (0.284)*		-0.067 (0.360)	0.018 (0.383)		0.016 (0.360)	0.177 (0.392)
ERS x Trade Demand		0.087 (1.340)	0.159 (1.354)		-1.658 (1.600)	-1.701 (1.608)		1.601 (3.068)	1.372 (3.101)		0.460 (3.153)	-0.054 (3.221)
ERS x FD.		0.526 (0.316)*	0.601 (0.330)*		0.969 (0.519)*	1.282 (0.533)**		0.126 (0.584)	0.259 (0.632)		-0.038 (0.581)	0.199 (0.639)
<i>N</i>	618	618	618	288	288	288	330	330	330	294	294	294
Adj. R2	0.12	0.13	0.13	0.28	0.28	0.30	0.06	0.06	0.05	0.05	0.04	0.03
# of countries	48	48	48	19	19	19	29	29	29	25	25	25
F-test, OMP	0.59	0.71	0.70	0.05	0.02	0.01	0.43	0.40	0.49	0.37	0.66	0.45
F-test, Macro	0.65	0.76	0.68	0.01	0.06	0.01	0.58	0.75	0.73	0.48	0.95	0.76
F-test, Ext. Link	0.15	0.01	0.12	0.21	0.01	0.63	0.62	0.57	0.69	0.64	0.49	0.70
F-test, Inst. Dev.	0.05	0.67	0.37	0.01	0.87	0.08	0.09	0.20	0.14	0.06	0.24	0.15
F-test, Int. Terms	0.85	0.32	0.52	0.06	0.18	0.04	0.89	0.98	0.99	0.66	1.00	0.95
F-test, All	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.03	0.05	0.12

Notes: The estimations are conducted with the robust regression method due to the existence of outliers. \*  $p < 0.1$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.01$ . The estimates for inflation volatility, trade competition, legal development, and currency and banking crisis are omitted from presentation due to space limitation.

**Figure 1: Correlations of the Short-Term Interest Rates with the United States**



**Figure 2: Correlations of the Long-Term Interest Rates with the U.S.**

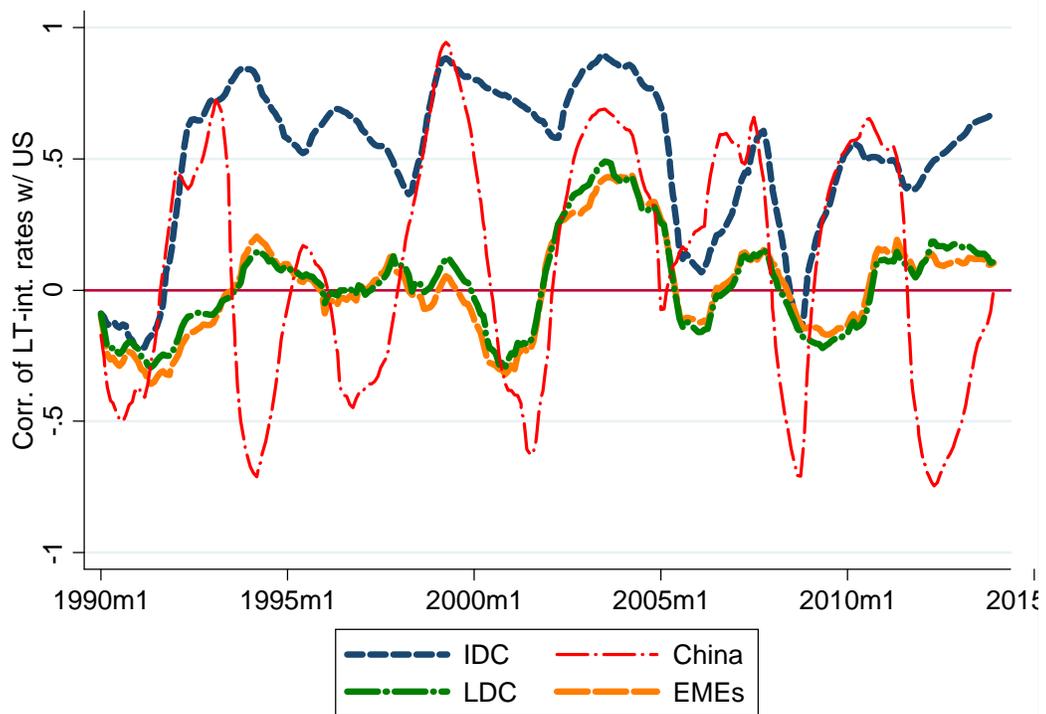
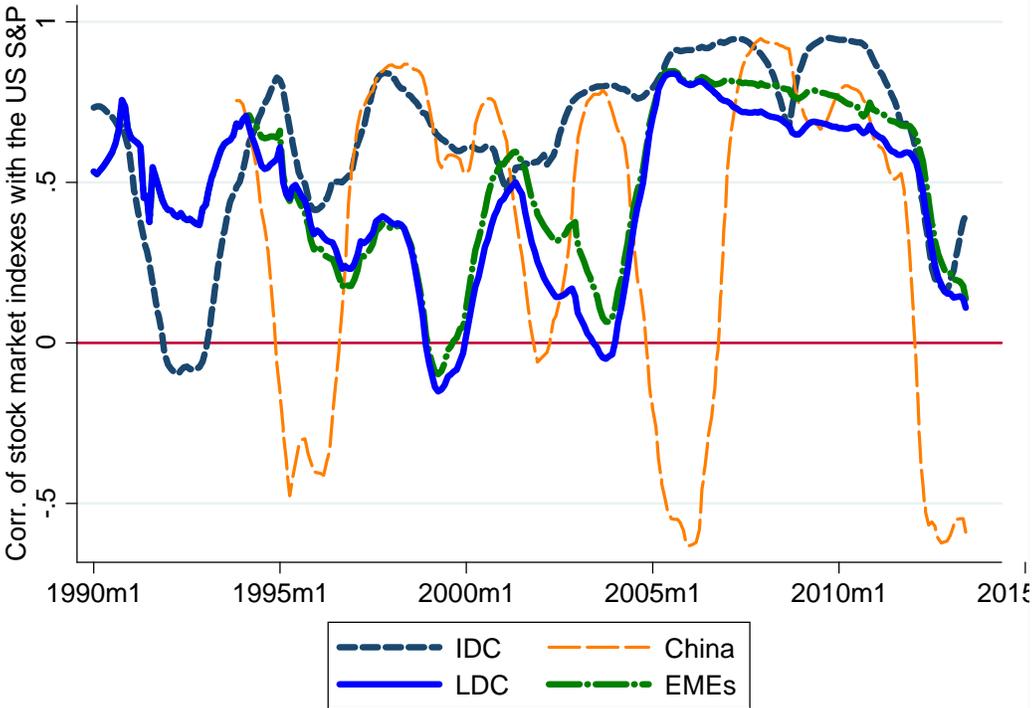
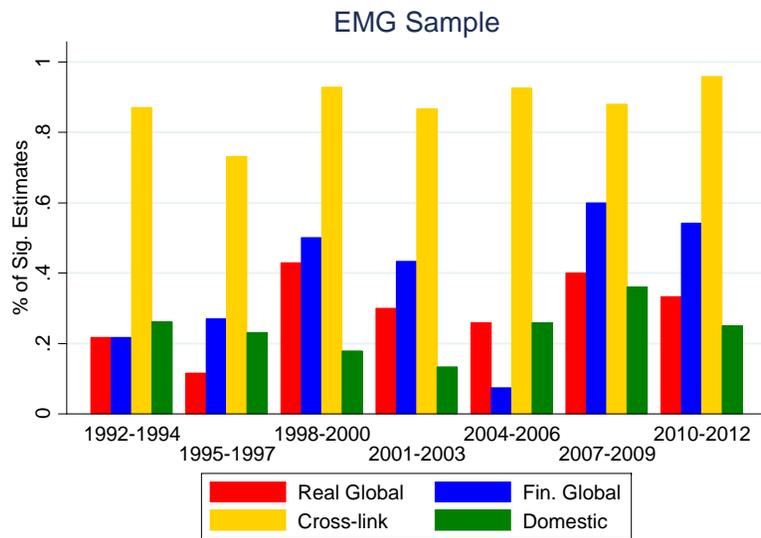
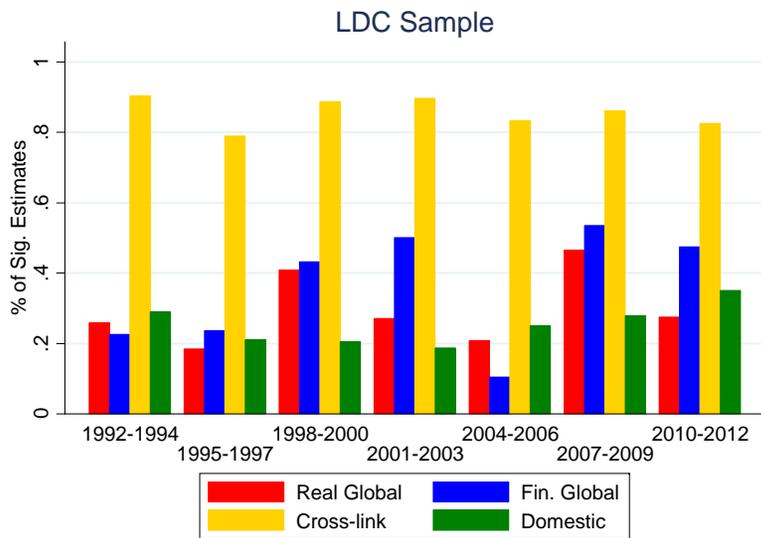
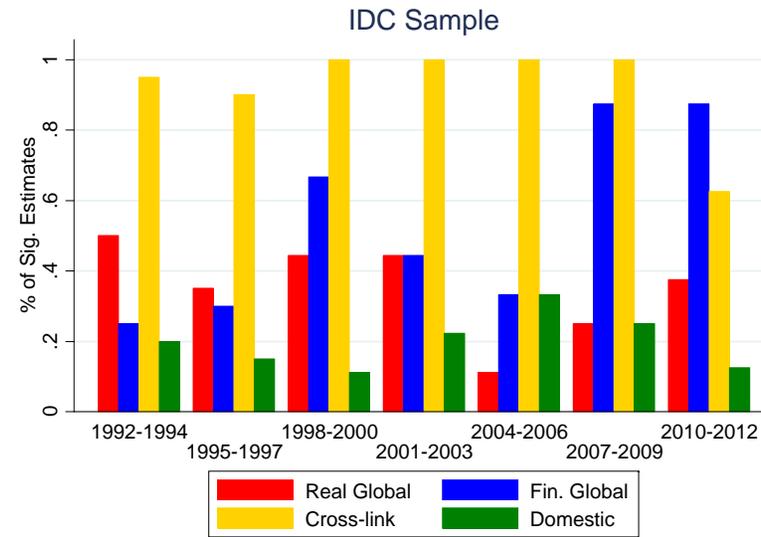
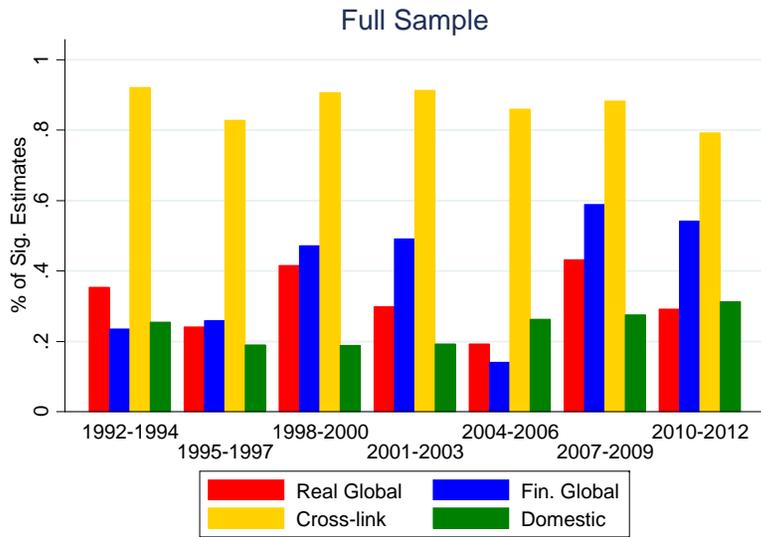


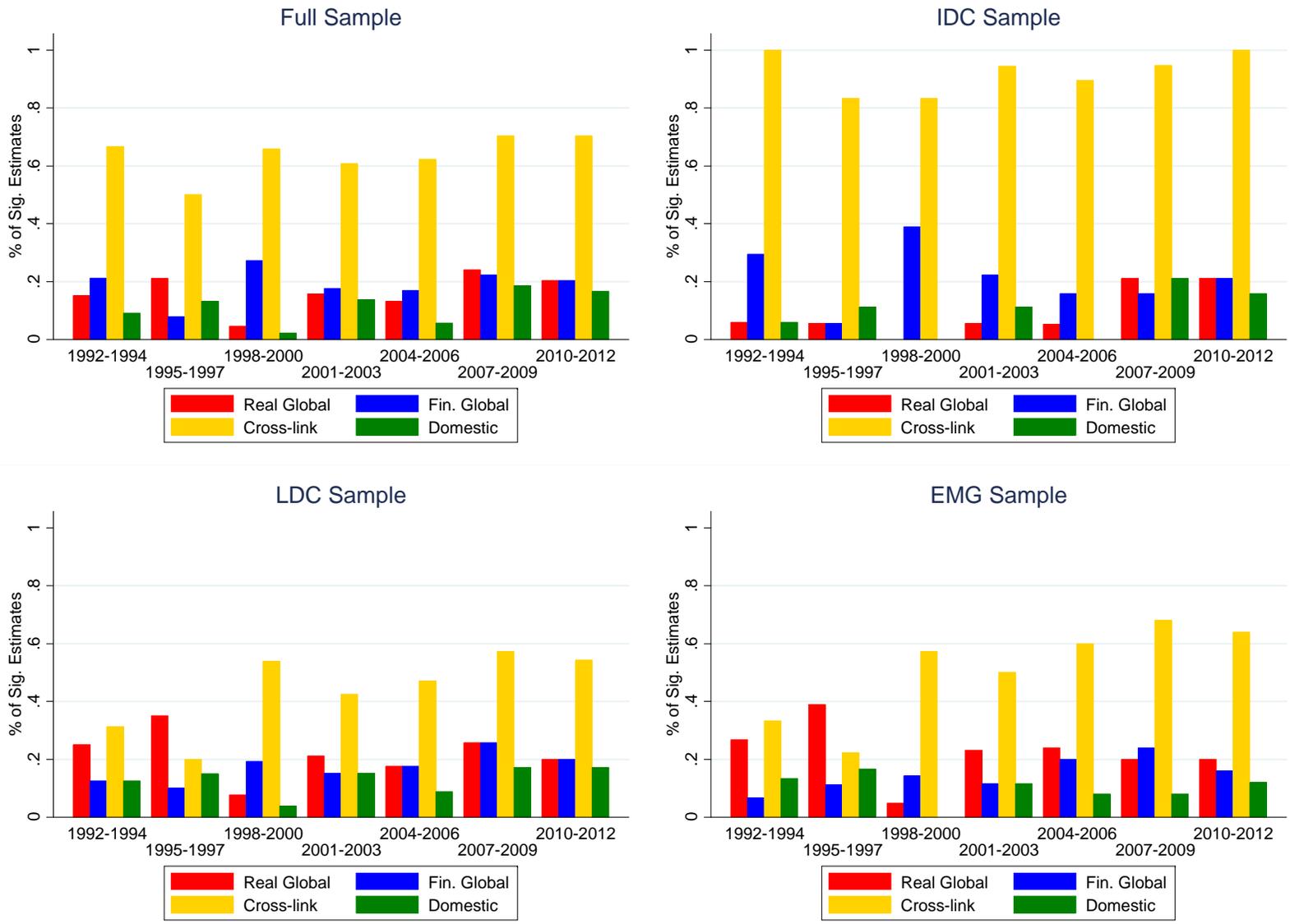
Figure 3: Correlations of the Stock Market Price Indexes with the U.S.



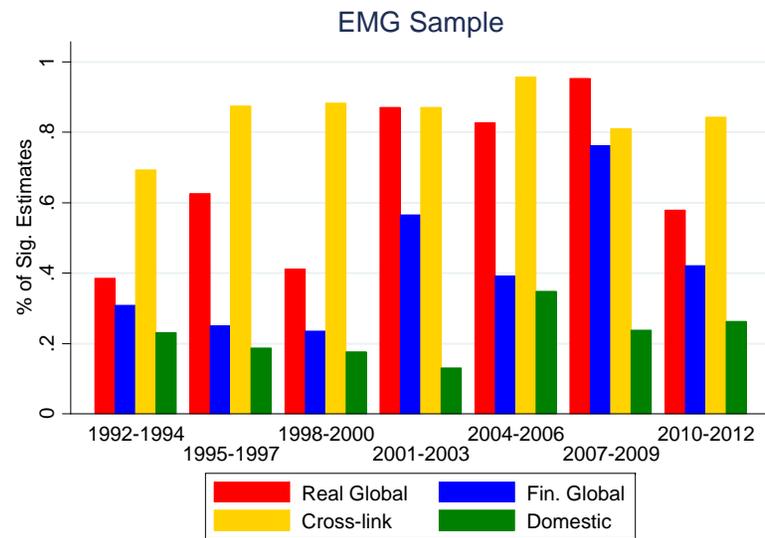
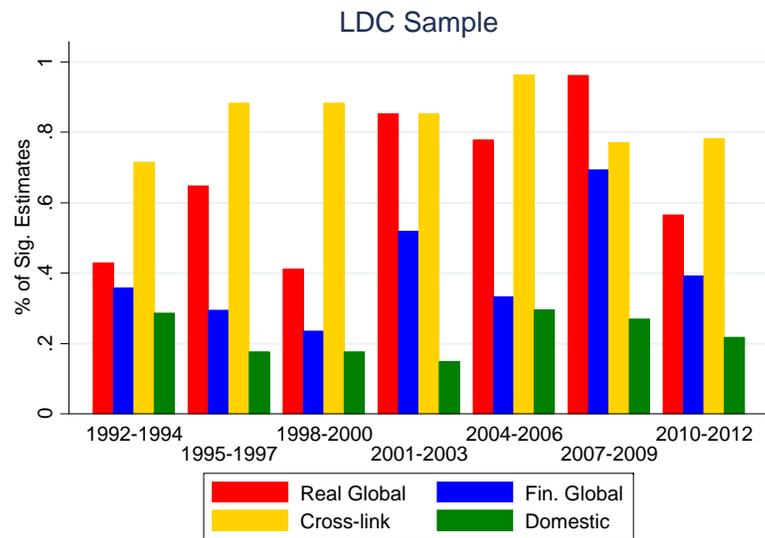
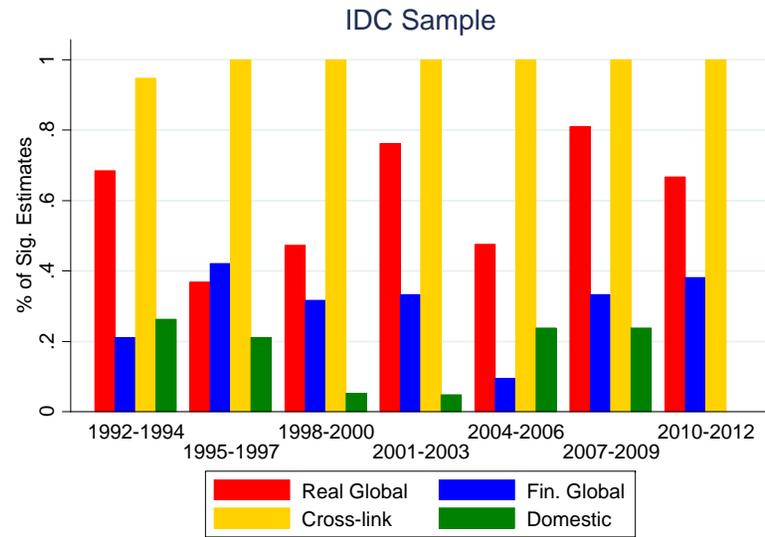
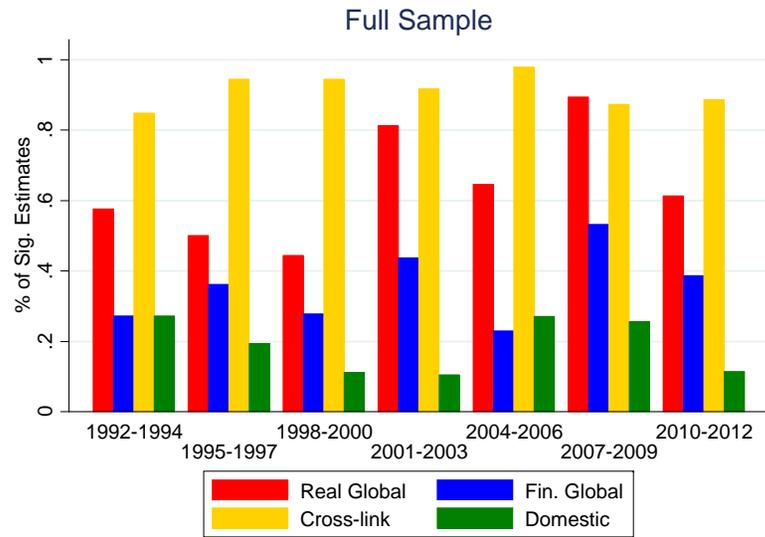
**Figure 4-1: Proportion of Significant F-Tests: Policy Interest Rate Model**



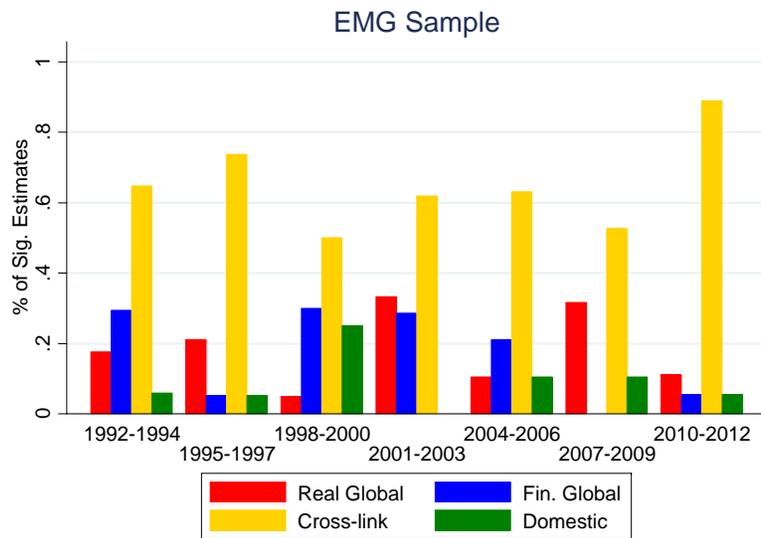
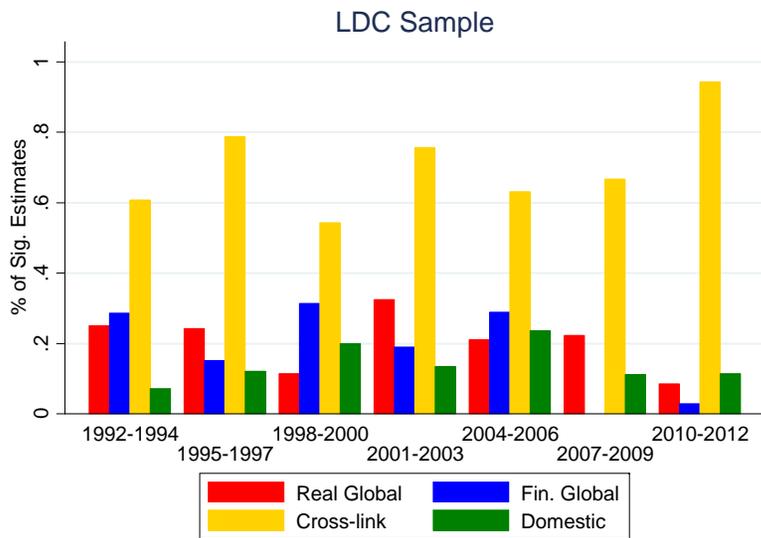
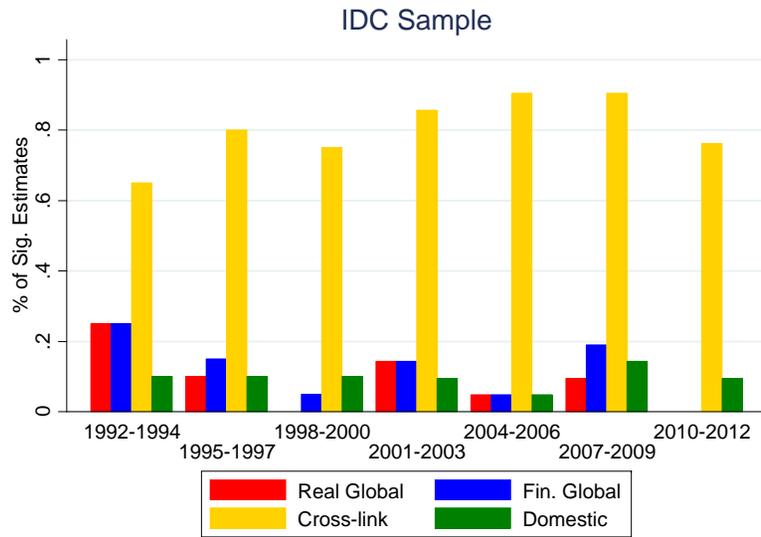
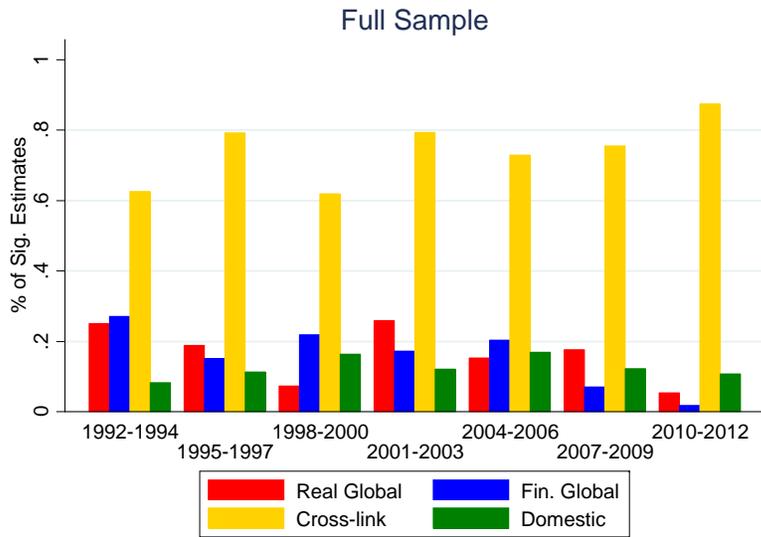
**Figure 4-2: Proportion of Significant F-Tests: Market Price Index Model**



**Figure 4-3: Proportion of Significant F-Tests: Sovereignty Spread Model**



**Figure 4-4: Proportion of Significant F-Tests: NEER Model**



**Figure 5: Contribution to Adjusted R2 of Adding China as a Major Economy**

