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IMBALANCES***

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**CERC Working Paper 20  
March 2012**

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# Financial Repression and External Imbalances

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March 19, 2012

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## Abstract

This paper examines how repressive financial policies influence external balances. We argue that financial repression holds back financial development and distorts the process of structural transformation by constraining the service sector and promoting the manufacturing sector, thereby affecting external balances. Using a panel data set of a large number of countries, we find that financial repression has a significant and positive effect on the current account. This result holds for several additional robustness checks, including using medium-term determinants of the current account, alternative measures of external balances, and alternative measures of financial repression. We also show that financial repression mainly affects external balances through its effect on economic structure. When analyzing different repressive financial policies, we find that interest rate controls and capital account controls are the main policies contributing to external imbalances. Furthermore, financial repression has a larger effect on the current account in East Asia than the rest of the world.

*JEL Classification:* F32; F41

*Keywords:* External imbalances; Current account; Financial repression; Financial development; Institutional development

# 1 Introduction

During the last decade, the emergence of very large external imbalances has been a source of heated international debate. The U.S. has come to face large and persistent current account deficits while East Asian countries, especially China, have exhibited large current account surpluses. However, this is not the first time in history that external imbalances have put pressure on policy makers around the world. In the 1970s, external imbalances constituted one of the main reasons behind the end of the Bretton Woods system and in the 1980s, increasing imbalances resulted in the Plaza and Louvre agreements which focused on exchange rate alignments.

Increasing global imbalances have by some been seen as precursory for the global financial crisis that started in the US in 2007 and later spread to, in particular, Europe. While some suggest that such imbalances may be due to the U.S. ability to provide financial assets for global savers (e.g. Blanchard, 2007; Caballero et al., 2008), other point towards the lower investment levels and a saving glut in East Asia after the Asian Financial Crisis in 1997-1998 (e.g. Bernanke, 2005). Whatever the reason behind the large external imbalances of many countries during the last decade, most observers would most likely agree that these imbalances are themselves a result of internal economic distortions. Typical examples of such domestic imbalances include very low savings in the U.S., at least partly a result of negative public spending, and very high savings in China, at least partly due to a weakly developed welfare system (Blanchard, 2007). In this paper, we suggest that financial repression constitutes one important source of distortions that affect external balances.

The objective of this paper is to analyze the relationship between repressive financial policies and external balances. We believe that financial repression affects external balances primarily through distortions in the domestic economic structure. Financial repression results in a distorted structural transformation with a constrained service sector and the promotion of the domestic industry, especially the manufacturing sector (Johansson and Wang, 2011). Since the manufacturing sector typically constitutes an important part of ex-

ports, countries that impose repressive financial policies are thus more likely to end up with current account surpluses. A second channel through which financial repression may affect external balances is the level of financial development. Low financial development means lower levels of transfers of foreign assets, which in turn lowers domestic consumption, thus leading to an increase in the current account.

Using a panel for a large set of countries, we show that financial repression has a significant and positive effect on the current account. This finding is robust when controlling for a large number of potential determinants of external imbalances. It also holds for several additional robustness checks, including focusing on longer-term determinants of the current account, alternative measures of the external imbalances, and alternative measures of financial repression. We also show that domestic structural imbalances function as an important mechanism for the effect of financial repression on external balances. We then look at different types of repressive financial policies and find that it is primarily interest rate controls and capital controls that are positively associated with current account surpluses. To shed light on the saving glut hypothesis for global imbalances, we focus on the case of East Asia. We find that institutional quality and financial development do not have a significant effect on East Asian current accounts. This result refutes the argument that better financial development and institutions by themselves would lead to lower current account surpluses in East Asia. Instead, financial repression has a larger effect on the current account in East Asia than the rest of the world. When excluding China from the group of East Asian countries, we find that the effect is still larger than for the whole sample. This indicates that financial repression has a stronger effect on external balances in East Asia even when we exclude the special case of China.

This paper relates to two strands of research literature. One set of studies explores determinants of the current account or alternative measures for external balances (e.g. Chinn and Prasad, 2003; Gruber and Kamin, 2007; Choi et al., 2010; Fratzscher et al., 2010). That research provides a range of potential explanatory variables for explaining the global pattern

of external balances. The other set of studies emphasizes the effects of financial repression on the economy (e.g. McKinnon, 1973; Shaw, 1973; Roubini & Sala-i-Martin, 1992). Recent research in this literature has focused on the distortive effects that repressive financial policies may have on economic imbalances (Johansson and Wang, 2011). However, to the best of our knowledge, this is the first study that empirically links financial repression to external imbalances.

The rest of the paper is structured as follows. The next section contains a discussion of theoretical issues related to modeling external imbalances. Section 3 discusses the data set and introduces the empirical methodology. Section 4 presents the results from the benchmark regression model and then discusses effects of institutions on external balances. A number of robustness checks are presented in Section 5, including using five-year averages instead of annual data, alternative measures for external balances, and alternative measures for financial repression. Then, Section 6 discusses potential channels through which financial repression influences external balances and also analyzes the impact of different individual repressive financial policies on external balances. Finally, Section 7 concludes the study.

## **2 Theoretical Discussion**

The representative agent neoclassical model holds that the differences in rates of time preference between domestic and foreign agents explain persistent current account imbalances (e.g. Helpman and Razin, 1982; Daniel, 1997). That is, precautionary savings result in the more patient country accumulating wealth at the expense of the more impatient country, as seen in its increasing current account surplus. Another approach to analyzing the behavior of current accounts is one that relies on consumption smoothing. Studies using this approach typically assume perfect capital mobility and consumption smoothing behavior to show that the current account act as a form of buffer for consumption smoothing when the economy experiences shocks to investment, output and government expenditure (e.g. Ghosh, 1995;

Ghosh and Ostry, 1995).

The intertemporal approach states that the current account simply reflects movements in output, investment or government expenditures that deviate from their expected paths. Consumption smoothing means that temporary shocks will result in changes in the current account, while permanent shocks will not (e.g. Obstfeld and Rogoff, 1995). Glick and Rogoff (1995) takes the intertemporal approach to the data and show that the current account respond more to country-specific shocks than to global shocks, results that support the intertemporal approach to the current account. Focusing instead on the behavior of investments and the current account in a response to productivity shocks, Nason and Rogers (2002) evaluate the intertemporal model empirically. They find that the response of the current account to country-specific shocks is persistent, a result that is not in agreement with the intertemporal, small open economy model.

In an influential paper, Chinn and Prasad (2003) make use of previous research to build an empirical model which they use to analyze potential determinants of the current account. Building on Chinn and Prasad's study, Gruber and Kamin (2007) incorporate the impact of financial crises on current accounts. While this extension explains current account surpluses in East Asia fairly well, it fails to provide an adequate explanation to the persistent current account deficit in the U.S. In an attempt to improve the understanding of the existence of large and persistent external imbalances, we include repressive financial policies as another potentially important determinant of the current account.

To the best of our knowledge, this is the first study that emphasizes the relationship between financial repression and external imbalances. The term financial repression was first used by McKinnon (1973), who defined it as financial policies by the government meant to regulate interest rates, set reserve requirement on bank deposits, and allocate resources. Repressive financial policies are believed to hinder financial deepening and lower the efficiency in the financial system and thus hold back economic growth (McKinnon, 1973; Shaw, 1973). Supporting this argument, Pagano (1993) finds that policies such as interest rate

controls and reserve requirements constrain financial resources that can be used for financial intermediation. Roubini and Sala-i-Martin (1992) provide a theoretical model and empirical results that show the negative effect of financial repression on long-term economic growth. Similarly, King and Levine (1993) present a model in which financial sector distortions have a negative impact on the rate of innovation, which in turn leads to lower economic growth.

Why would repressive financial policies have an effect on external balances? We believe that this effect works through two different channels. First, financial repression will result in structural imbalances, which in turn leads to external imbalances. In a previous paper, we develop a model for structural balances that incorporates financial repression (Johansson and Wang, 2011). The main outcome of the model, also supported by empirical evidence, is that financial repression results in structural imbalances due to the industry sector being promoted at the expense of the service sector. We build on that analysis in this paper. Since repressive financial policies lead to structural imbalances in which the industry sector grows much faster than in a balanced economy, we argue that the expansion of manufacturing, which constitutes a significant portion of industry output, will lead to exports increasing much faster than imports. This will in turn lead to a current account surplus that may persist as long as the government continues its repressive policies in the financial system.

Second, repressive financial policies may affect external balances through financial development. Previous research shows that financial repression can have a negative effect on financial development. For example, King and Levine (1993) show how repressive financial policies may affect financial development negatively. Also, Ang and McKibbin (2007) find evidence of how repressive financial policies affect financial deepening negatively. Building on this relationship between financial repression and financial development as well as research suggesting that lower levels of financial development limits investment opportunities and encourages capital outflows (e.g. Ju and Wei, 2006), we thus argue that financial repression lowers financial development, which in turn affects external balances.

The discussion above has shown that there is a potentially important relationship be-



tween repressive financial policies and external imbalances. Our main hypothesis is that financial repression affects external balances positively. We also hypothesize that external balances are affected by financial repression through the mechanisms of economic structure and financial development.

### 3 Data and Econometric Framework

This study focuses on the impact of financial repression on external balances. Our primary method for analyzing this consists of panel regressions with measures of the external balance as the dependent variable. After controlling for a series of explanatory variables identified in the literature, we specify our regression model as:

$$EXBALANCE_{it} = \beta_0 + \beta_1 FREP_{it} + \beta_2 X_{it} + \alpha_i + \lambda_t + \xi_{it}, \quad (1)$$

where  $EXBALANCE_{it}$  is the measurement of the external balance of country  $i$  at year  $t$  proxied by either the ratio of current account to GDP or the ratio of the balance of trade in goods and services to GDP.  $FREP_{it}$  is the level of financial repression of country  $i$  in year  $t$ .  $X_{it}$  is a vector of control variables that influence the external balance that includes: the net foreign asset position, measured as the ratio of net foreign assets to GDP<sup>1</sup>; the government budget balance, measured as the ratio of the general government budget surplus or deficit to GDP; relative income, measured as the ratio of per capita GDP to the US per capita GDP; the square term of relative income; the growth rate of per capita GDP; the two demographic factors young dependency ratio and old dependency ratio, defined as the ratio of dependents, i.e. people younger than 15 and older than 64, to the total population; and openness, measured as the ratio of export and import to GDP. We also include fixed effects:  $\alpha_i$  is the country-specific effect,  $\lambda_t$  is the year effect. Finally,  $\xi_{it}$  is an unobserved error term that changes across time and countries.

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<sup>1</sup>To avoid correlation with the dependent variable, we use the lagged value of the net foreign asset position (e.g. Gruber and Kamin, 2007).

We collect data for 66 countries from 1981 to 2005. Table 1 reports the summary statistics. The definition of the variables and the data source are listed in Appendix 1. We also compare the non-weighted average of the main variables in East Asian countries and those in other countries in the last two columns of the table. Here, the focus is on the period 2000-2005, as that is the period in our full sample during which global imbalances grew exceptionally fast.

The measure we use for financial repression is taken from Abiad et al. (2008) and consists of an index based on seven different repressive financial policies: credit controls; interest rate controls; barriers to entry in the financial sector; state ownership in the banking sector; supervision of the banking sector; capital account restrictions; and repression of security markets. In Abiad et al. (2008), a country is given a score along each of these dimensions. The score is graded from 0 to 3, with 0 corresponding to the highest degree of repression and 3 indicating full liberalization. Before including the different measures in our analysis, we divided each of them by 3, and then subtracted the score from 1, thereby normalizing each variable into the interval of 0 to 1. Thus, the higher the score, the higher the degree of financial repression.

Compared to other countries, East Asian countries as a group are characterized by a larger current account surplus, a larger goods and services trade surplus, a higher level of financial repression, higher levels of the industry-service ratio, a higher level of GDP growth, a higher level of trade openness, a lower level of per capita GDP, a lower dependency ratio, and a lower level of institutional quality. These differences indicate that it is important to also carry out an analysis focusing on the potential difference in the relationship between financial repression and external balances in East Asia and the rest of the world.

[TABLE 1 HERE]

## 4 Empirical Analysis

### *4.1 The Benchmark Model*

We first estimate the results of the benchmark model using the full-sample panel data for each country. Columns 1 to 3 of Table 2 report the results from the basic model which contains the variables typically found in the literature on external balances. We use pooled OLS, fixed effect and random effect regressions to estimate the model. All the estimated coefficients have the expected sign and all variables, except the old dependency ratio, are significant at the 1 percent level. Consistent with the data description in Table 1, larger current account balances (positive value indicating a current account surplus) are associated with a higher net foreign asset position, a higher government budget balance, an early stage of economic development, a lower share of youth in the population, and a higher openness ratio.

Next, we introduce the proxy for financial repression in the benchmark model and present the new regression results in columns 4 to 6. The estimated coefficient for financial repression is positive and significant at the 5 percent level. After controlling for country and year effects, both the magnitude and significance of financial repression are enhanced. Its coefficient is now significant and positive at the 1 percent level and the magnitude is increased by over 2 percentage points. Keeping other things unchanged, a unit increase in financial repression will result in a 3.3-3.8 percentage increase in the current account balance.

[TABLE 2 HERE]

### *4.2 Effects of Institutional Quality*

One explanation for the attractiveness of developed markets to foreign investors is their government institutions, which protect the rights of foreign investors. Similarly, a favorable institutional environment in developing countries will promote production and attract foreign direct investment. In order to capture the effect of institutional quality on capital flows

and the current account, we include the Political Risk Service (PRS) index drawn from the International Country Risk Guide (ICRG).<sup>2</sup> PRS is an index that is composed of twelve political risk components with different ratings: government stability (12); socioeconomic conditions (12); investment profile (12); internal conflict (12); external conflict (12); corruption (6); military in politics (6); religious tensions (6); law and order (6); ethnic tensions (6); democratic accountability (6) and bureaucracy quality (4). We normalize the PRS index into the interval of 0-1 by dividing the total rating with 100.

Since the PRS index is only available from 1984, column1 of table 3 replicates the fixed effect model from column 5 of table 2, but estimated over 1984-2005. This regression functions as a benchmark against which we then compare the new estimation results. Overall, the estimates do not change much when we compare the new baseline model results to the ones in Table 2. Sign and significance holds up, although the positive coefficient on financial repression becomes somewhat larger. We introduce the government institutional variable (the PRS index) in the benchmark model in column 2. Consistent with the results in Chinn and Ito (2007) and Gruber and Kamin (2007), a lower current account balance is associated with better institutional quality.

Next, we focus on individual measures of institutions in the PRS index. We test each of the components in the index and find that only two of them have a significant effect on the current account. Investment profile and democratic accountability are both negatively associated with the current account.

[TABLE 3 HERE]

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<sup>2</sup>The PRS index from ICRG is a commonly used proxy in the literature on institutions. It has been used to analyze the current account by Chinn and Ito (2007). An alternative measure for institutions is that of Kaufmann et al. (2005) as used by Gruber and Kamin (2007). However, that measure does not consist of annual observations.

## 5 Robustness Checks

### *5.1 Medium-Term Determinants*

As mentioned by Chinn and Prasad (2003) and Chinn and Ito (2007), one potential problem when analyzing developing countries is the possibility of measurement error in annual data. To mitigate this problem, we follow Chinn and Prasad (2003) and construct a panel that contains non-overlapping five-year averages of the data for each country. By doing so, we are able to reduce short-term variations and identify the medium-term determinants of the current account.

We perform the same modeling procedure as before, but estimate the model using five-year average data. Column 1 of Table 4 presents the results for the benchmark model. Column 2 shows the regression results when we include financial repression as an explanatory variable. Column 3 introduces institutional quality, and column 4 examines the effect of individual political institutional variables. The estimation results show that a medium term higher current account balance is associated with a higher initial net foreign asset position, a lower youth dependency ratio, higher trade openness, and lower institutional quality. The significant positive impact of financial repression on the current account does not change when we aggregate the data into five-year periods. Keeping other things unchanged, a higher level of financial repression will result in a higher current account balance. More specifically, a unit increase in financial repression will lead to a 4.4-5.6 percentage point increase in the current account balance.

[TABLE 4]

### *5.2 Alternative Measure of External Imbalances*

Since goods and services constitute the most important parts of current account, we use the balance of goods and services as an alternative measure of external balances to check the robustness of our hypothesis. The dependent variable in Table 5 is the external balance

of goods and services. Again, we examine the relationship between financial repression and external balances by using two different data frequencies: annual data (columns 1 to 3) and five-year average data (columns 4 to 6).

Looking at the estimation results, the coefficients of financial repression in the two sets of regressions are positive and significant, indicating that financial repression raises the external imbalance of trade in goods and services not only in the short term but also in the medium term. As before, political institutional quality is significant and negatively related to external balances. A higher imbalance in trade of goods and services is associated with a higher government budget balance, higher trade openness, lower GDP growth and lower dependency ratios.

Net foreign assets are positively related to external imbalance but become insignificant when we control for financial development in the full sample regression. Net foreign assets are insignificant in the five-year average regressions. The proxy for financial development is negative in the full sample regression, but only significant at the 10 percent level. This may at least partly be attributed to the correlation between net foreign assets and financial development since a country's net foreign asset is directly related to the level of financial development.

[TABLE 5]

### ***5.3 Alternative Measure of Financial Repression***

Typically, economies that are financially repressed are characterized by artificially low real interest rates. Governments in financially repressed economies tend to set deposit and lending rates below the level of the inflation rate, which will reduce the financing cost for targeted industries. Therefore, as a robustness check, we follow related studies and use the real interest rate as a proxy for financial repression (e.g. Agarwala, 1983; Gelb, 1988; Easterly, 1992; Roubini and Sala-i-Martin, 1992).

Table 6 presents the results using the real interest rate as a measure of financial repression. As opposed to when using the financial repression index as a proxy for financial repression, a lower real interest rate indicates a higher level of financial repression. Again, we see that financial repression contributes to increasing the current account by distorting the process of structural change. Supporting our earlier findings, a higher current account balance is associated with a higher net foreign asset position, an early stage of economic development, high trade openness, low institutional quality, and a low level of financial development. When averaging the data, we find that a 1 percent decrease in the interest rate (i.e. a higher level of financial repression) leads to a 0.081 percentage point increase in the current account balance. A 1 percent increase in institutional quality and financial development results in 0.104 percentage point and 0.042 percentage point decreases in the current account balance, respectively.

[TABLE 6]

## 6 Potential Mechanisms

In this section, we examine two different mechanisms of financial repression as well as the impact of individual financial repressive policies on external balances. Understanding in what way financial repression affects external balances is important when setting policies to handle external imbalances. Furthermore, analyzing the effect of individual financial repressive policies will shed light on how to proceed with financial reforms.

### *6.1 The Mechanism of the Effect of Financial Repression*

As mentioned in the introduction, we believe that the influence financial repression has on the domestic economic structure functions as a main channel through which external balances are affected by repressive financial policies. The existence of financial repression inhibits the process of economic structural change and results in a higher ratio of industry

to services, where manufacturing takes up a significant share of the industry sector. Due to distorted factor prices, the products of the manufacturing industry are priced at low levels relative to international prices. This in turn results in the accumulation of trade surpluses over time. A second potential channel through which financial repression affect external balances is that of financial development. It is generally argued that financial development will enhance the appeal of domestic financial markets and thus attract more foreign assets (Cabellero et al., 2008; Mendoza et al., 2007, Forbes, 2010). A diversity of different financial assets will also motivate borrowing and lending and promote consumption. Therefore, financial development is believed to be negatively associated with the current account. Following Aghion et al. (2009), Gruber and Kamin (2007) and Chinn and Ito (2007), we use the ratio of private credit to GDP as a proxy for financial development. To reduce the correlation and avoid the problem of endogeneity, we include the lag term of the ratio of private credit to GDP in the regression model.

To identify whether financial repression works through one or both of these two channels, we run new regressions using the five-year average of each variable. Table 7 presents the results. In the first column, we again run the benchmark model and include financial repression as the dependent variable. As before, financial repression has a significant and positive effect on the current account. We then include the interactive variables of financial repression and each of the two channels. Column 2 shows that the effect of the interactive variable financial repression\*economic structure is positive and significant. In column 3, we also add the interactive variable financial repression\*financial development, finding that it is positive but insignificant. In columns 4 and 5, we then run the same regression but also include financial repression on its own. The results show that the effect of the individual variable financial repression is no longer significant. However, the coefficient for the interactive variable financial repression\*economic structure is still positive and significant. These results show that financial repression affects external balances through its influence on economic structure.



[TABLE 7]

## *6.2 Effects of Individual Repressive Policies*

The empirical results so far suggest that financial repression hinders the process of structural transformation, leading to structural imbalances. Such domestic structural imbalances in turn result in external balances. It has been argued that central planners devise and adopt repressive financial policies, such as interest rate restrictions, credit allocation regulations, capital account controls, and barriers to entry in the banking sector in order to achieve faster economic growth (Hellmann et al., 1998, 2000). Under incomplete information, such policies can be Pareto improving through a direct allocation of limited financial resources and resolution of the problems of market failure and financial instability.

An examination of individual policy variables will shed light on the impact of specific policies and may thus have significant policy implications. Given the potential issue of multicollinearity among these individual policy variables (Abiad et al., 2008), we will not include all seven variables in a single regression. We will instead run separate regressions in which we include these variables one by one.

Table 8 presents the results from the five-year average fixed-effect estimations. The coefficients for credit controls, the share of state-owned banks, barriers of entry into the banking sector, inefficiency of bank supervision, and repression of security markets are positive but insignificant. The coefficients for capital account controls and interest rate controls are positive and significant. Thus, keeping other things unchanged, liberalizing the interest rate and the current account will help alleviate domestic industrial structural imbalances and thereby also decrease the size of external imbalances.

[TABLE 8]

## 7 A Closer Look at External Imbalances in East Asia

Over the past decade, one critical issue in international economics has been the unprecedented current account deficit in US combined with long-lasting current account surpluses in East Asian countries, perhaps most clearly shown by the very large surplus in China. The so-called global saving glut explanation views excess saving in East Asian countries, driven by increased savings and declining investments after the Asian financial crisis, as a main cause of the U.S. current account deficit (e.g. Bernanke 2005; Clarida, 2005).

Furthermore, Bernanke (2005) emphasizes the importance of greater financial development to remedy the global saving glut in the long run by inducing a decline in the saving rate in emerging Asia. This argument ignores the impact of financial repression on the domestic industrial structure. As discussed earlier, financial repression may influence the current account balance through two channels. The first channel is financial development which helps attract foreign assets and domestic consumption. The second channel, which we believe to be much more important, is structural transformation. A gradual and prudent liberalization of repressive financial policies will facilitate the process of economic transformation, accompanied by a rising service sector share and a declining industry sector share.

We explore Bernanke's argument and our hypothesis in this section. Column 1 in Table 9 presents the results of the baseline model. We then drop the East Asian countries from our sample and run a new regression with the results shown in column 2. The estimated coefficient of financial repression declines by 1 percentage point. Furthermore, the coefficients for institutional quality and financial development are both negative and significant. This finding supports the argument that better institutional quality and financial development will help reduce current account imbalances.

Is the same argument applicable to East Asia? Our results indicate that it is not. Column 3 in Table 9 shows that both institutional quality and financial development are statistically insignificant when we focus on the countries in East Asia. An increase in institutional quality or financial development in East Asian countries would therefore most

likely not result in a significant shift in global imbalances. On the other hand, the coefficient of financial repression increases by more than 4 percentage points, which indicates that the impact of financial repression on external balances is much higher in East Asia than in the rest of the world. It is therefore plausible to assume that financial repression is an important contributor to global imbalances. Since current account surpluses have increased sharply since 2000, and since China constitutes a main factor in the overall increase in the external imbalances of East Asia, it is important to control for the possibility of China serving as an outlier that dominates the estimation results. We therefore drop China from the group of East Asian economies and run the regression one more time. The estimation results in column 4 show that our results for East Asia hold also when excluding China from the group.

[TABLE 9]

## 8 Concluding Remarks

Global current account imbalances still constitute a source for heated debate in the international community. Building on different strands of literature, this paper focuses on the question of whether financial repression has an effect on external balances.

Our main hypothesis is that financial repression may affect external balances through two channels: through financial development, by attracting foreign assets and thus promoting domestic consumption, and through structural transformation, by constraining the service sector while promoting the industry sector which results in a trade surplus. Using a large panel set, we show that financial repression has a significant positive effect on the current account. Our results also show that domestic structural imbalances function as an important mechanism for the effect of financial repression on external balances, while financial development does not act as an important channel for financial repression. In terms of individual repressive financial policies, we find that it is primarily interest rate controls and capital controls that are positively associated with current account surpluses. Our empirical

analysis also provides evidence that financial repression has a larger effect on the current account in East Asia compared to countries outside the region. Additional tests also indicate that this result holds up when we exclude China from the group of East Asian countries.

Looking at this from a policy perspective, our results indicate that one policy to manage current global imbalances could be to continue and increase financial liberalization in developing countries. While not constituting a complete solution to global imbalances on its own, continued efforts for financial liberalization in countries such as the ones in East Asia would help decrease the distortive effects that repressive financial policies have on domestic and external balances.

## Appendix 1 - Data

Variable	Source	Variable Description
ca	WDI	Current account to GDP ratio
exbalance	WDI	External imbalance of trade and service to GDP ratio
finr	IMF; Abiad et al. (2008)	Financial repression index
realint	IMF	Real interest rate, deposit rate minus inflation
nfa	WDI	Stock of net foreign assets to GDP ratio
gov	WDI; IMF	Government budget balance to GDP ratio
rgdp	Penn World Table	Relative per capita GDP adjusted by PPP (measured relative to the US)
ggdp	WDI	Growth of real per capita GDP
openness	WDI	Openness at current prices
ageyoung	WDI	Youth dependency ratio; population under 15 over population between 15 and 66
ageold	WDI	Youth dependency ratio; population over 15 over population between 15 and 66
ratio	WDI	Industrial structure ratio; value added of industry sector in GDP over value added of service sector in GDP
privatef	Beck et al. (2001, and updated)	Ratio of private credit to GDP
prs	ICRG	Political risk service index

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TABLE 1. Summary Statistics

Variable	Total sample					East Asia	W/o East
	Obs	Mean	Std. Dev.	Min	Max	(mean)	Asia (mean)
						2001-2005	2001-2005
ca	1599	-0.023	0.058	-0.429	0.234	0.033	-0.014
exbalance	1642	-0.025	0.084	-0.541	0.294	0.020	-0.020
finr	1650	0.444	0.289	0.000	1.000	0.348	0.202
nfa	1641	0.005	0.525	-14.359	0.911	0.233	0.110
gov	1642	-0.129	0.166	-2.120	0.313	-0.133	-0.128
rgdp	1650	0.334	0.329	0.004	1.183	0.240	0.363
ggdp	1650	0.017	0.039	-0.174	0.162	0.036	0.017
openc	1650	0.631	0.478	0.048	4.425	0.983	0.671
ageyoung	1650	0.560	0.233	0.208	1.060	0.458	0.495
ageold	1650	0.118	0.069	0.042	0.299	0.100	0.135
ratio	1585	0.571	0.243	0.144	2.095	0.684	0.492
privatef	1542	0.509	0.408	0.000	2.224	0.650	0.610
prs	1419	0.663	0.152	0.218	0.961	0.658	0.712

Note: See Appendix 1 for details on the variables.

TABLE 2. Baseline Model: Determinants of the Current Account

Dependent Variable	Full Sample Regression					
	OLS	FE	RE	OLS	FE	RE
CA						
Financial repression				0.011*** (0.005)	0.033*** (0.010)	0.038*** (0.009)
Net foreign assets	0.028*** (0.002)	0.007*** (0.002)	0.010*** (0.002)	0.028*** (0.002)	0.008*** (0.002)	0.011*** (0.002)
Govt. budget balance	0.054*** (0.008)	0.035*** (0.009)	0.038*** (0.009)	0.056*** (0.008)	0.040*** (0.010)	0.042*** (0.009)
Relative income	-0.082*** (0.023)	-0.272*** (0.067)	-0.112*** (0.041)	-0.084*** (0.023)	-0.290*** (0.067)	-0.094*** (0.041)
Relative income sqr	0.094*** (0.019)	0.262*** (0.051)	0.131*** (0.033)	0.097*** (0.019)	0.260*** (0.051)	0.119*** (0.033)
GDP growth	-0.096*** (0.034)	-0.116*** (0.028)	-0.113*** (0.029)	-0.096*** (0.034)	-0.105*** (0.028)	-0.103*** (0.029)
Dependency ratio (young)	-0.129*** (0.011)	-0.055** (0.024)	-0.098*** (0.017)	-0.134*** (0.012)	-0.077*** (0.025)	-0.112*** (0.018)
Dependency ratio (old)	-0.158*** (0.041)	-0.030 (0.093)	-0.086 (0.065)	-0.147*** (0.042)	-0.024 (0.092)	-0.076 (0.065)
Openness ratio	0.011*** (0.003)	0.044*** (0.008)	0.024*** (0.005)	0.012*** (0.003)	0.041*** (0.008)	0.025*** (0.005)
Country effect	NO	YES	YES	NO	YES	YES
Year effect	NO	YES	YES	NO	YES	YES
Observations	1590	1590	1590	1590	1590	1590
$R^2$	0.316	0.141	0.298	0.317	0.104	0.315

Note: Unbalanced panel regressions with standard errors reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.

TABLE 3. The Effect of Institutions

Dependent Variable	Full Sample Regression		
	1	2	3
CA			
Financial repression	0.042*** (0.012)	0.034*** (0.011)	0.034*** (0.012)
Net foreign assets	0.007*** (0.002)	0.007*** (0.002)	0.008** (0.002)
Govt. budget balance	0.041*** (0.010)	0.041*** (0.010)	0.046*** (0.010)
Relative income	-0.504*** (0.083)	-0.443*** (0.083)	-0.475*** (0.082)
Relative income sqr	0.346*** (0.060)	0.308*** (0.060)	0.334*** (0.060)
GDP growth	-0.113*** (0.031)	-0.088*** (0.031)	-0.081*** (0.031)
Dependency ratio (young)	-0.063** (0.029)	-0.062** (0.029)	-0.031 (0.029)
Dependency ratio (old)	-0.038 (0.102)	-0.076 (0.103)	-0.023 (0.101)
Openness ratio	0.057*** (0.009)	0.057*** (0.009)	0.054*** (0.009)
Government institutions		-0.078*** (0.017)	
Invtestment profile			-0.047*** (0.009)
Democratic accountability			-0.017** (0.007)
Country effect	YES	YES	YES
Year effect	YES	YES	YES
Observations	1377	1367	1367
$R^2$	0.148	0.166	0.176

Note: Unbalanced panel regressions with standard errors reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.

TABLE 4. Medium-Term Determinants

Dependent Variable	Five-Year Average			
	1	2	3	4
CA				
Financial repression		0.056*** (0.016)	0.046*** (0.017)	0.044*** (0.017)
Net foreign assets	0.047*** (0.016)	0.048*** (0.016)	0.052*** (0.016)	0.054*** (0.016)
Govt. budget balance	0.002 (0.020)	0.009 (0.020)	0.014 (0.020)	0.015 (0.020)
Relative income	-0.068 (0.057)	-0.022 (0.058)	0.019 (0.059)	0.019 (0.059)
Relative income sqr	0.09** (0.046)	0.072 (0.045)	0.052 (0.046)	0.049 (0.046)
GDP growth	-0.179*** (0.088)	-0.182** (0.087)	-0.129 (0.087)	-0.107 (0.089)
Dependency ratio (young)	-0.078*** (0.027)	-0.084*** (0.027)	-0.087*** (0.027)	-0.077*** (0.027)
Dependency ratio (old)	-0.172* (0.094)	-0.171* (0.092)	-0.167* (0.092)	-0.157* (0.092)
Openness ratio	0.018** (0.007)	0.019*** (0.007)	0.019*** (0.007)	0.015** (0.007)
Government institutions			-0.080*** (0.030)	
Investment profile				-0.042** (0.018)
Democratic accountability				-0.028*** (0.014)
Country effect	YES	YES	YES	YES
Year effect	YES	YES	YES	YES
Observations	265	265	265	265
$R^2$	0.378	0.409	0.423	0.434

Note: Unbalanced panel regressions with standard errors reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.

TABLE 5. Robustness Check: Alternative Measure of External Imbalances

Dependent Variable	Full Sample		Five-Year Average	
	1	2	3	4
Trade and services				
Financial repression	0.081*** (0.012)	0.070*** (0.013)	0.088*** (0.024)	0.074*** (0.024)
Net foreign assets	0.009*** (0.002)	0.008*** (0.002)	-0.031 (0.021)	-0.019 (0.021)
Govt. budget balance	0.028** (0.011)	0.027** (0.011)	0.040 (0.028)	0.046* (0.028)
Relative income	-0.108 (0.076)	-0.171 (0.091)	-0.025 (0.108)	0.044 (0.109)
Relative income sqr	0.188*** (0.057)	0.213*** (0.066)	0.127 (0.086)	0.089 (0.086)
GDP growth	-0.179*** (0.032)	-0.112*** (0.033)	-0.342*** (0.104)	-0.270*** (0.105)
Dependency ratio (young)	-0.125*** (0.027)	-0.118*** (0.030)	-0.150*** (0.045)	-0.152*** (0.045)
Dependency ratio (old)	-0.023 (0.105)	-0.010 (0.112)	-0.268* (0.158)	-0.284* (0.158)
Openness ratio	0.028*** (0.009)	0.046*** (0.010)	0.038*** (0.014)	0.037*** (0.014)
Government institutions		-0.132*** (0.017)		-0.109*** (0.038)
Country effect	YES	YES	YES	YES
Year effect	YES	YES	YES	YES
Observations	1600	1376	265	265
$R^2$	0.257	0.142	0.296	0.283

Note: Unbalanced panel regressions with standard errors reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.

TABLE 6. Robustness Check: Alternative Measure of Financial Repression

Dependent Variable CA	Full Sample		Five-Year Average	
	1	2	3	4
Financial repression (real interest rate)	-0.057*** (0.016)	-0.049*** (0.016)	-0.083** (0.041)	-0.084** (0.040)
Net foreign assets	0.037** (0.015)	0.046*** (0.015)	0.089*** (0.030)	0.103*** (0.030)
Govt. budget balance	0.013 (0.016)	0.024 (0.016)	0.005 (0.032)	0.012 (0.031)
Relative income	-0.440 (0.096)	-0.370*** (0.096)	-0.225 (0.159)	-0.203 (0.157)
Relative income sqr	0.315 (0.067)	0.268*** (0.067)	0.231*** (0.112)	0.211* (0.110)
GDP growth	-0.244 (0.040)	-0.212*** (0.040)	-0.291** (0.125)	-0.231* (0.124)
Dependency ratio (young)	0.001 (0.034)	-0.010 (0.034)	0.032 (0.057)	0.017 (0.056)
Dependency ratio (old)	-0.070 (0.108)	-0.152 (0.108)	-0.192 (0.189)	-0.260 (0.187)
Openness ratio	0.061*** (0.011)	0.056*** (0.011)	0.037* (0.022)	0.035* (0.021)
Government institutions		-0.109*** (0.021)		-0.106*** (0.040)
Country effect	YES	YES	YES	YES
Year effect	YES	YES	YES	YES
Observations	910	910	200	200
$R^2$	0.200	0.189	0.385	0.413

Note: Unbalanced panel regressions with standard errors reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.

TABLE 7. Possible Mechanisms: Economic Structure and Financial Development

Dependent Variable	Five-Year Average				
	1	2	3	4	5
CA					
Financial repression	0.049*** (0.017)			0.013 (0.023)	0.006 (0.024)
Finr*EconStructure		0.060*** (0.016)	0.058*** (0.016)	0.052** (0.022)	0.054** (0.022)
Finr*FinDep			0.026 (0.023)		0.024 (0.024)
Net foreign assets	0.048*** (0.017)	0.047*** (0.017)	0.047*** (0.017)	0.047*** (0.017)	0.047*** (0.017)
Gov. budget balance	-0.020 (0.020)	-0.019 (0.020)	-0.014 (0.021)	-0.016 (0.021)	-0.013 (0.021)
Relative income	0.013 (0.062)	0.026 (0.059)	0.026 (0.059)	0.028 (0.060)	0.026 (0.060)
Relative income sqr	0.054 (0.048)	0.048 (0.046)	0.049 (0.045)	0.047 (0.046)	0.049 (0.046)
GDP growth	-0.182** (0.089)	-0.221*** (0.090)	-0.210*** (0.090)	-0.218*** (0.090)	-0.209*** (0.091)
Dependency ratio (young)	-0.091*** (0.027)	-0.069*** (0.027)	-0.063*** (0.027)	-0.072*** (0.028)	-0.065*** (0.028)
Dependency ratio (old)	-0.173* (0.094)	-0.157 (0.090)	-0.133 (0.092)	-0.160 (0.091)	-0.136 (0.093)
Openness ratio	0.023*** (0.008)	0.025*** (0.007)	0.025*** (0.007)	0.025*** (0.008)	0.025*** (0.007)
Government institutions	-0.072** (0.032)	-0.081*** (0.031)	-0.089*** (0.031)	-0.078*** (0.031)	-0.087*** (0.033)
Country effect	YES	YES	YES	YES	YES
Year effect	YES	YES	YES	YES	YES
Observations	250	200	200	200	200
$R^2$	0.432	0.568	0.474	0.466	0.473

Note: Unbalanced panel regressions with standard errors reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.



TABLE 8. Effects of Individual Repressive Policies

Dependent Variable	Fixed-Effect Estimation						
	1	2	3	4	5	6	7
CA							
CREDITCONTROL	0.011 (0.009)						
INTCONTROL		0.018** (0.008)					
ENTRYBARRIERS			0.005 (0.008)				
BANKSUPVISION				0.016 (0.012)			
PRIVATIZATION					0.011 (0.007)		
CAPCONTROL						0.033*** (0.009)	
SECURITYMKT							0.003 (0.012)
Net foreign assets	0.052*** (0.016)	0.050*** (0.016)	0.052*** (0.016)	0.054*** (0.016)	0.051*** (0.016)	0.057*** (0.016)	0.054*** (0.016)
Govt. budget balance	0.011 (0.020)	0.014 (0.020)	0.009 (0.020)	0.010 (0.020)	0.010 (0.020)	0.012 (0.020)	0.008 (0.020)
Relative income	-0.006 (0.060)	-0.007 (0.060)	-0.007 (0.060)	0.001 (0.060)	0.011 (0.062)	0.023 (0.060)	-0.006 (0.060)
Relative income sqr	0.067 (0.047)	0.066 (0.047)	0.066 (0.047)	0.065 (0.046)	0.056 (0.048)	0.048 (0.046)	0.066 (0.046)
GDP growth	-0.109 (0.089)	-0.131 (0.088)	-0.120 (0.089)	-0.120 (0.089)	-0.107 (0.088)	-0.155 (0.088)	-0.113 (0.089)
Dependency ratio (young)	-0.086*** (0.027)	-0.096*** (0.030)	-0.082*** (0.027)	-0.081*** (0.027)	-0.073*** (0.027)	-0.090*** (0.027)	-0.085*** (0.027)
Dependency ratio (old)	-0.174* (0.103)	-0.185** (0.102)	-0.158* (0.095)	-0.154* (0.092)	-0.174* (0.094)	-0.189** (0.092)	-0.167* (0.092)
Openness ratio	0.018** (0.007)	0.018*** (0.007)	0.019*** (0.007)	0.018*** (0.007)	0.019*** (0.007)	0.018*** (0.007)	0.018*** (0.007)
Government institutions	-0.094*** (0.030)	-0.084*** (0.030)	-0.097*** (0.030)	-0.102*** (0.030)	-0.094*** (0.030)	-0.083*** (0.030)	-0.098*** (0.030)
Country effect	YES	YES	YES	YES	YES	YES	YES
Year effect	YES	YES	YES	YES	YES	YES	YES
Observations	265	265	265	265	265	265	265
$R^2$	0.409	0.418	0.403	0.413	0.404	0.428	0.404

Note: Unbalanced panel regressions with standard errors reported in parentheses. \*, \*\*, and \*\*\* indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.

TABLE 9. Financial Repression and External Imbalances: East Asia

Dependent Variable	All	All w/o East	East Asia	East Asia
CA	Countries	Asia		w/o China
	1	2	3	4
Financial repression	0.049***	0.035***	0.117***	0.119***
(real interest rate)	(0.012)	(0.013)	(0.032)	(0.035)
Net foreign assets	0.003	0.004*	-0.046	-0.046
	(0.002)	(0.002)	(0.038)	(0.039)
Govt. budget balance	0.056***	0.065***	0.028	0.041
	(0.011)	(0.012)	(0.026)	(0.027)
Relative income	-0.355***	-0.382***	-0.585***	-0.663***
	(0.088)	(0.117)	(0.154)	(0.167)
Relative income sqr	0.263***	0.199**	0.497***	0.564***
	(0.062)	(0.085)	(0.097)	(0.107)
GDP growth	-0.148***	-0.076**	-0.243***	-0.283***
	(0.032)	(0.035)	(0.085)	(0.095)
Dependency ratio	-0.054*	-0.001	-0.057	-0.115
(young)	(0.030)	(0.032)	(0.106)	(0.114)
Dependency ratio	-0.131	-0.210	-0.335*	-0.257
(old)	(0.102)	(0.130)	(0.176)	(0.190)
Openness ratio	0.058***	0.038***	0.038**	0.041**
	(0.009)	(0.013)	(0.016)	(0.017)
Government institutions	-0.076***	-0.072***	-0.045	-0.019
	(0.017)	(0.019)	(0.042)	(0.045)
Financial development	-0.042***	-0.054***	0.001	-0.006
	(0.007)	(0.008)	(0.017)	(0.018)
Country effect	YES	YES	YES	YES
Year effect	YES	YES	YES	YES
Observations	1326	1072	254	232
$R^2$	0.203	0.181	0.172	0.161

Note: Unbalanced panel regressions with standard errors reported in parentheses. \*, \*\*, and \*\*\*

indicate statistical significance at 10 percent, 5 percent and 1 percent levels, respectively.