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Global Financial Integration, Real Estate Security Returns and Financial Crisis

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Abstract

This paper re-examines whether the global economic and financial integration affects the excess return of a sample with more than 1300 real estate companies from 16 major economies in the world, covering the pre-crisis period (1995-2006), the in-crisis period (2007-2009) and the post-crisis period (2010-2014). The results of the whole sample are compared with those of each geographically-divided sub-group, as well as those obtained in different sub-samples. We confirm that the global financial integration has significant influences on the excess returns of real estate firms. The Global Financial Crisis (GFC) may have significantly changed the relationship between the excess return of a real estate firm and many macroeconomic and firm-level variables, including the economic openness of a country. Such change may also be continent-dependent. Explanations and directions for future research are also discussed.

Key Words: globalization, economic openness, real estate returns, financial crisis, economic recovery

JEL Classification Codes: F36, F21, G15, H12

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1. Introduction

This paper attempts to address two questions: (1) does globalization matter for the real estate market? (2) does the 2008 financial crisis lead to a structural change in the influential factors of real estate firms' returns? Notice that although real estate are often labelled as non-tradable goods, they can still be affected by globalization. The international trade theories have long argued that the price of non-tradable goods can also be influenced by international trade.[1] For instance, An increase of economic openness may result in higher local productivity and output, the demand for real estate will be higher as well. Thus, the direct demand for factories, warehouses and offices from tradable goods sectors will naturally be higher, not to mention other public and private services that are brought along. On the residential side, the increased economic openness may accompany with deeper urbanization process[2], and the rigid demand for residential housing will be more centralized in metropolitans and more developed areas. This phenomenon is particularly obvious for emerging countries like China.[3] However, the fact that the supply of 'local' real estate supply has low elasticity will lead to a disproportionate increase in the rents and prices of real estates. In fact, Bardhan et al. (2004) show that increasing international economic openness can raise the housing rent, confirming the prediction of international trade theory.

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[1] It is well known that even for non-tradeable goods and non-tradeable inputs, including real estate, their prices can be influenced by international trade (for instance, see Balassa, 1964; Samuelson, 1964). For a review of the subsequent literature, see Caves et al. (1999), Jones (1994), Jones et al. (1993), among others.

[2] For instance, Johansson and Wang (2015) find that financial liberalization, which decreases the entry barriers in domestic financial industry, is positively associated with urbanization. Gollin et al. (2013) argue that the development in both tradable sectors and non-tradable sectors attract labor from agriculture to industry.

[3] It is beyond the scope of this paper to review that literature. Among others, See Garriga et al. (2016), Li (2006), Wang and Weaver (2013) on the urbanization process in China.

In addition, real estate has been increasingly securitized and there is a tendency of global financial market integration. capital flows across borders, whether through foreign direct investment (FDI) or financial flows, can link up the dis-connected real estate markets.[4] Among others, Bardhan et al. (2008) confirm that country's real estate security excess (risk-adjusted) returns are negatively related to its openness. On the other hand, through the securitization of mortgage-backed securities and other flexible arrangements in the financial market, negative shocks (such as large scale mortgage defaults in the U.S. during the Great Recession) can transport across borders relatively easily. In fact, some authors argue that this factor contributes to the 2008 GFC.[5] Hence, the degree of globalization may have an impact on the returns of real estate firms as well.

If real estate markets are indeed connected under the recent wave of globalization, a common shock as dramatic as the recent Global Financial Crisis (GFC) can therefore have a significant impact on the returns of real estate

[4] In fact, authors debate whether real estate returns are driven merely local factors, or also affected by more global factors. Among others, Eichholtz et al. (1998, 1999) show that interest rates, firm size and country-specific variables have significant effects on the cross-sectional variation of excess returns for global property firms. Ling and Naranjo (2002), Bond et al. (2003) find that the real estate returns are driven by worldwide factor and country-specific factor. Foort and Martin (2002) find that value/growth factor has a substantial and increasing effect on returns. Lieser and Groh (2014) study how different socio-economic, demographic and institutional characteristics affect commercial real estate investment activity and find that economic growth, rapid urbanization and compelling demographics attract real estate investment. Conover et al (2002) find that foreign real estate provides diversification benefits beyond that obtainable from foreign stocks. Later, Stephen Lee (2006) extends his research by empirically estimating the impact of country risk. Quan and Titman (1999) find a significant relation between stock returns and both real estate prices. And since stock prices are correlated across countries, it is likely that real estate prices are as well. Liow and Schindler (2014) find that the real estate markets have slowly become more integrated with the global and regional stock market, while less integrated with the local stock markets. Again, the literature is too large to be reviewed here. Among others, see Cheung et al. (2015) and the reference therein.

[5] The literature is large and it seems that there are different opinions on the issue. Among others, see Benmelech et al. (2012), Demiroglu and James (2012), Faltin-Traeger et al. (2010), Hartman-Glaser et al. (2012), Mian and Sufi (2009).

firms across countries.[6] For instance, Ariu (2016, p.138) reports that "during the 2008-2009 crisis, trade in goods fell by almost 30%." With such dramatic change in international trade, and given the linkage of international trade and real estate markets that mentioned earlier, it seems reasonable to expect that the real estate markets, and hence the returns of real estate firms can be affected. In addition, some authors argue that the "collapse" of international trade is partially caused by the tightening of credit constraints during the GFC.[7] In that case, it is possible that the same tightening of credit constraints could also affect the returns of real estate firms.

Moreover, it is possible that the GFC itself also leads to a structural change across markets. For example, some authors argue that "flight to quality" is observed among investors. As a result, in spite of the crisis, the real estate assets from the North American markets are still popular destinations of international investment.[8] On the other hand, some emerging markets may

[6] The literature on 2008 Global Financial Crisis (GFC) is large and growing. It is clearly beyond the scope of this paper to review that literature. Nevertheless, it may be instructive to highlight a few contributions that may be more related to the current study. For instance, Andrew and Spiegel (2008, 2009) study the causes and consequences of the 2008 financial crisis and identify that the country holding American securities of exports to the US is exposed to an American crisis. Goetzmann and Wachter (1999) suggest that while the explanations for US real estate crash typically focus on local factors, the global crash is closely related to the world-wide declines in GNP as well. Beine et al. (2008, 2010) examine the causality between the French, German, Japanese, UK and US stock returns and find a dependence between European countries as well as a directional dependence of US on other markets. Gallo and Otranto (2007) characterize a transmission mechanism of the volatility between markets. Beine et al. (2010) show that macroeconomic variables asymmetrically impact the stock market co-movement across the return distribution, and financial liberalization significantly increases the left tail co-movement.

[7] Among others, see Chor and Manova (2012), Manova et al. (2015).

[8] It is beyond the scope of this paper to review that literature. Nevertheless, it may be instructive to highlight a few contributions that may be more related to the current study. Vayanos (2004) consider the situation where investors (fund managers), become more risk averse in a financial crisis, and as a result asset prices become more negatively correlated with volatility during volatile times. Amihud (2002) shows that stock returns are negatively related over time to contemporaneous unexpected illiquidity. Longstaff (2002) finds a large flight-to-liquidity premium in treasury bond prices. Brunnermeier and Pedersen (2009) provide a model that links market liquidity with traders' funding liquidity to explain the phenomenon that market liquidity can suddenly dry up. Marsh and Pfleiderer (2013) study the allocation of assets

experience much more volatility.[9] As a result, excess returns of real estate could adjust to compensate for such change.

In light of all these literatures, this research attempts to address the following issues. First, the relationship between the real estate returns under global and local conditions is examined, and we identify the empirical determinants of the excess returns of real estate firms. To assess the impact of global integration and financial crisis, both local and global macro variables are selected. Naturally, the local macro-economic factors play an important role in the real estate market, which are non-tradeable goods. On the other hand, with an increasing degree of globalization, the global financial market may also affect the 'local' real estate markets.[10] For the real estate firms, especially those with abundant capital assets, the global financial conditions will affect not only their primary business but also their fund raising and foreign investments.

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when there exists commonality in the liquidity across securities. There are also researchers who study the flight-to-safety episodes. Beale et al. (2014) document the flight-to-safety episodes in bond markets and show that such episodes are important to the understanding of the developments in major bond markets. Beber et al. (2009) show that both credit quality and liquidity are demands by investors while liquidity is pursued more intensively in times of market stress. Hildebrand et al. (2012) find that banks substantially change their investment strategies at the beginning of the financial crisis, particularly the banks that are exposed to trouble assets.

[9] It is beyond the scope of this paper to review that literature. Nevertheless, it may be instructive to highlight a few contributions that may be more related to the current study. For instance, Aloui et al. (2011) find strong evidence of time-varying dependence between each of the BRIC markets and the US markets, a result that is consistent with Calvo (2005) in a review of earlier crises. Kenourgios and Padhi (2012) investigate the financial contagion of three emerging market crises, which include the one in 2007. They find that long and short dynamics exist in only the emerging stock markets during the Russian and Asian crises, while in both the stock and bond markets during the subprime crisis. Moreover, stock markets constitute a stronger transmission mechanism during three contagious crises. Ozkan and Unsal (2011) investigate this problem from financial frictions in the domestic economy and find that the scale of financial spillovers and trade openness are the key determinants. On the other hand, Dooley and Hutchison (2009) find that emerging markets appear to be insulated from the developments in the US financial markets because of policy measures.

[10] For instance, Leung et al. (2013) show that the movements of international commodity prices can impact the city level house prices in both Australia and New Zealand.

Second, we assess the influence of the 2008 financial crisis on the real estate in different areas by comparing the results obtained in different sub-periods. To establish the robustness of our results, we experiment with different control variables and different measures of 'openness' and report the results we get.

The organization of this paper is simple. The next section provides a description of the dataset we use. We then explain the methodology, followed by the empirical findings. The final section concludes.

2. Data Description

To be comparable to earlier studies, we follow Bardhan et al. (2008) to focus on 16 countries, which have sufficient numbers of public-traded real estate companies. On the other hand, our sample covers a much longer time period, from 1995 to 2014[11], which naturally includes the GFC in the period. Following the literature, we use firm-level data to mitigate the potential aggregation bias that could arise,[12] and our dataset is from Datastream. According to Datastream, real estate firms include those which provide real estate services, development companies, investment companies as well as real estate investment trusts (REITs). We retain firms with the demanded data. Here is our geographical distribution of real estate firms[13]: for the North America, we have Canada (84) and United States (306); seven countries from Europe, which are Denmark (13), France (59), Germany (70), Italy (10), Netherlands (11), Sweden (23) and the UK (77); four

[11] Bradhan et al. (2008) covers the period from 1995 to 2002.Foort and Hoesli (2004) also studies the international returns of real estate securities. They use cluster analysis to extract "factors." Since they use monthly frequency data, they do not include macroeconomic variables. Their sample covers 10 countries only and the period 1990 to 2003.This paper complements these studies as we cover 1995 to 2014, and hence we can compare the returns before, during and after the GFC.

[12] Among others, see Hanushek et al. (1996).

[13] The numbers in the blankets are the number of firms in our data set.

countries and jurisdictions from Asia, which are China (136), Hong Kong (174), Singapore (76) and Japan (151); two countries from Oceania, which are Australia (76) and New Zealand (9) as well as one from Africa, which is South Africa (33). Figure 1a, 1b provide a visualization of the distribution of firms across countries and continents is provided. Figure 1c, 1d provide a visualization of the shares of world GDP of the economies that these real estate firms located.

(Figure 1 about here)

In our analysis, we employ variables that often appear in the corporate finance and real estate finance literature. We follow LaCour-Little and Yang (2016) in terms of variable selection. We categorize variables into two groups: those reveal the operating conditions and those reveal the leverage or financial conditions. The first group includes size, market-to-book ratio, profitability, defined as the ratio of operating income to sales; ratio of depreciation to total assets, used to reveal the non-debt tax shield; uniqueness, measured by the ratio of selling expenses to sales; and asset turnover, measured by the ratio of sales to common stock. The second group includes long-term debt, total-debt, market value of the shareholders' equity represented by common equity, book value of shareholders' equity represented by common stock and total assets. From them, we can construct different measures of leverages, such as the long-term debt/book value of equity, total debt/book value of equity, long-term debt/market value of equity, total debt/market value of equity, long-term debt/total assets and total debt/(total debt and market value of equity).

Now we provide more details. The total return index is employed to represent the firm's return. In the Datastream, the total return index (RI) is defined as $RI_t = RI_{t-1} * \frac{P_t + D_t}{P_{t-1}}$, where P_t =price on ex-date, P_{t-1}=price on previous day, and D_t = dividend payment associated with ex-date t. Thus, the variable

Firm's Total Return is computed as $\frac{RI_t}{RI_{t-1}}$, which is consistent with the usual form of return.

In this paper, the "size" of a firm is the market value, measured in USD. The turnover is computed as the turnover in volume (VO) times price (P), scaled by the real exchange rate. Also, the Datastream variable Price-to-Book Value (PTBV) is adopted directly as the market-to-book ratio.

In addition, country-level data are included in the empirical analysis to assess the impact of globalization on real estate companies. Following Bardhan et al. (2008), data including the GDP growth (annual %), interest rate spread, inflation, consumer prices, population growth, household final consumption expenditure (referred to as consumption below), real effective exchange rate index, openness, market returns, interest spread with the US, risk free rate, foreign direct investment as well as lending interest rate are also collected. All these country-level data come from the WDI database. To be specific, GDP growth, inflation, population growth and consumption are the annual percent change. Openness is computed as the ratio of the volumn of international trade (i.e., the sum of import and export) relative to the GDP, while market returns are computed as the real accomplished return of the specific stock market index for each country in each year. Furthermore, interest rate spread is calculated by subtracting the deposit rate from the lending rate, while the deposit rate is taken as a proxy of risk-free rate. As for the exchange rate, two measures are used: the real effective exchange rate index (2010=100) and the official exchange rate, among which the former is used as a measure of real exchange rate change. Notice that there are some subtle issues here. The official exchange rate of some European countries needed to be adjusted as the original currencies are replaced by Euro after the year they join the European Union. The same operation is also applied to the deposit and lending interest rate. More

specifically, the Euro spread for the UK since 1999, Denmark and Germany since 2003, Italy since 2004, France since 2005 and Sweden since 2006 is adopted. There is a lending rate, but no lending deposit spread rate, in the WDI database for the United States. Therefore, the lending deposit rate obtained by lending rate minus federal funds rate is used. At the same time, the Euro discount rate is seen as the substitution of the deposit rate left blanked for the Euro Union countries, which are the UK since 1999, Germany since 2003, Denmark and Italy since 2004, Sweden since 2006 as well as France and Netherlands since 2013. The interest spread of the US is computed as the difference between the risk-free rate of each country and the US (FFR). The net inflows of foreign direct investment (FDI) are the percentage of local GDP.

(Table 1 about here)

3. Methodology

Notice that we have an unbalanced panel data set, with firms enter and exit with a variety of reasons.[14] Since our interest lies in both firm-level and country-level variables, we follow the literature to estimate our empirical model with pooled General Least Square (GLS) that includes both firm-level and country-level variables and identify their separate contributions. In following equation, the subscript t represents the year, j stands for the respective country, and i refers to the individual firms.

$$R_{ijt} - R_{f,jt} = \alpha + \beta_1\left[R_{m,jt} - R_{f,jt}\right] + \beta_2\left[M/B_{ijt}\right] + \beta_3\left[Size_{ijt}\right] + \beta_4\left[Turnover_{ijt}\right] + \beta_5\left[GDP\Delta_{jt}\right] + \beta_6\left[Interest\ \ Spread_{jt}\right] + \beta_7\left[Openness_{jt}\right] + v_{ijt} \quad (1)$$

[14] Clearly, it is beyond the scope of this paper to discuss this issue. Among others, see Brown and Riddiough (2003).

- R_{ijt} is the realized returns for the real estate firm i in our sample, which is traded in country j at time t.

-$R_{f,jt}$ is the risk free rate of country j at time t, and it is represented by the deposit rate.

-$R_{ijt} - R_{f,jt}$ is the excess returns of firm i in country j over the risk free rate in country j.

-$R_{c,jt}$ is the realized returns of the stock index for country j at time t, and it is used as the market return.

-$R_{m,jt} - R_{f,jt}$ is the market excess return of country j.

-M/B_{ijt} is the market-to-book ratio of firm i in country j at time t.

-$Size_{ijt}$ is the firm's market value adjusted to the US dollars.

-$Turnover_{jt}$ is the firm's annual total turnover measured in US dollars.

-$GDP\Delta_{jt}$ is the GDP growth of country j at time t.

-$Interest\ Spread_{jt}$ is the interest rate spread of country j at time t. In our case, it is calculated by subtracting the deposit rate from the lending rate.

-$Openness_{jt}$ is the openness of country j at time t.

Notice that despite its simplicity, this model contains firm-level and country-level information. We believe that the macroeconomic variables could affect the return of the real estate firms, as they might affect the demand and supply of the real estate market. For instance, a higher GDP growth may imply a higher demand for both commercial and residential real estate. Other variables that may reflect the demand side include population growth and consumption growth. We also include the interest rate spread, calculated as the difference between

lending interest rate and borrowing interest rate, as a proxy for the firms' cost of external finance. Since real estate developers are competing with firms in other industries in terms of financing, an increase in the interest rate spread may suppress the supply of real estates.[15]

In addition, our regression includes the third group of variables to represent the external factors, which are mostly used to evaluate globalization. We follow Bardhan et al. (2004, 2008) to use the same measure of Openness as the proxy for the extent of globalization here. We would experiment with other alternative measures in a later section.

4. Statistical Findings

4.1 Basic Models

Table 3 shows the results of the main regressions for the full sample and the whole period. Following Bardhan et al. (2008), our emphasis here is whether the degree of globalization, which is traditionally measured by the degree of economic openness (i.e. the sum of import and export, scaled by the GDP), has a significant impact on the real excess return of real estate firms.

(Table 3 about here)

Table 3 presents the basic results. Column 1 displays the results of a single factor model that regresses firms' excess return on market excess return, as an International Capital Asset Pricing Model. In this regression, it is found that the *beta value is almost zero and insignificant*. Thus, the relationship between the excess returns of real estate firms and that of the whole market is

[15] Among others, Jin et al. (2012) show the external finance premium and the aggregate house price are significantly correlated, even after controlling for the effect of other macroeconomic variables.

generally not very strong, although in some subsamples, the relationship becomes positive and significant. In column 2, openness is added to the single factor model. It can be found from the result that the coefficient of openness is positive and significant, meaning that *the excess returns of real estate firms are higher for an economy which is more connected to the globalized economy through international trade*. According to the adjusted R-square value, it is observed that the single factor is not very explanatory for the firm's excess return. However, openness can contribute a little contribution to the explanation.

Column 3 and 4 show the results of the Fama and French factor models. The market-to-book ratio does not have much impact on the returns of the real estate firms, because the coefficients of them are almost zero and insignificant, while the coefficients of size are positive and significant. According to the original Fama and French factors theory, smaller firms are more profitable than larger ones, as they have larger growth space and better opportunities. However, our results suggest that for the enterprises in real estate section, larger firms can realize higher returns more easily than the smaller ones. Thus, there may be a "scale effect" in the real estate sector. For example, the larger developers with more resources may be more famous among investors and be trusted more easily because of their earlier works (as long as there is no serious problem), and the agents who own more information and higher coverage of customers may also be more attractive, because they can provide more abundant services. The other reason may be that larger firms may be more resistive to inherent risks.

In column 5 and 6, the macro variables are combined for both the demand and supply sides, GDP growth and interest rate spread. The coefficients of GDP growth and interest rate spread are both positive and significant. In addition,

the effect of economic openness is significant and positive as well in other models.

Column 7 and 8 presents the results when these variables are put together. The results here are basically consistent with the previous ones, except that the log size and interest rate spread become not that significant. The adjusted R-square suggests that the model 7 performs better.

Columns 9 to 11 present results for other specifications. In column 9, the log size is substituted by size and size-square, while in column 10, it is replaced by turnover scaled by size (turnover/size). Besides, in column 11, other demand and supply proxies are added, including the consumption growth, population growth as well as the lending interest rate. The results show that the coefficients of these proxies are all negative and significant. Perhaps more importantly, *in all of these regressions, the coefficients of openness are positive and significant*, indicating that globalization is a positive driven influential factor for real estate companies.

4.2 Continent and Period Regressions

The previous section provides us a "global picture" on how the excess return of real estate firms are related to the economic openness of their countries. This section examines whether the result holds only for some locations or some sub-periods only. The rationale is clear. Notice that real estates are often subject to different legal systems and regulations across countries, shaped by various cultural and historical reasons. Hence, it is reasonable to expect that real estate markets across continents may actually display different characteristics. Thus, following the literature, we divide our sample into different sub-samples according to geography (North America, Asia, Europe and

Oceania) as well as temporal characteristics. It has been suggested that the US has a very different real estate finance system and hence may behave very different from other countries,[16] we also re-estimate the model with a subsample with all countries except US.[17] On the time dimension, the sample is divided into three sub-samples, pre-crisis (1995-2006), in-crisis (2007-2009) and post-crisis (2010-2014).

(Table 4a, 4b about here)

All regressions for each group in each period are re-estimated, and the detailed results are reported in the Appendix. Table 4a and 4b simply provides a summary. As shown in these regressions, in most areas and periods, the coefficients of the market excess returns are *positive and significant. During the crisis*, however, all firms in Asia and the overall sample except the US are *negatively* correlated with the local market returns. Notice that the market returns during the GFC are basically negative. Thus, the negative coefficients during the crisis sub-sample means that these real estate firms have managed to serve as a hedge during the financial crisis. It could be due to the portfolio re-allocation efforts by financial intermediations across countries. It can also be related to the policy measures implemented by different countries during the crisis. More discussion on this will be followed.

We now go into more details of the regression. Although the coefficient of the log size in the overall regression in the column 1, Table 4a is negative, it is positive in many other regressions. The market-to-book ratio is not significantly correlated with the firms' excess returns in most periods and areas as well. The coefficients of log turnover is *never* positive and significant. For the macro variables, GDP growth is positive for most regressions, except

[16] Among others, see Lea (2013), and the reference therein.
[17] In our sub-sample analysis, South Africa is omitted, due to its quite small firm number.

for the US. Since GDP can be interpreted as a proxy of demand of real estate, and a stronger demand leads to higher return in the real estate firms, which is consistent with basic economic intuitions. The coefficients of the interest rate spreads are generally negative and significant with some exceptions: Asia in pre-crisis, Oceania in in-crisis and Europe in all periods. Again, this is intuitive as higher interest rates are often associated with lower asset returns.

(Figure 2 about here)

Figure 2 provides a visualization of the changes in the estimated coefficients over different time periods. On the horizontal axis, "1," "2" and "3" refer to the pre-crisis, in-crisis and post-crisis periods respectively. Figure 2a shows that the coefficients of GDP growth in Model 8. Except for Asia, the coefficients of GDP for all our sub-samples are much higher during the financial crisis compared with the pre- and post-crisis. The reason why the asset returns are less sensitive to the GDP in Asia than in other continents could be related to the notion that Asia is relatively less affected by the GFC and capital flows from other continents temporarily move to Asia during the GFC. Figure 2b shows that the coefficients of the interest rate spread are much higher during the crisis in the full sample, except for the case of U.S. and Oceania. It is also volatile in the sense that for the case of the North America and Asia, it shifts from positive to significantly negative. For the case of Europe, it shifts from negative to positive. Clearly, it could be related to the fact the monetary policies adopted by the Federal Reserve Bank (FED) and the European Central Bank (ECB) are somehow different and may therefore affect how the asset returns react to changes in the interest rate spreads.[18]

[18] Among others, Cukierman (2016) observes that "… Both the Fed and the ECB reacted to their respective crises by injecting liquidity and generally loosening monetary policy. But due to structural and institutional differences as well as timing differences between the peaks of

As we are more concerned about the influence of globalization on the asset returns, the coefficients of economic openness (as the proxy for globalization) for each area are plotted in Figure 2c. In our full sample, the coefficients of openness both before and after the crisis are *positive and significant*, while they are negative and insignificant in the in-crisis period. This suggests that other things being equal, the excess returns of real estate firms in more globalized countries are lower during the GFC. We also find that the results are sensitive to the geography. For instance, *once we remove the U.S. firms, the picture looks differently*. The coefficients of openness during the crisis are not only positive and significant, but can also be much higher than those both before and after the crisis. *The sub-samples of the North America and Asia also behave differently*. For the former, the effect of globalization switches from positive and significant to negative and significant after the financial crisis, whereas for latter, it turns from negative to positive. Several factors may play a role for such differences. In general, firms in the U.S. are more globalized than firms in other continents before the GFC. During the GFC, however, the U.S. economy may be hit more severely than other countries. As the asset prices in the U.S. have adjusted downward significantly, some real estate firms in the U.S. become target of "overseas investments" from the Asia, including from some "Asian" real estate firms invest in American real estate firms, and hence the sensitivities of the asset return to globalization may be affected.[19]

For the countries in Oceania, Australia and New Zealand, the coefficients of openness during the financial crisis are positive and numerically large. Yet after the crisis, they turn sharply into *negative*. In the case of Europe, the

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the US subprime crisis and the Eurozone sovereign debt crisis, *there are noticeable differences between the policy responses of the Fed and the ECB.*" (Italic added)

[19] Among others, see Kaul (2016) for more on this point.

coefficient of globalization also changes from positive and insignificant to negative and significant.

In sum, the global financial crisis in 2008 has caused a significant change in how the asset returns respond to the macroeconomic variables, such as the GDP, interest rate spread and economic openness. Since this financial crisis broke out in the U.S., it is reasonable to expect that the situation in the U.S. is in a way more dramatic. Within Europe and Oceania, firms in more economically open countries have higher return than those in less open economies before the crisis. After the crisis, however, the relationship is reverse. Other things being equal, firms in more open economies would deliver a lower return.

4.3 Alternative Measures of Globalization

Thus far, our only proxy for economic openness is the ratio of international trade to GDP, which clearly measures the importance of international trade of goods. Clearly, there are alternative measures. For instance, one may look at the Foreign Direct Investment (FDI) as a percentage of GDP. This would measure how the economy depends on the international capital mobility. Furthermore, the exchange rate and interest rate differential may also be important. For instance, in an ideal of perfect capital mobility, the interest rate differential (IRD) should be effectively zero. Hence, IRD could also reflect the degree of capital mobility. Similarly, exchange rate changes may also affect the capital mobility. It is also well known that the dynamics of exchange rate and interest rate may be closely related.[20]

[20] Clearly, it is beyond the scope of this paper to review this literature. Among others, see Engel (2013).

To be operative, we use the Exchange Rate Change, as the differential of the real effective exchange rate in the current and former period, scaled by the real effective exchange rate in the current period. Clearly, firms that are heavily involved in international transactions should be aware of the exchange rate risk, and "protect" themselves from the exchange rate risk through the participation in the forward foreign exchange markets. Therefore, the forward foreign exchange rates are also included in the regression. Our regression results are presented in Table 5, and it is clear that all these variables are significant.

(Table 5, 6 about here)

Again, we try to examine the robustness of our results, we repeat the regression in our six sub-samples. The regression results are reported in Table 6. The corresponding coefficients of FDI, Exchange Rate Change, Forward Exchange Rate and Interest Rate Spread with the US are plotted in Figure 3. Again, the fluctuations of the coefficients before and after the crisis are obvious and consistent with our former observations.

(Figure 3 about here)

4.4 Leverage variables and Other Firm-level Variables

Thus far, we focus on macroeconomic variables. One may argue that the *firm-level variables* are also important in determining the asset returns. In this section, we introduce leverage variables, such as long-term debt to equity, total debt to equity and long-term debt to total assets in our regression models. Only the coefficient of the long-term debt to total assets (LDTA) has relatively acceptable coefficient, the coefficients of other leverages are extremely small in absolute value. The results of regressions with LDTA are shown in table 7a and 7b.

(Table 7 about here)

Due to the space limit, we focus on the coefficient of openness. Table 7a shows that the coefficient of openness is significantly negative before the crisis, but turns significantly positive after. When we examine different geographical sub-samples, we find that the coefficient of openness is negative for North America, before the crisis, but it is insignificant. It then turns significantly negative after the crisis. This pattern is clearly opposite to the full sample, or the full sample except the U.S. For Asia and Oceania, the coefficients of openness are significantly positive before the crisis, but turn significantly negative after the crisis. It means that the market somehow "discount" the stock returns of the real estate firms in these regions if they belong to more open economies. Yet the results for the full sample is significantly positive after the crisis. One may wonder what drives that result. Table 7b shows clearly that they are driven by the European firms.

We propose a simple explanation here. It is well known that after during the GFC, different policy measures have been imposed by different governments. Apparently, some Asian countries (such as China) is very aggressive in "market stabilization." It seems that European countries, in general, may be slightly behind in the economic recovery. Thus, for firms located in non-European countries, "openness" may imply a "European exposure" which might not lead to more payoffs, at least in the short-run. Hence, the coefficient for openness would be negative in the post-crisis period. On the other hand, for firms located in European countries, "openness" may imply a "non-European exposure" which might diversify the risk, at least in the short-run. Hence, the coefficient for openness would be positive in the post-crisis period. In other words, the variations in the coefficients of openness may have captured the differences in economic recovery after the GFC. And this

simple explanation seems to be consistent with the recent writings of other researchers.[21]

4.5 Balanced Panel

Notice that our sample is an un-balance sample and some seminar audience seem to worry that the entry and exit of firms in our sample might affect our conclusion. To address this concern, we construct a balanced sub-sample in this section, which by definition only consists of firms survive all sample period and with all firm-level variables. Limited by data availability, this is perhaps our best effort to address the potential "survivorship bias" issue in our sample.[22] To facilitate the comparison, we maintain our former econometric model in this section.

(Table 8 about here)

The "survived" firms are quite limited in number; we have only about 60 firms in this balance panel with all firm-level variables available. Since most of these firms are from the US, we ignore the geographical factors in the subsequent analysis. As shown in Table 8a, the coefficients of size, GDP growth, interest rate spread and openness become much bigger in the balanced panel than in our sample (Table 3). Table 8b also shows that size and openness are much more influential in this balanced panel, compared with the results from the full sample (Table 4).

At the same time, indirect evidence of "structural change" can be found. For instance, the coefficient of openness turns from positive and significant (before the crisis), to insignificant (during the crisis) and then to negative and significant (after the

[21] There is a growing literature on these issues and it is clearly beyond the scope of this paper to review the literature. Among others, see Aloui et al. (2011), Arias and Wen (2015), Kaul (2016), Morgan Stanley (2016).

[22] Researchers were aware of the presence and potential effects of survivorship bias since early 1970s, they also do comprehensive examinations and tests for this issue, such as Ball and Watts (1979), Salamon and Smith (1977), De Bondt and Thaler (1985, 1987), Cubbins et al (2006), Bailey and Gilbert (2007) and also Gilbert and Strugnell (2015).

crisis). The same is true for other variables as well. For instance, the coefficient of market excess return turns from negative and significant (before the crisis) to positive and significant (during and after the crisis). The coefficient of log size turns from positive and significant (before and during the crisis) to insignificant (after the crisis). The coefficient of log turnover is insignificant before and after the crisis, but it is negative and significant during the crisis. The coefficient of GDP growth turns from negative and significant (before the crisis), to positive and significant (during the crisis), and then to insignificant. The coefficient of the interest rate spread turns from negative and significant (before the crisis), to insignificant (during and after the crisis).

Table 8c presents the results for the whole sampling period with alternative measures of globalization included as controls. It is clear that our results are robust to that. Table 8d presents the results when firm-level variables (including leverage) are included. Interestingly, while the coefficient of openness is positive and significant for the whole sampling period (1995-2014), the same coefficient becomes insignificant in the three sub-sampling periods (before, during and after the crisis). There are several other variables also change sign in different sub-sample periods as well. Two mechanisms may be in operation. On the one hand, firms adjust their strategies, including the amount of leverage, the size, etc. during and after the crisis. On the other hand, the market may change the valuation of different characteristics. We leave more detailed analysis to the future research.

5 Conclusion

In this paper, the impact of global economic and financial integration on the excess rates of returns for listed real estate companies is examined. This paper also investigates how the 2008 GFC may change the relationship between excess returns of the real estate variables and their determinants. We find that the economic openness does have significant and, in general, positive influences on

the returns of real estate firms. Meanwhile, the local macro variables also exert important effects on real estate firms' excess return from both the supply and demand sides. However, these findings vary with different geographical areas, although most of them can be significantly observed.

The other main subject that is focused on in this study is the financial crisis. Our results provide clear evidence that some "structural changes" occur after, or even during the GFC in terms of how the excess returns of real estate is determined. The coefficients of some variables even change sign (i.e. from positive and significant to negative and significant, or vice versa). In particular, for real estate firms in some countries, being in an economically more open country can turn from a blessing (i.e. having positive effect on the excess return) to a burden (i.e. having negative effect on the excess return. In some countries, it can be exactly opposite. become larger or smaller, while others fluctuate during the crisis period. It is possible that such divergence in results is related to the fact that government in different continents adopt very different policy measures during the crisis and achieved different speeds of economic recovery after. Clearly, these results give support to the view that a financial crisis could lead to a structural chance in economic relationships. It may also lead us to refine our understanding of the relationship between globalization and asset returns, and may us directions for future research.

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Figure 1a. Numbers of Firms Included in Our Sample, Group by Countries

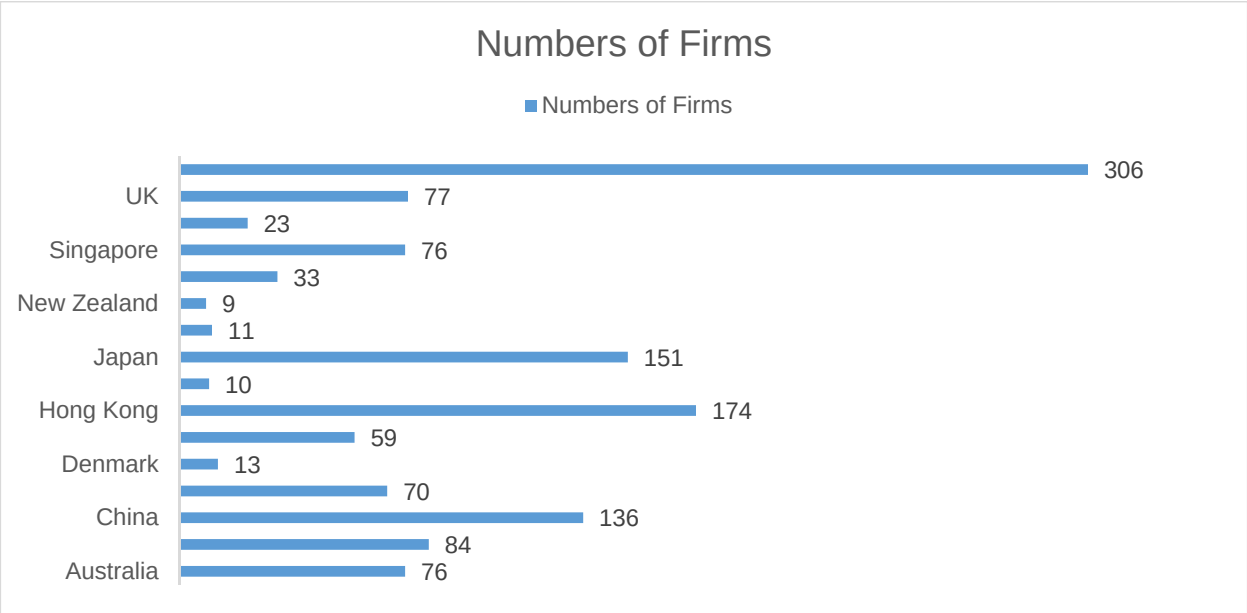


Figure 1b. Number of Firms Included in Our Sample, Grouped by Continents

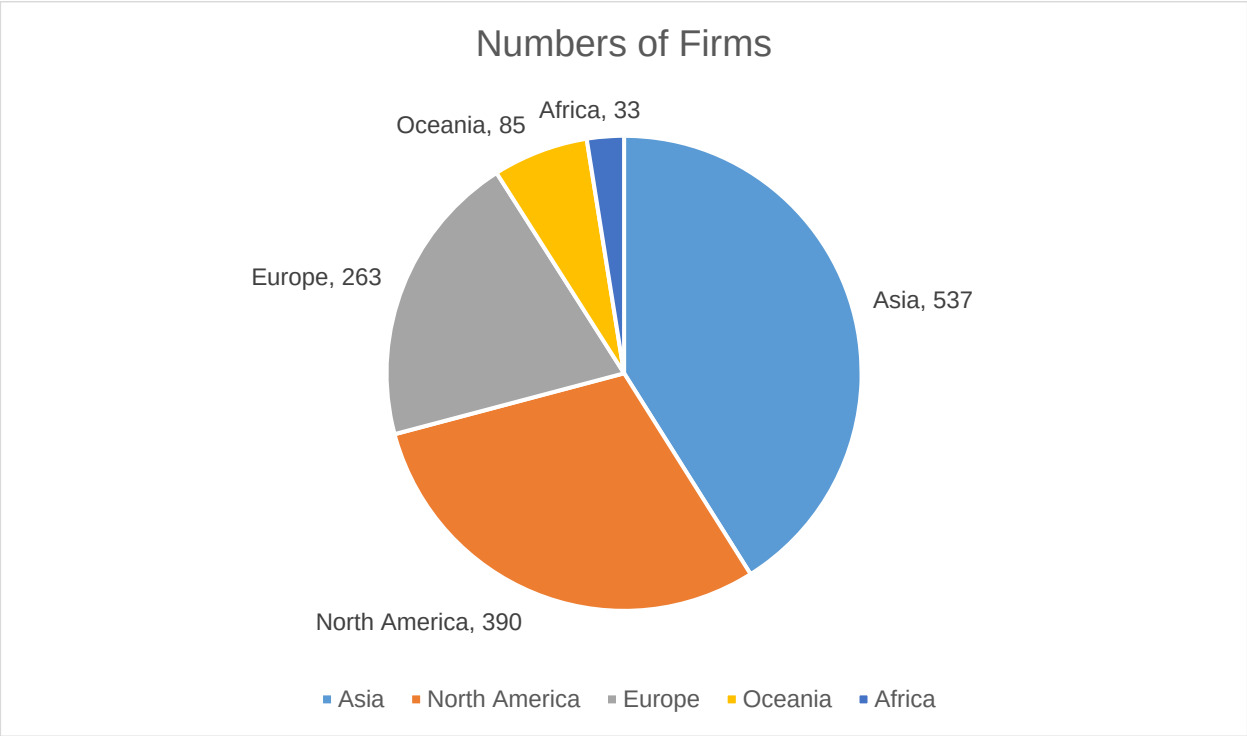


Figure 1c Shares of World GDP, in 2015

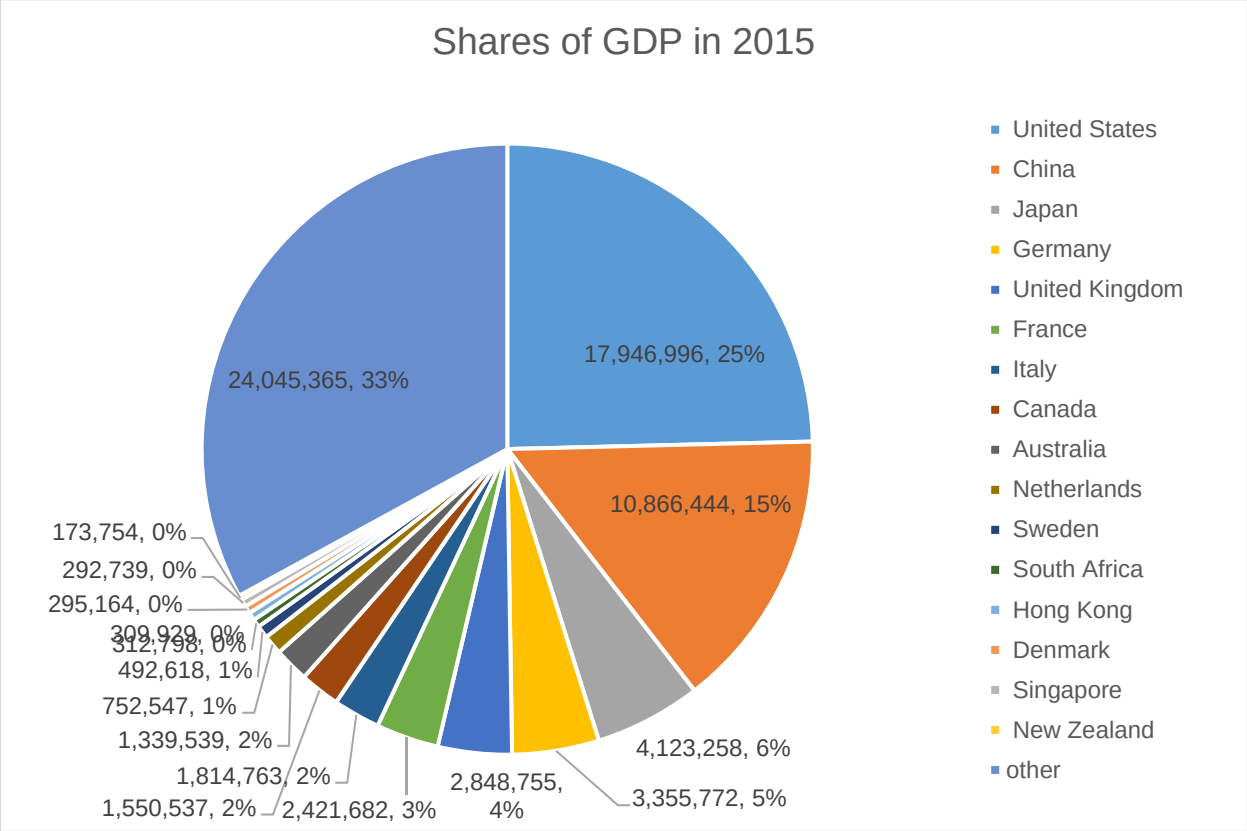


Figure 1d Shares of World GDP (grouped by continent)

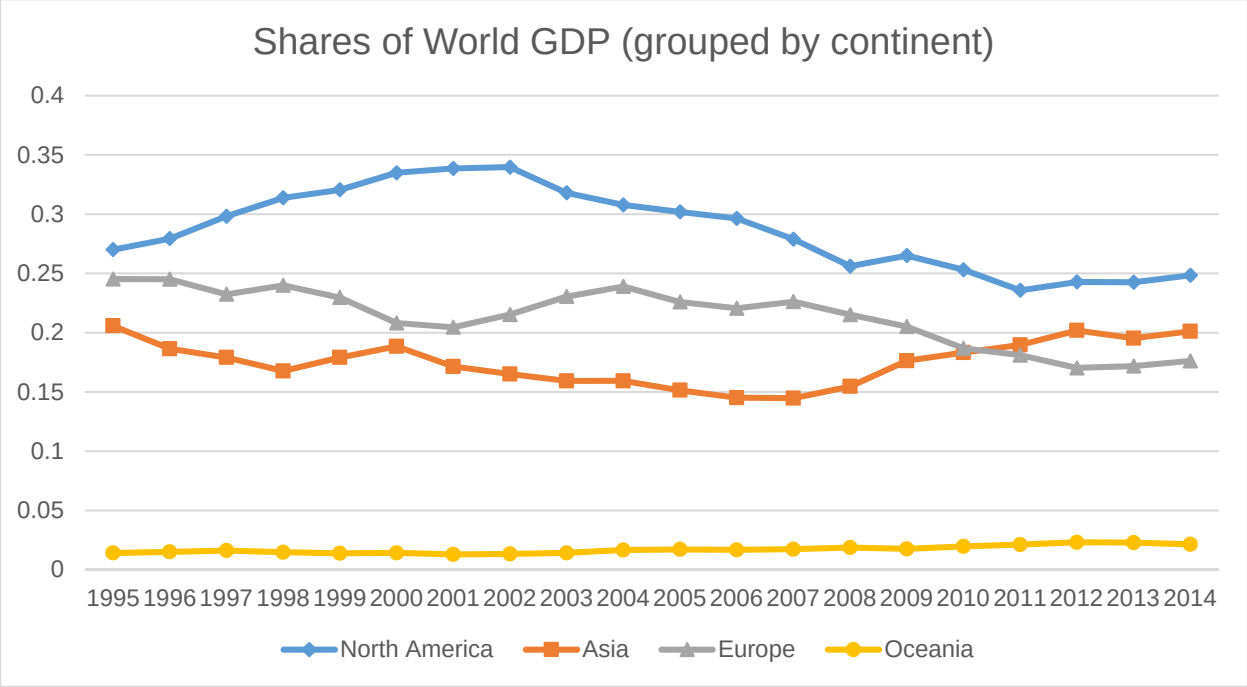


Figure 1e Shares of World GDP (grouped by country)

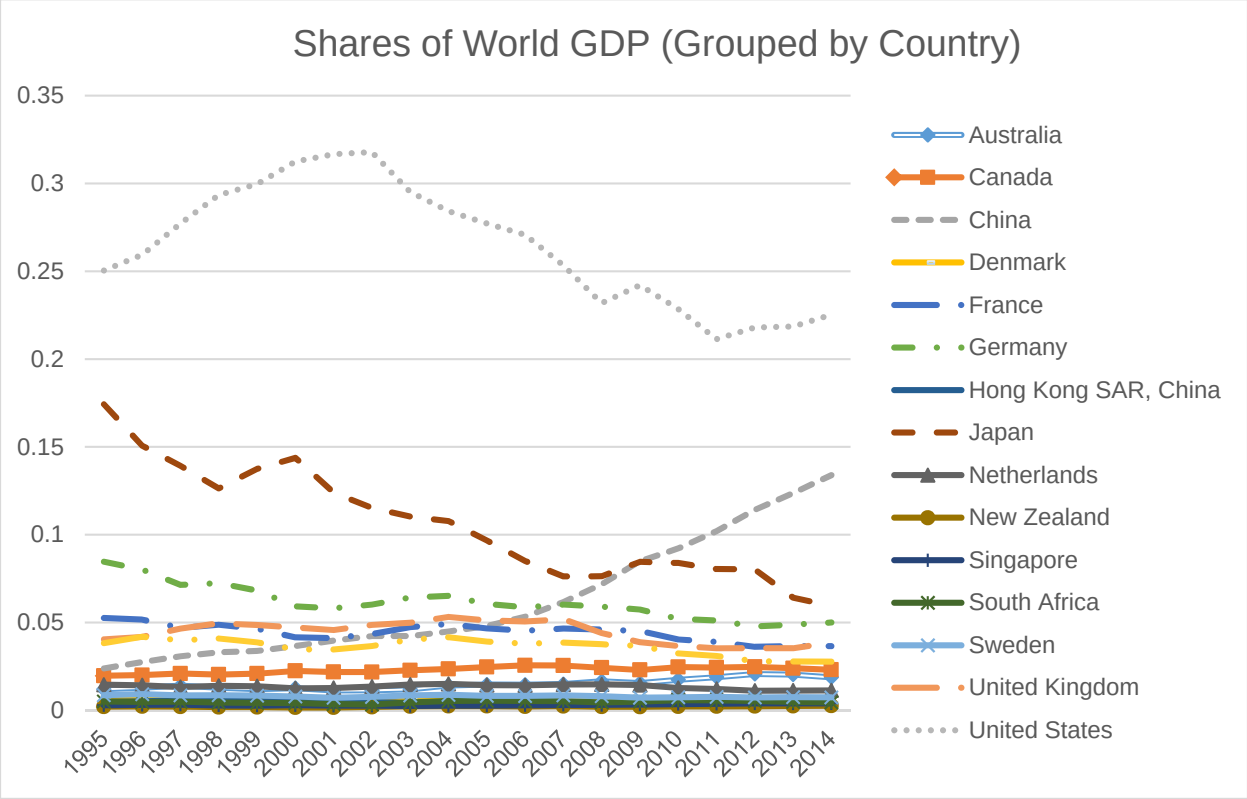
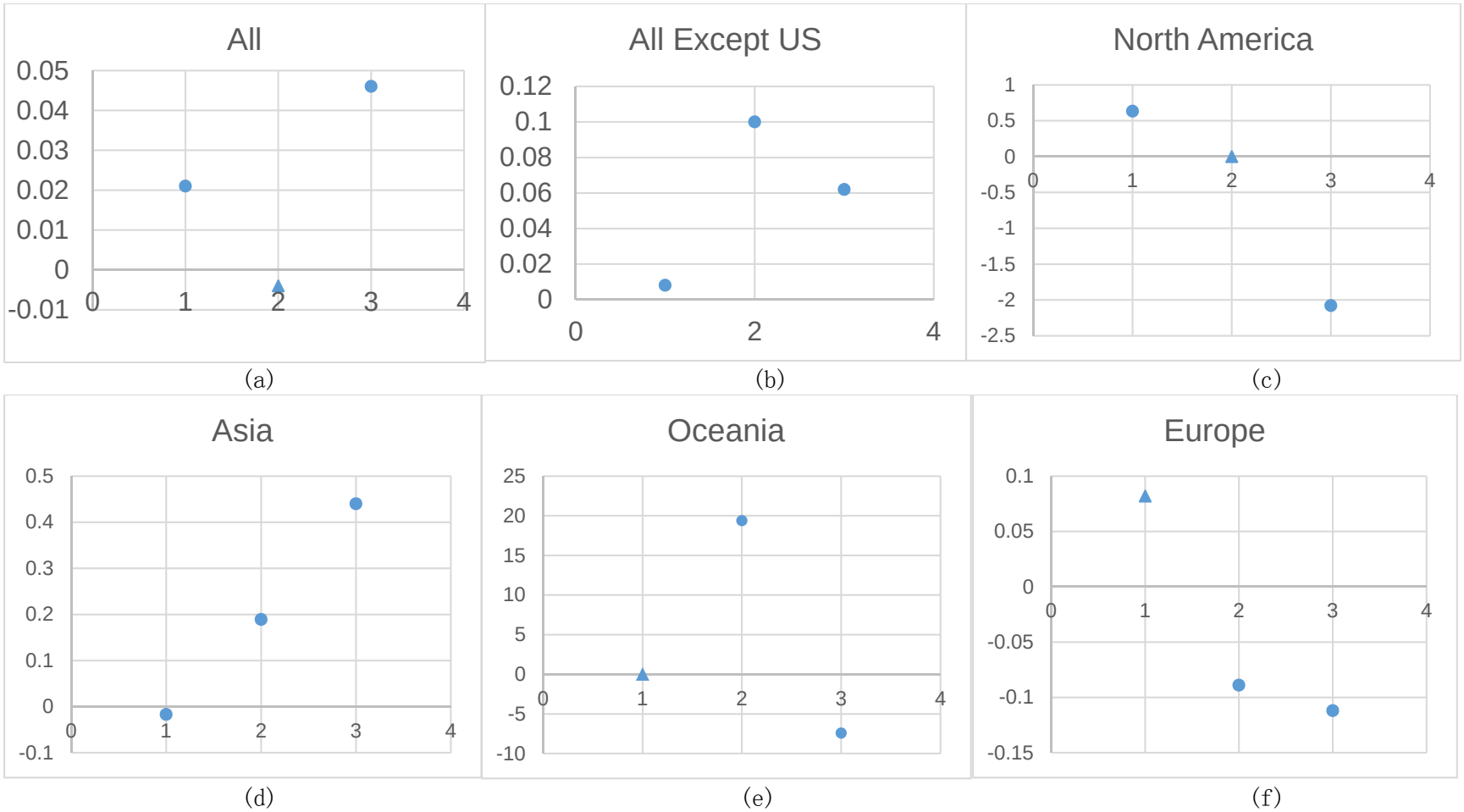
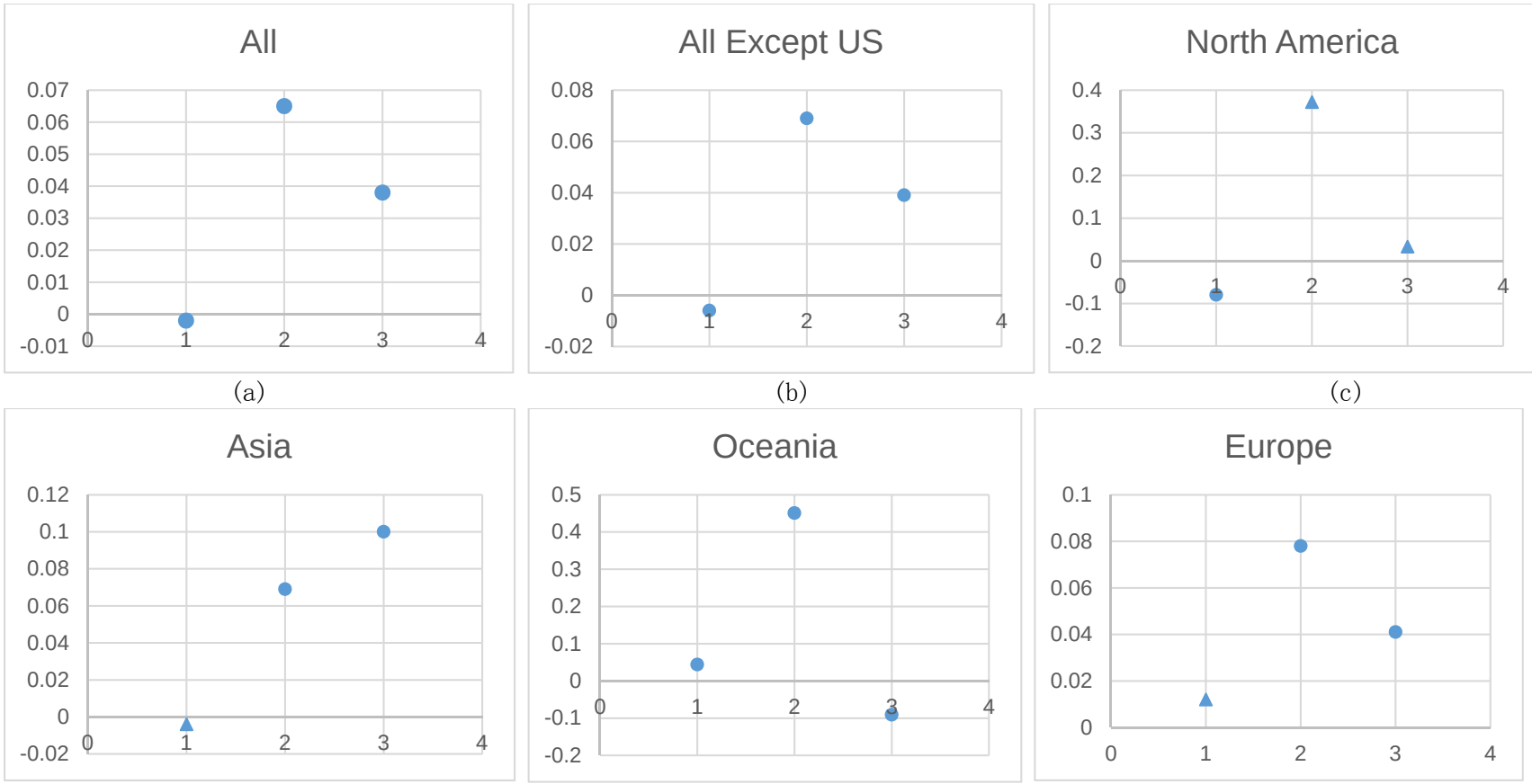


Figure 2a Coefficients of Openness in Model 8, following Table 4



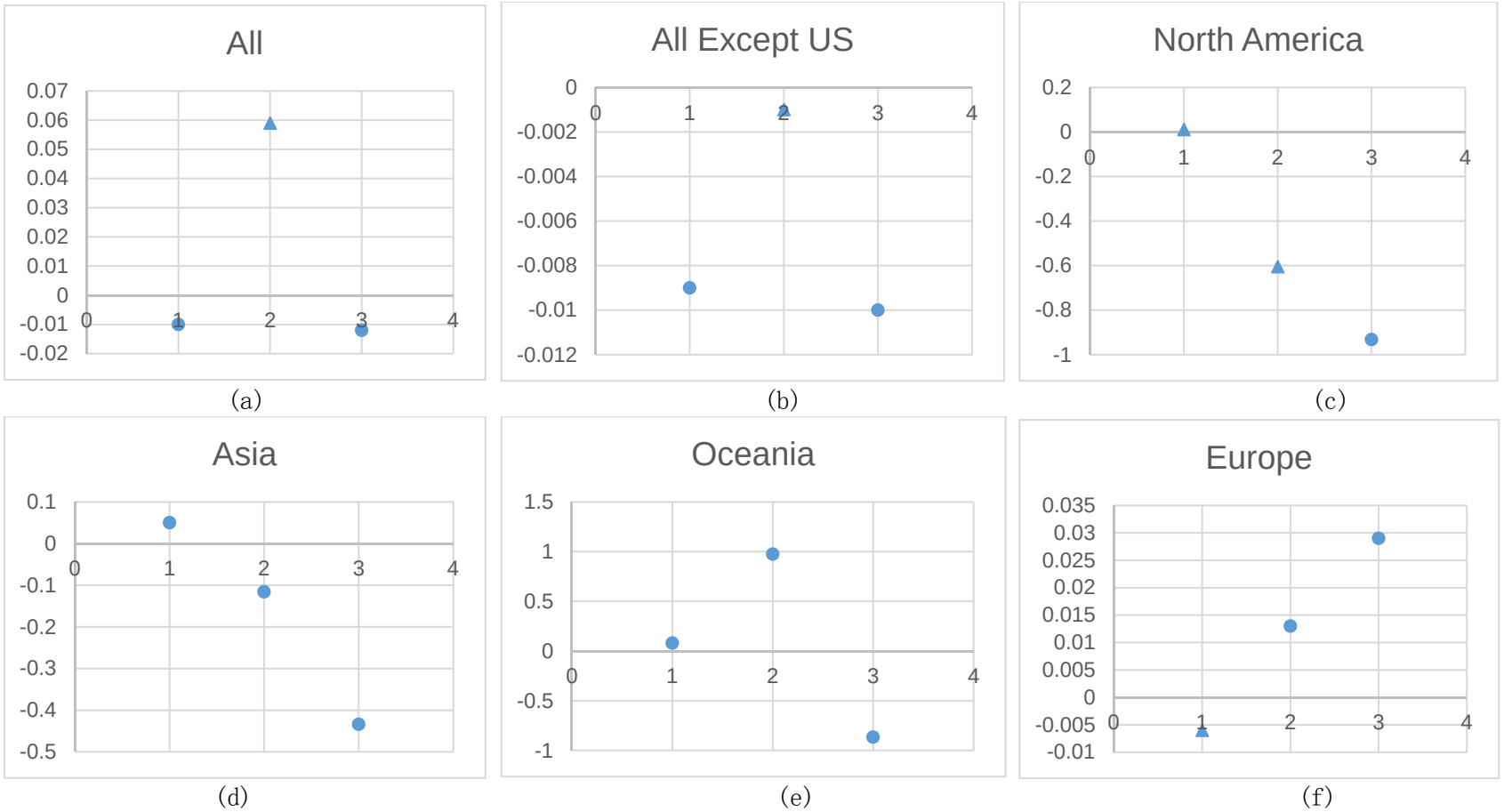
In each figure, the triangular mark represents insignificant coefficient and the round mark represents significant coefficient. The number 1 on the horizontal axis represents pre-crisis period (1995-2006), 2 represents in-crisis period (2007-2009), 3 represents post-crisis period (2010-2014).

Figure 2b Coefficients of GDP in Model 8, following Table 4



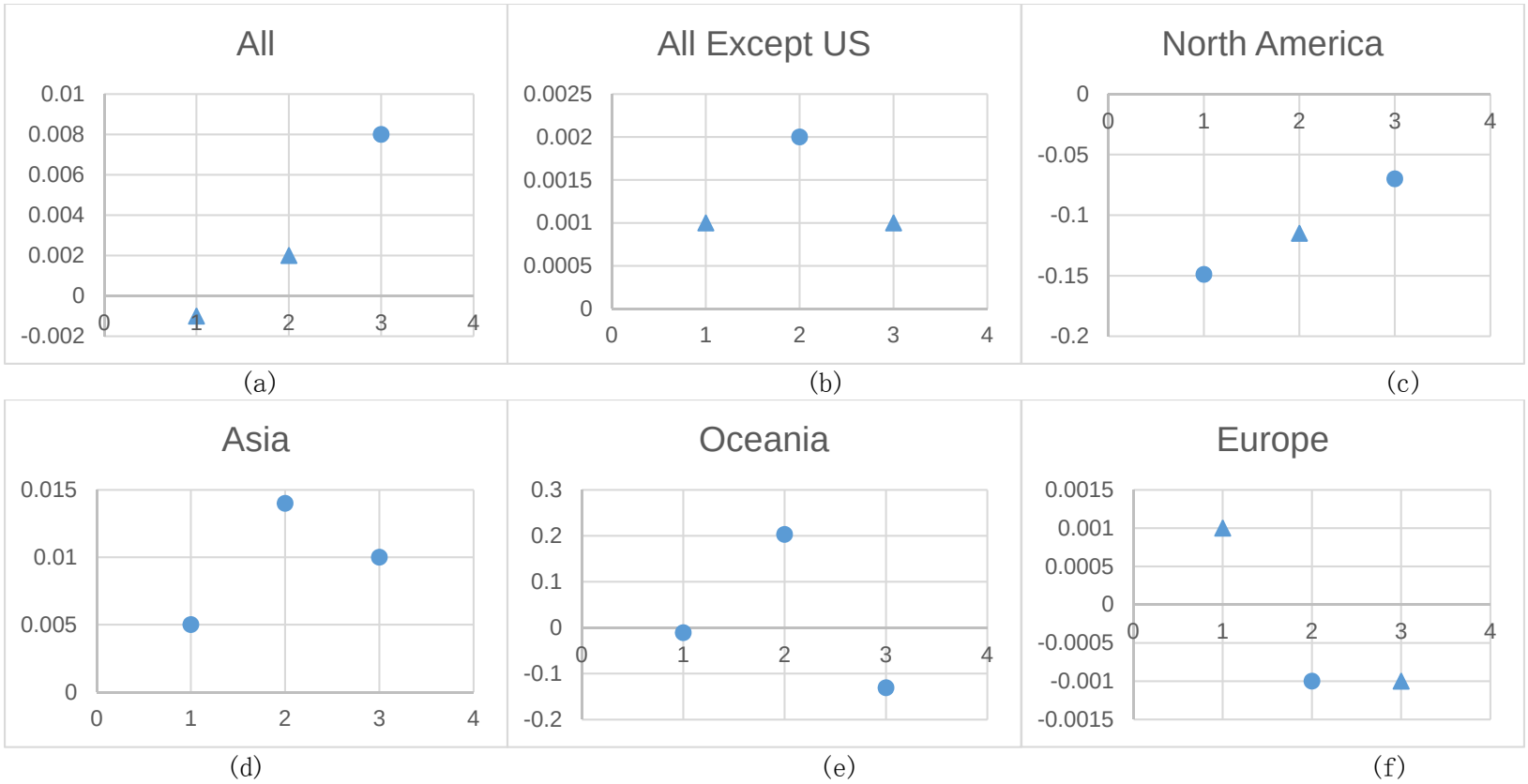
In each figure, the triangular mark represents insignificant coefficient and the round mark represents significant coefficient. The number 1 on the horizontal axis represents pre-crisis period (1995-2006), 2 represents in-crisis period (2007-2009), 3 represents post-crisis period (2010-2014).

Figure 2c Coefficients of Interest Rate Spread in Model 8, following Table 4



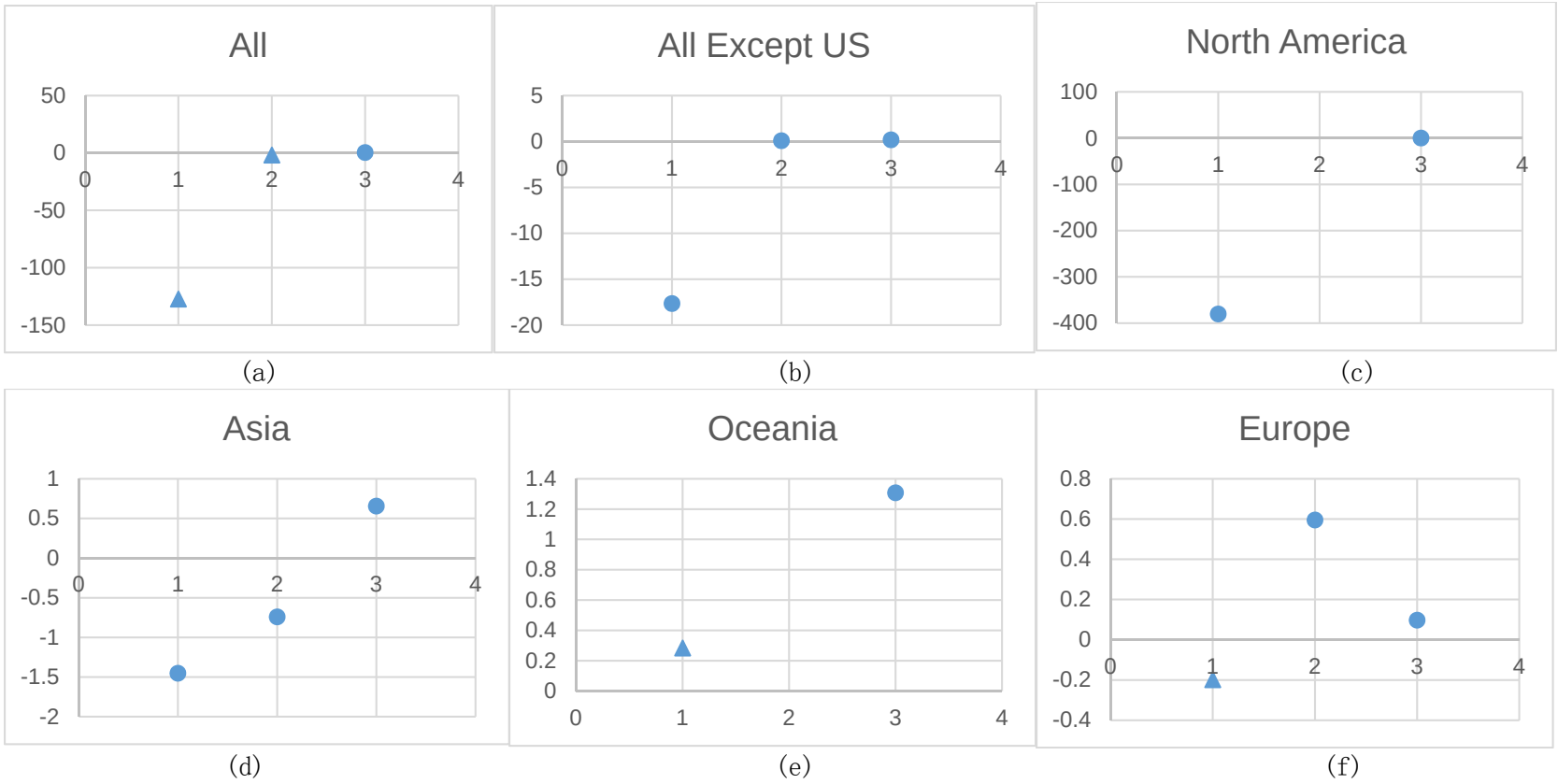
In each figure, the triangular mark represents insignificant coefficient and the round mark represents significant coefficient. The number 1 on the horizontal axis represents pre-crisis period (1995-2006), 2 represents in-crisis period (2007-2009), 3 represents post-crisis period (2010-2014).

Figure 3a Coefficients of FDI, following Table 6



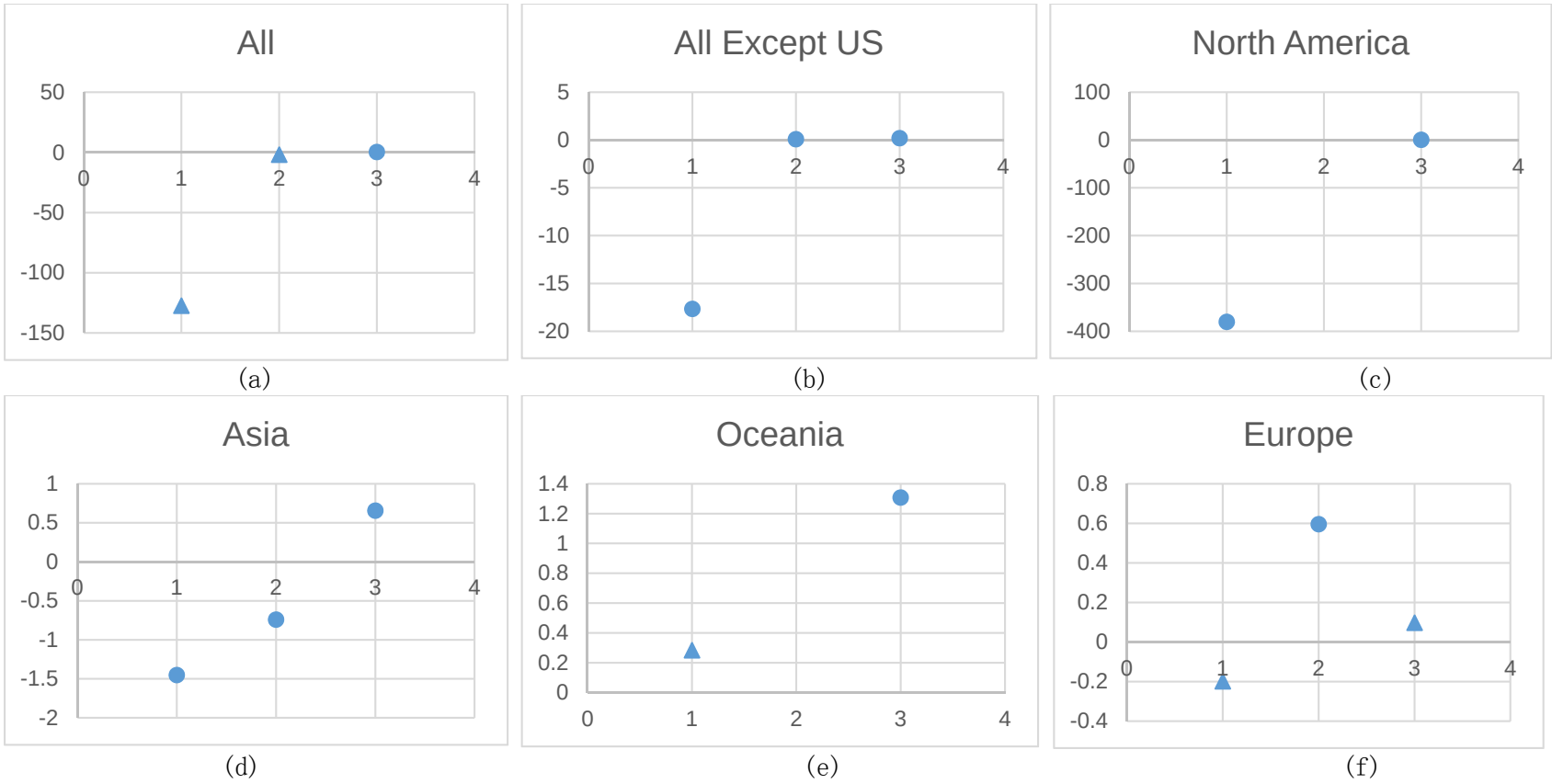
In each figure, the triangular mark represents insignificant coefficient, and the round marks represent significant coefficient. The number 1 on the horizontal axis represents pre-crisis period (1995-2006), 2 represents in-crisis period (2007-2009), 3 represents post-crisis period (2010-2014).

Figure 3b Coefficients of Exchange Rate Change, following Table 6



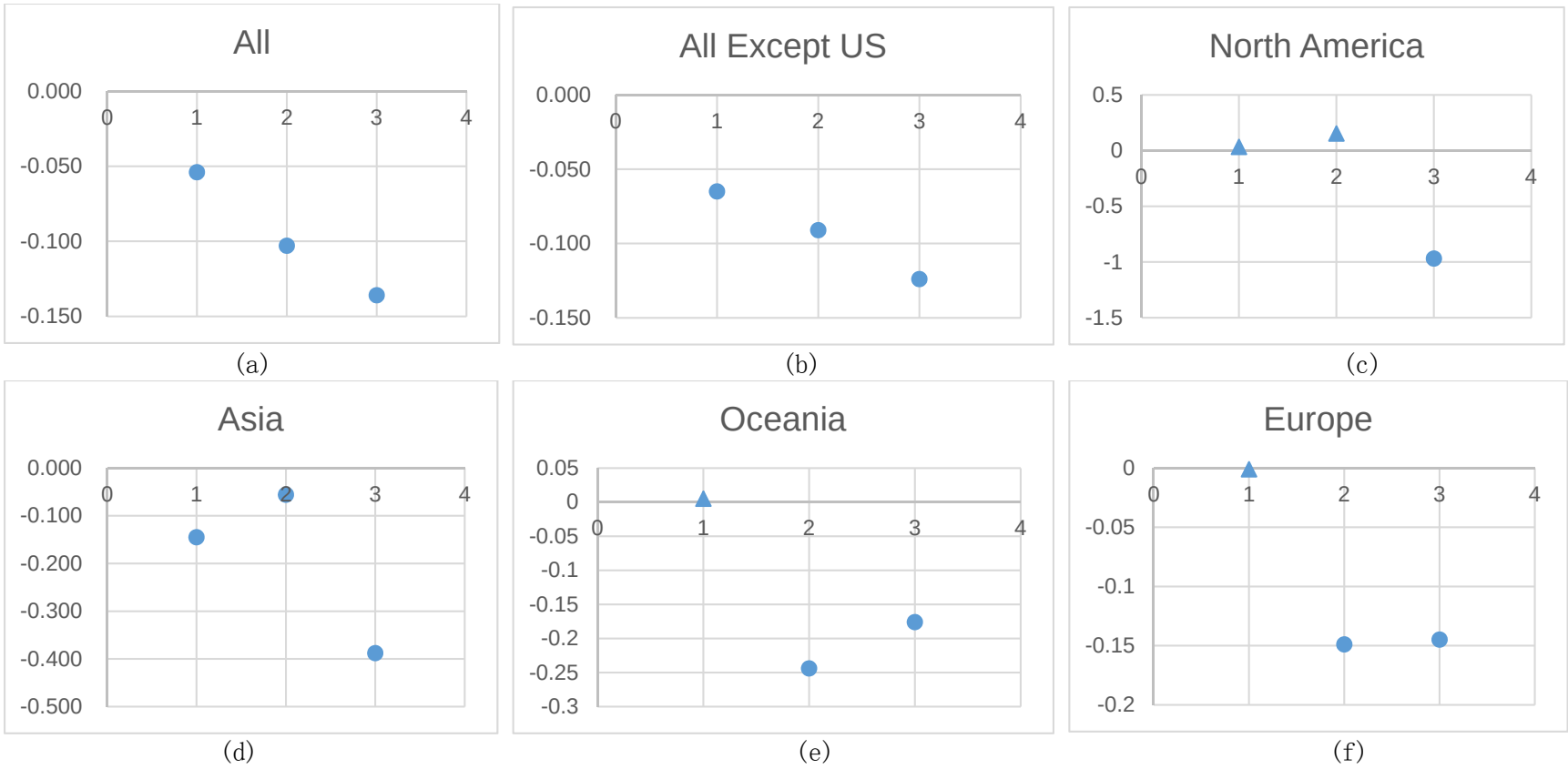
In each figure, the triangular mark represents insignificant coefficient, and the round marks represent significant coefficient. The number 1 on the horizontal axis represents pre-crisis period (1995-2006), 2 represents in-crisis period (2007-2009), 3 represents post-crisis period (2010-2014).

Figure 3c Coefficients of Exchange Rate Forward, following Table 6



In each figure, the triangular mark represents insignificant coefficient and round mark represents significant coefficient. The number 1 on the horizontal axis represents pre-crisis period (1995-2006), 2 represents in-crisis period (2007-2009), 3 represents post-crisis period (2010-2014).

Figure 3d Coefficients of Interest Rate Spread with US, following Table 6



In each figure, the triangular mark represents insignificant coefficient and round mark represents significant coefficient. The number 1 on the horizontal axis represents pre-crisis period (1995-2006), 2 represents in-crisis period (2007-2009), 3 represents post-crisis period (2010-2014).

Table 1 Descriptive Statistics for Macro Variables

	Mean	S.D.	Min	Max
Country-level Variable				
GDP growth (annual %)	2.823	3.030	15.240	-5.883
Interest rate spread (lending rate minus deposit rate, %)	3.544	1.505	7.186	-1.112
Inflation, consumer prices (annual %)	2.192	2.106	17.100	-4.023
Population growth (annual %)	0.810	0.778	5.322	-1.691
Household final consumption expenditure, etc. (annual % growth)	2.690	2.713	16.134	-4.763
Real effective exchange rate index (2010 = 100)	98.592	11.072	132.578	66.831
Openness	98.299	104.732	455.277	16.750
Market Returns	7.989	22.703	156.614	-52.561
Average Return	0.160	0.343	1.980	-0.619
interest spread with US	0.279	2.668	11.143	-6.165
Risk free rate	3.133	2.649	16.496	0.010
Foreign direct investment, net inflows (% of GDP)	5.542	9.364	87.443	-3.679
Exchange forward	26.215	165.951	1736.207	0.500
Lending interest rate	6.432	3.317	21.792	0.500
Firm-level Variable				
Sizes in USD, millions	943.1897	2708.387	0	54534.8
Market to Book Ratios	-12.0516	1616.61	-200008	5336.36
Turnover by Volume	5921499	71559433	0	3.17E+09
Total Return	27.65412	3464.012	-1	438999.6
Long-Term Debt	9668317	82978281	0	2.56E+09
Total Debt	13727334	1.11E+08	0	2.9E+09
Common Stock	3793165	21872731	-800845	5.19E+08
Common Equity	14716232	2.56E+08	-3.8E+08	1.38E+10
Total Asset	38628253	4.97E+08	0	2.71E+10
Net Sales	8674961	67026113	-611328	1.52E+09
Operating Income	396297	43084699	-5.2E+09	1.73E+08
Selling, General and Administrative Expenses	1493647	19977797	-355125	1.24E+09
Depreciation, Depletion and Amortization	402054.7	4015671	-54000	1.71E+08

Table 2a Correlations for Country-level Data

	GDP growth (annual %)	Interest rate spread (lending rate minus deposit rate, %)	Inflation, consumer prices (annual %)	Population growth (annual %)	Household final consumption expenditure, etc. (annual % growth)	Real effective exchange rate index (2010 = 100)	Openness	Market Returns	Risk free rate	Foreign direct investment, net inflows (% of GDP)	Lending interest rate
	1	2	3	4	5	6	7	8	9	10	11
1	1.000										

2	0.169***	1.000									
	24.105	-----									
3	0.162***	0.329***	1.000								
	23.089	49.039	-----								
4	0.139***	0.299***	0.374***	1.000							
	19.816	44.103	56.796	-----							
5	0.724***	0.117***	0.081***	0.084***	1.000						
	148.026	16.659	11.463	11.866	-----						
6	-0.157***	-0.096***	-0.102***	-0.068***	0.000	1.000					
	-22.339	-13.568	-14.475	-9.646	0.036	-----					
7	0.244***	0.341***	0.024***	0.570***	0.094***	-0.105***	1.000				
	35.405	51.182	3.436	97.912	13.253	-14.949	-----				
8	0.189***	0.067***	-0.048***	-0.029***	0.100***	-0.090***	0.008	1.000			
	27.192	9.534	-6.740	-4.020	14.197	-12.785	1.149	-----			
9	0.154***	0.233***	0.567***	0.272***	0.206***	0.002	-0.163***	0.084***	1.000		
	21.915	33.736	96.920	39.783	29.667	0.283	-23.269	11.953	-----		
10	0.306***	0.242***	0.047***	0.393***	0.136***	-0.040***	0.756***	0.026***	-0.064***	1.000	
	45.296	35.181	6.691	60.221	19.312	-5.608	162.960	3.645	-9.067	-----	
11	0.232***	0.505***	0.566***	0.363***	0.256***	-0.084***	0.015**	0.101***	0.893***	0.051***	1.000
	33.688	82.464	96.891	54.960	37.372	-11.886	2.069	14.345	279.350	7.199	-----

The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively.

Table 2b Correlations for Country-level Data

	Sizes in USD, millions	Market to Book Ratios	Turnover by Volume	Total Return	Long-Term Debt	Total Debt	Common Stock	Total Asset	Net Sales	Operating Income	Selling, General and Administrative Expenses	Depreciation, Depletion and Amortization
	1	2	3	4	5	6	7	8	9	10	11	12
1	1.000											

2	0.003	1.000										
	0.288	-----										
3	0.159***	0.000	1.000									
	15.917	0.047	-----									
4	0.000	0.019*	-0.002	1.000								
	-0.049	1.846	-0.162	-----								
5	0.317***	0.001	0.010	-0.003	1.000							
	33.120	0.075	0.984	-0.279	-----							
6	0.299***	0.001	0.008	-0.003	0.982***	1.000						
	31.013	0.076	0.803	-0.342	508.811	-----						
7	0.201***	0.001	-0.004	-0.004	0.575***	0.579***	1.000					
	20.279	0.082	-0.417	-0.361	69.672	70.382	-----					
8	0.153***	0.000	0.002	-0.003	0.702***	0.674***	0.353***	1.000				
	15.380	0.041	0.208	-0.328	97.702	90.225	37.350	-----				
9	0.304***	0.001	0.006	-0.003	0.845***	0.849***	0.509***	0.589***	1.000			
	31.583	0.082	0.595	-0.277	156.273	159.370	58.510	72.220	-----			
10	0.065***	0.000	0.004	0.001	0.021**	0.027***	0.039***	-0.194***	0.050***	1.000		
	6.479	0.010	0.350	0.117	2.121	2.717	3.816	-19.565	4.916	-----		
11	0.095***	0.000	-0.001	-0.003	0.548***	0.523***	0.275***	0.929***	0.569***	-0.226***	1.000	
	9.405	0.038	-0.095	-0.281	64.821	60.777	28.282	247.971	68.571	-22.925	-----	
12	0.030***	0.005	-0.030***	-0.013	-0.011	-0.015	-0.020*	-0.014	-0.018*	0.000	-0.013	1.000
	2.948	0.461	-2.949	-1.250	-1.127	-1.517	-1.956	-1.431	-1.736	-0.021	-1.304	-----

The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively.

Table 2c Correlation Table for Measures of Globalization

	Openness	FDI	1st difference of real effective exchange rate (in log form)	Exchange Rate Change	Exchange Rate Forward	Interest rate spread with US
	1	2	3	4	5	6
1	1.000					

2	0.455***	1.000				
	35.114	-----				
3	-0.025*	-0.066***	1.000			
	-1.706	-4.530	-----			
4	-0.019	-0.065***	0.999***	1.000		
	-1.336	-4.501	1411.041	-----		
5	0.021	-0.079***	0.211***	0.209***	1.000	
	1.411	-5.481	14.834	14.729	-----	
6	0.171***	-0.146***	0.127***	0.128***	0.075***	1.000
	11.956	-10.163	8.836	8.875	5.207	-----

The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively.

Table 2d Stationary Test

Method: ADF - Fisher Chi-square	Statistic	Prob.
GDP growth (annual %)	7126.270	0.000
Interest rate spread (lending rate minus deposit rate, %)	4817.090	0.000
Inflation, consumer prices (annual %)	7065.320	0.000
Population growth (annual %)	4044.100	0.000
Household final consumption expenditure, etc. (annual % growth)	7858.430	0.000
Real effective exchange rate index (2010 = 100)	1739.800	1.000
Exchange Rate Change	778.715	0.000
Exchange Rate Forward	775.096	0.000
Openness	3426.350	0.000
Market Excess Returns	10690.100	0.000
Foreign direct investment, net inflows (% of GDP)	5431.130	0.000
1st difference of real effective exchange rate (in log form)	775.385	0.000

Null: Unit root (assumes individual unit root process). Exchange rate change (defined as $(e_t-e_{t-1})/e_t$, where e_t is the exchange rate of foreign currencies in terms of U.S. dollars), Exchange rate forward proxied by the one year ahead actual percentage change of the exchange rate),

Table 3 Rate of Returns Pooled Regression Results (Dependent Variable: Firm Excess Returns) 1995-2014, Total Sample

	1	2	3	4	5	6	7	8	9	10	11
MKER	0.000 0.010	-0.005*** -12.990					-0.003*** -8.058	0.000 -0.882	-0.001*** -2.746	-0.003*** -8.146	0.001 1.175
Log Size			0.053*** 3.673	0.159*** 11.151			0.132*** 8.631	-0.062* -1.820			0.045 0.847
MTBR			0.000 1.629	0.000 1.075				0.000 1.448	0.000 1.330	0.000** 2.218	0.001** 2.291
Log Turnover								0.172 7.013	0.105*** 8.070	0.135*** 8.399	0.157*** 3.892
GDP Growth					0.022*** 6.645	0.045*** 13.908	0.045*** 14.434	0.025*** 7.651	0.039*** 12.925	0.045*** 13.929	0.068*** 10.937
IRSP					0.077*** 5.658	0.029** 1.960		0.016 0.973	0.043*** 3.127	0.054*** 3.414	0.022 0.808
Openness		0.095*** 12.320		0.111*** 15.154		0.057*** 5.333	0.091*** 12.193	0.068*** 5.168	0.105*** 8.913	0.078*** 7.167	0.090*** 3.918
Size									0.000** 2.538		
Size2									0.000* -1.922		
Turnover/Size										0.000 -1.150	
CONS											-0.090*** -15.872
POGR											-0.086** -2.396
LDIR											-0.051*** -3.543
c	-0.018 -1.028	-0.218*** -8.857	-0.173*** -4.085	-0.604*** -14.257	-0.442*** -7.684	-0.497*** -9.800	-0.683*** -15.597	-1.032*** -10.825	-1.111*** -12.301	-0.869*** -12.896	-0.742*** -5.874
Total Obs.	15920	15513	15099	14693	15778	15371	15488	13919	13932	13963	12649
Adjusted R-sq	0.000	0.020	0.001	0.019	0.004	0.015	0.027	0.016	0.023	0.032	0.032

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, MTBR represents market to book ratio, IRSP represents interest rate spread (lending interest rate minus risk free rate), SIZE2 represents square of size, CONS represents consumption growth, POGR represents population growth, LDIR represents lending interest rate.

Table 4a Rate of Returns Pooled Regression Results (Dependent Variable: Firm Excess Returns) Summary 1

	Full Sample				Full Sample Except US				North America			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	0.000	0.001***	-0.004**	0.007***	0.000*	0.002***	-0.003***	0.005***	0.006	-0.002***	0.007	0.008***
	-0.882	7.053	-2.030	24.113	1.875	8.224	-23.316	17.133	0.925	-2.970	0.064	11.539
Log Size	-0.062*	0.107***	0.287	0.004	0.106***	0.110***	0.094***	0.026***	-0.036	0.043	0.662	0.157***
	-1.820	12.050	1.160	1.064	15.806	11.475	10.684	3.617	-0.073	1.406	0.087	7.514
MTBV	0.000	0.002***	-0.001	0.000**	0.000	0.000	0.004***	0.000*	0.006	0.023***	-0.001	-0.001
	1.448	4.469	-0.345	-2.079	-0.146	1.002	7.018	-1.693	0.682	4.838	-0.019	-1.564
Log Turnover	0.172	-0.037***	-0.140***	0.028	-0.019***	-0.019***	-0.008***	0.014	0.005**	-0.011***	-0.533***	-0.092***
	7.013	-7.393	-0.680	9.590	-5.060	-3.857	-1.685	3.625	0.014	-0.503	-0.091	-6.401
GDP Growth	0.025***	-0.002**	0.065***	0.038***	0.037***	-0.006***	0.069***	0.039***	0.019	-0.080***	0.372	0.033
	7.651	-1.978	3.345	17.722	28.662	-3.711	50.410	18.267	0.281	-9.870	0.228	1.266
IRSP	0.016	-0.010**	0.059	-0.012***	-0.005*	-0.009*	-0.001	-0.010***	0.354	0.011	-0.605	-0.932***
	0.973	-2.261	0.625	-4.187	-1.933	-1.907	-0.310	-3.375	0.878	0.089	-0.117	-4.569
Openness	0.068***	0.021***	-0.004	0.046***	0.035***	0.008*	0.100***	0.062***	1.009	0.633***	-1.465	-2.079***
	5.168	6.229	-0.040	13.632	10.416	1.820	18.480	16.518	1.266	3.978	-0.098	-5.225
c	-1.032***	-0.206***	-0.376	-0.223***	-0.359***	-0.246***	-0.597***	-0.289***	-1.404	-0.235	3.607	3.693***
	-10.825	-10.669	-0.581	-11.637	-22.238	-10.804	-33.908	-14.492	-0.960	-0.687	0.138	4.646
Total Obs.	13919	6196	2841	4882	10847	4621	2251	3975	3784	1818	741	1225
Adjusted R-sqe	0.016	0.048	0.007	0.236	0.139	0.058	0.811	0.242	-0.001	0.125	-0.009	0.192

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, MTBV represents market to book ratio, IRSP represents interest rate spread (lending interest rate minus risk free rate).

Table 4b Rate of Returns Pooled Regression Results (Dependent Variable: Firm Excess Returns) Summary 2

	Asia				Oceania				Europe			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	-0.001***	0.001***	-0.005***	0.002***	0.001*	0.004***	0.015***	-0.004	0.003***	0.002***	0.004***	0.005***
	-5.578	3.076	-19.068	4.108	1.871	3.049	10.711	-1.433	10.408	3.643	15.075	9.542
Log Size	0.122***	0.202***	0.065***	-0.019	0.136***	0.031	0.323***	0.058	0.109***	0.077***	0.100***	0.074***
	7.786	8.890	2.980	-1.291	4.062	0.595	6.877	1.259	14.919	5.163	9.651	7.905
MTBV	0.000	0.000	0.002	0.000*	0.005	-0.001	0.031**	0.030*	0.000	-0.002	0.004***	0.000
	-0.264	0.551	1.646	-1.774	0.969	-0.184	2.301	1.651	0.733	-0.530	5.528	-0.113
Log Turnover	0.007	-0.036***	0.086	0.073	-0.063***	-0.023***	-0.179***	-0.014***	-0.017***	-0.012***	-0.047***	0.012
	0.656	-2.513	6.747	6.666	-3.001	-0.652	-5.560	-0.508	-4.323	-1.599	-9.437	2.872
GDP Growth	0.054***	-0.004	0.069***	0.100***	0.033***	0.044***	0.451***	-0.091**	0.057***	0.012	0.078***	0.041***
	29.117	-1.306	35.155	32.298	3.991	2.645	16.818	-2.119	22.709	1.353	28.473	6.986
IRSP	-0.174***	0.050***	-0.116***	-0.434***	-0.013	0.079***	0.974***	-0.866***	0.053***	-0.006	0.013*	0.029***
	-17.743	3.456	-5.016	-39.656	-0.924	4.293	10.233	-5.699	13.894	-0.584	1.839	3.369
Openness	0.170***	-0.017*	0.189***	0.440***	-1.172***	0.037	19.376***	-7.432***	0.108***	0.082	-0.089***	-0.112**
	18.514	-1.826	8.553	42.008	-6.491	0.135	11.982	-6.914	3.527	1.558	-2.613	-2.077
c	-0.293***	-0.579***	-0.797***	-0.152***	0.157	-0.753***	-13.586***	5.699***	-0.678***	-0.329***	-0.280***	-0.425***
	-8.874	-10.690	-19.331	-3.944	1.185	-3.313	-12.582	6.887	-19.554	-5.036	-5.782	-5.687
Total Obs.	6108	2680	1204	2224	864	313	199	352	2866	1264	640	962
Adjusted R-sqe	0.174	0.052	0.848	0.720	0.168	0.296	0.793	0.369	0.386	0.061	0.682	0.296

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, MTBV represents market to book ratio, IRSP represents interest rate spread (lending interest rate minus risk free rate).

Table 5 Rate of Returns Pooled Regression with Alternative Measures of Globalization (Dependent Variable: Firm Excess Returns) Total Sample 1995-2014

	13	14	15	16
Market Excess Return	0.137** 2.061	0.256*** 9.627	-0.004*** -9.099	-0.002*** -5.318
Log Size	8.714*** 3.954	7.014*** 11.953	0.146*** 9.690	0.111*** 6.809
GDP Growth	1.215** 2.546	4.510*** 17.773	0.043*** 13.833	0.037*** 11.110
Openness	0.029 1.374	0.081*** 2.854	0.074*** 9.266	0.040* 1.948
EXRC	114.903*** 2.776			
EXRF		41.226*** 3.353		
IRSPU			-0.055*** -8.332	
FDI				0.008*** 2.899
c	-34.911*** -5.706	- 44.710*** -20.518	-0.686*** -15.952	-0.579*** -12.261
Total Observations	12825	3379	15488	15218
Adjusted R-square	0.003	0.159	0.035	0.021

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, IRSP represents interest rate spread (lending interest rate minus risk free rate), EXRC represents exchange rate change (defined as $(e_t-e_{t-1})/e_t$, where e_t is the exchange rate of foreign currencies in terms of U.S. dollars), EXRF represents exchange rate forward proxied by the one year ahead actual percentage change of the exchange rate), IRSPU represents interest rate spread of foreign vs. U.S. risk free rates.

Table 6a Are Firm Excess Returns explained by Openness, controlling for FDI? (Dependent Variable: Firm Excess Returns) Summary 1

	Full Sample				Full Sample Except US				North America			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	-0.002*** -5.318	0.001*** 4.561	-0.008*** -6.697	0.007*** 21.546	0.000* 1.710	0.002*** 8.904	-0.003*** -22.325	0.005*** 15.886	0.002 0.219	-0.006*** -7.479	0.013 0.175	0.009*** 12.156
Log Size	0.111*** 6.809	0.010 1.475	0.121 1.183	0.059*** 14.447	0.086*** 20.746	0.086*** 17.237	0.089*** 14.060	0.050*** 10.024	-0.084 -0.609	0.045*** 3.273	-0.059 -0.048	0.023*** 2.767
GDP Growth	0.037*** 11.110	-0.009*** -5.984	0.061*** 4.397	0.039*** 18.342	0.033*** 26.142	-0.006*** -3.710	0.068*** 47.915	0.039*** 18.791	0.026 0.311	0.001 0.099	0.404 0.215	0.085*** 4.220
Openness	0.040* 1.948	0.027*** 3.610	0.084 0.712	-0.032*** -2.927	0.040*** 7.146	0.025*** 4.227	0.083*** 10.489	0.042*** 3.747	0.598 0.601	1.054*** 16.291	-0.330 -0.082	0.155 1.516
FDI	0.008*** 2.899	-0.001 -0.576	0.002 0.107	0.008*** 5.774	0.000 0.273	0.001 0.622	0.002** 2.006	0.001 0.731	-0.109 -0.726	-0.149*** -15.621	-0.115 -0.102	-0.070*** -3.421
c	-0.579*** -12.261	-0.172*** -9.015	-0.632*** -1.896	-0.230*** -18.491	-0.407*** -41.310	-0.339*** -28.109	-0.619*** -44.283	-0.287*** -20.683	0.182 0.321	-0.322*** -5.861	0.642* 0.098	-0.063*** -1.100
Total Obs.	15218	7051	2920	5247	12016	5379	2316	4321	4017	2006	763	1248
Adjusted R-sq	0.021	0.009	0.031	0.201	0.132	0.089	0.762	0.211	-0.001	0.179	-0.006	0.177

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, FDI represents foreign direct investment (percent of GDP).

Table 6b Are Firm Excess Returns explained by Openness, controlling for FDI? (Dependent Variable: Firm Excess Returns) Summary 2

	Asia				Oceania				Europe			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	-0.002*** -9.581	0.001*** 4.277	-0.005*** -27.461	0.006*** 12.194	0.000 0.347	0.005*** 3.951	0.000 -0.247	0.007*** 4.487	0.002*** 8.929	0.001*** 4.031	0.003*** 11.947	0.005*** 8.294
Log Size	0.139*** 20.687	0.176*** 35.237	0.166*** 15.039	-0.002 -0.143	0.075*** 6.664	-0.005 -0.283	0.041*** 2.622	0.044*** 2.956	0.077*** 13.339	0.064*** 9.409	0.045*** 5.388	0.092*** 12.756
GDP Growth	0.030*** 20.400	-0.004** -2.105	0.066*** 32.729	0.045*** 17.912	0.027*** 3.474	0.016 1.341	0.095* 1.751	-0.242*** -7.861	0.051*** 19.308	0.005 0.737	0.075*** 32.002	0.057*** 11.066
Openness	-0.039*** -5.370	0.012*** 2.708	-0.008 -1.057	-0.014 -0.904	-1.329*** -12.648	-1.087*** -9.054	2.611*** 3.122	-3.267*** -9.414	0.197*** 6.503	0.123*** 2.606	-0.046 -1.283	-0.143*** -3.226
FDI	0.013*** 17.298	0.005*** 6.243	0.014*** 10.929	0.010*** 4.872	-0.023*** -4.023	-0.011** -2.290	0.203*** 5.019	-0.131*** -6.220	-0.007*** -6.964	0.001 0.851	-0.001* -1.753	-0.001 -0.756
c	-0.509*** -28.765	-0.555*** -28.514	-0.721*** -24.937	-0.196*** -6.145	0.140 1.883	0.160 1.848	-2.820*** -6.556	2.170 10.314	-0.502*** -22.182	-0.408*** -13.089	-0.364*** -11.538	-0.223*** -6.601
Total Obs.	6231	2750	1235	2246	1005	442	203	360	3638	1712	657	1269
Adjusted R-sq	0.301	0.413	0.753	0.210	0.236	0.277	0.616	0.356	0.162	0.077	0.651	0.216

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, FDI represents foreign direct investment (percent of GDP).

Table 6c Are Firm Excess Returns explained by Openness, controlling for Exchange Rate Change? (Dependent Variable: Firm Excess Returns) Summary 1

	Full Sample				Full Sample Except US				North America			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	0.137** 2.061	0.198*** 8.172	-0.004*** -33.921	0.005*** 19.090	0.175*** 10.071	0.305*** 12.599	-0.005*** -26.309	0.002*** 6.369	0.806 0.770	0.179** 2.070	-- --	0.010*** 20.056
Log Size	8.714*** 3.954	-3.199*** -4.611	0.059*** 17.254	0.067*** 17.767	8.560*** 20.352	11.879*** 21.074	0.073*** 13.946	0.062*** 11.978	-12.191 -0.733	-4.896*** -2.894	-- --	-0.013** -2.090
GDP Growth	1.215** 2.546	-2.149*** -15.059	0.048*** 41.009	-0.036*** -21.129	2.498*** 18.459	-2.564*** -18.194	0.034*** 15.320	-0.032*** -20.103	0.954 0.095	-12.612*** -11.268	-- --	-0.028 -0.739
Openness	0.029 1.374	0.033*** 5.130	0.001*** 15.307	0.000*** 8.453	0.027*** 4.925	0.035*** 6.890	0.001*** 17.709	0.001*** 13.818	0.343 0.336	0.885*** 15.051	-- --	-0.001 -1.469
EXRC	114.903*** 2.776	-34.619*** -3.641	2.178*** 37.810	-0.371*** -4.882	37.287*** 6.205	76.999*** 7.198	1.800*** 24.167	-0.917*** -10.580	-102.686 -0.246	-165.20*** -6.083	-- --	-1.076*** -3.013
c	-34.911*** -5.706	-2.779 -1.279	-0.555*** -60.653	-0.157*** -12.959	-37.662*** -37.370	-30.050*** -21.853	-0.695*** -45.881	-0.212*** -16.406	22.732 0.330	14.982** 2.232	-- --	0.208*** 3.058
Total Obs.	12825	5783	1766	3574	9709	4197	1354	2865	3920	1909	--	973
Adjusted R-sq	0.003	0.049	0.791	0.367	0.106	0.175	0.699	0.350	-0.001	0.208	--	0.385

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, EXRC represents exchange rate change (defined as $(e_t-e_{t-1})/e_t$, where e_t is the exchange rate of foreign currencies in terms of U.S. dollars). The results of North America for 2007-2009 is near singular due to lack of observations.

Table 6d Are Firm Excess Returns explained by Openness, controlling for Exchange Rate Change? (Dependent Variable: Firm Excess Returns) Summary 2

	Asia				Oceania				Europe			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	0.048** 2.016	0.003*** 8.397	-0.001 -1.568	0.000 0.242	0.123* 1.917	0.005*** 4.636	-- --	0.002 1.451	0.274*** 10.236	0.001** 2.573	0.000 0.459	0.007*** 13.707
Log Size	14.536*** 13.284	0.198*** 11.960	0.183*** 9.523	0.045*** 3.924	4.239*** 3.447	-0.008 -0.481	-- --	0.029** 2.175	7.214*** 12.538	0.068*** 9.511	-0.007 -1.088	0.085*** 13.818
GDP Growth	1.584*** 9.600	-0.044*** -20.879	0.132*** 39.462	-0.045*** -18.629	2.406*** 2.813	0.011 0.751	-- --	-0.154*** -4.957	4.597*** 17.102	0.022*** 3.414	0.027*** 8.872	0.087*** 16.158
Openness	0.025*** 4.272	0.000** 2.279	0.005*** 24.226	0.001*** 13.278	-0.975*** -8.696	-0.011*** -8.385	-- --	-0.001 -0.549	0.081*** 2.974	0.001** 2.294	0.001*** 2.839	0.000 -1.149
EXRC	- 89.736*** -10.760	1.330*** 7.694	26.979*** 39.118	-1.484*** -8.540	60.873*** 3.545	0.255 1.184	-- --	-2.942*** -8.184	89.489*** 7.179	-0.171 -0.973	0.771*** 9.705	1.345*** 7.043
c	- 44.916*** -15.627	-0.275*** -5.805	-3.179*** -42.878	-0.093*** -3.253	-4.140 -0.556	0.171* 1.932	-- --	0.165 0.983	- 42.281*** -19.421	-0.421*** -14.337	-0.466*** -18.397	-0.358*** -12.558
Total Obs.	4068	1712	598	1188	991	428	--	289	3526	1600	465	1021
Adjusted R-sq	0.101	0.332	0.817	0.558	0.142	0.282	--	0.463	0.174	0.082	0.444	0.384

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, EXRC represents exchange rate change (defined as $(e_t-e_{t-1})/e_t$, where e_t is the exchange rate of foreign currencies in terms of U.S. dollars). The results of Oceania for 2007-2009 is near singular due to lack of observations.

Table 6e Are Firm Excess Returns explained by Openness, controlling for Exchange Rate Forward? (Dependent Variable: Firm Excess Returns) Summary 1

	Full Sample				Full Sample Except US				North America			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	0.256*** 9.627	0.177*** 8.501	-0.004 -0.619	0.010*** 40.139	0.175*** 10.350	0.395*** 15.860	-0.008*** -45.764	0.007*** 20.682	1.002 1.165	0.018 0.331	-- --	0.008*** 12.190
Log Size	7.014*** 11.953	8.037*** 16.829	0.267 1.032	0.063*** 16.708	9.269*** 21.289	9.740*** 17.011	0.090*** 19.570	0.076*** 14.147	-10.871 -0.713	5.295*** 6.280	-- --	0.028*** 3.402
GDP Growth	4.510*** 17.773	-2.204*** -14.393	0.101 1.288	0.040*** 16.783	2.556*** 18.770	-1.736*** -10.801	0.165*** 82.448	0.035*** 14.854	0.908 0.092	-2.971*** -3.535	-- --	0.109*** 7.105
Openness	0.081*** 2.854	0.014** 1.991	-0.001 -0.305	0.000 -1.203	0.020*** 3.566	0.004 0.594	0.000 0.630	0.000*** 4.724	0.478 0.477	0.717*** 9.587	-- --	0.001* 1.758
EXRF	41.226*** 3.353	-127.31*** -14.463	-1.891 -0.507	0.334*** 4.409	-32.904*** -4.971	-17.659* -1.730	0.082*** 4.502	0.182* 1.881	-303.659 -0.747	-380.47*** -17.449	-- --	0.224 0.989
c	-44.710*** -20.518	-24.967*** -20.028	-0.979 -1.068	-0.231*** -19.912	-39.274*** -37.746	-29.147*** -21.235	-0.812*** -59.869	-0.322*** -24.616	18.987 0.285	-39.383*** -9.846	-- --	-0.222*** -4.693
Total Obs.	3379	5345	1625	3864	9260	3858	1233	2938	3943	1776	--	1174
Adjusted R-sq	0.159	0.126	0.002	0.450	0.110	0.157	0.897	0.270	-0.001	0.259	--	0.176

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, EXRF represents exchange rate forward proxied by the one year ahead actual percentage change of the exchange rate). The results of North America for 2007-2009 is near singular due to lack of observations.

Table 6f Are Firm Excess Returns explained by Openness, controlling for Exchange Rate Forward? (Dependent Variable: Firm Excess Returns) Summary 2

	Asia				Oceania				Europe			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	0.091*** 3.688	0.006*** 15.963	-0.010*** -30.231	0.011*** 21.350	0.200*** 3.018	0.005*** 3.792	-- --	0.013*** 7.981	0.256*** 9.627	0.001*** 3.299	0.005*** 17.530	0.006*** 11.599
Log Size	15.814*** 13.349	0.111*** 6.915	0.308*** 46.836	0.006 0.405	3.760*** 3.081	-0.010 -0.647	-- --	0.075*** 5.724	7.014*** 11.953	0.058*** 7.813	0.038*** 4.246	0.090*** 13.735
GDP Growth	1.647*** 9.391	-0.019*** -8.485	0.175*** 39.133	0.025*** 7.189	2.638*** 3.011	0.017 1.209	-- --	-0.290*** -10.303	4.510*** 17.773	0.004 0.715	0.059*** 11.509	0.048*** 9.525
Openness	0.017*** 2.798	0.000 0.312	0.000*** -5.646	0.000*** 4.426	-0.874*** -7.279	-0.011*** -8.727	-- --	-0.017*** -7.931	0.081*** 2.854	0.002*** 6.433	-0.001*** -3.998	-0.002*** -5.923
EXRF	- 59.162*** -5.863	-1.453*** -8.386	-0.743** -2.559	0.655*** 3.978	- 60.420*** -3.480	0.284 1.478	-- --	1.307*** 2.800	41.226*** 3.353	-0.199 -1.139	0.595*** 4.941	0.097 0.540
c	- 46.435*** -15.365	-0.296*** -6.793	-1.250*** -27.280	-0.076* -1.820	-8.709 -1.130	0.148* 1.744	-- --	1.068*** 8.175	- 44.710*** -20.518	-0.439*** -17.536	-0.218*** -8.031	-0.208*** -7.363
Total Obs.	3909	1524	544	1297	935	384	--	290	3379	1539	414	1010
Adjusted R-sq	0.084	0.370	0.925	0.297	0.120	0.258	--	0.576	0.159	0.093	0.775	0.304

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, EXRF represents exchange rate forward proxied by the one year ahead actual percentage change of the exchange rate). The results of Oceania for 2007-2009 is near singular due to lack of observations.

Table 6g Are Firm Excess Returns explained by Openness, controlling for Interest Rate Differential with US? (Dependent Variable: Firm Excess Returns) Summary 1

	Full Sample				Full Sample Except US				North America			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	-0.004*** -9.099	0.001*** 3.898	-0.007*** -4.795	0.005*** 17.844	0.000 -1.054	0.000* 1.753	-0.004*** -32.382	0.003*** 9.363	0.006 1.011	-0.002** -2.533	0.013 0.156	0.007*** 10.047
Log Size	0.146*** 9.690	0.014** 2.174	0.059 0.569	0.040*** 11.003	0.089*** 21.712	0.101*** 21.410	0.058*** 29.457	0.051*** 12.180	-0.125 -1.157	0.043*** 2.880	-0.035 -0.029	0.023*** 2.775
GDP Growth	-0.043*** 13.833	-0.007*** -5.030	0.050*** 2.732	0.054*** 27.101	-0.031*** 24.321	-0.006*** -4.348	0.059*** 51.502	0.050*** 25.006	0.029 0.469	-0.080*** -8.410	0.348 0.213	0.049** 2.525
Openness	0.001*** 9.266	0.000 0.805	0.000 0.672	0.000*** -4.351	0.000*** 9.326	0.000*** -2.882	0.001*** 14.052	0.000 -1.164	0.001 0.238	0.006*** 4.085	-0.011 -0.237	0.010*** 7.543
IRSPU	-0.055*** -8.332	-0.054*** -25.214	-0.103*** -3.076	-0.136*** -58.465	-0.047*** -30.141	-0.065*** -33.041	-0.091*** -43.623	-0.124*** -41.472	0.025 0.299	0.033 1.120	0.153 0.078	-0.970*** -9.529
c	-0.686*** -15.952	-0.189*** -10.235	-0.387 -1.117	-0.044*** -3.651	-0.408*** -40.380	-0.386*** -28.758	-0.528*** -95.194	-0.081*** -6.270	0.194 0.432	-0.191*** -2.910	0.705 0.132	-0.312*** -6.022
Total Obs.	15488	7321	2920	5247	12286	5649	2316	4321	4017	2006	763	1248
Adjusted R-sq	0.035	0.107	0.019	0.706	0.175	0.232	0.862	0.449	-0.001	0.069	-0.006	0.220

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, IRSPU represents interest rate spread of foreign vs. U.S. risk free rates.

Table 6h Are Firm Excess Returns explained by Openness, controlling for Interest Rate Differential with US? (Dependent Variable: Firm Excess Returns) Summary 2

	Asia				Oceania				Europe			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	-0.002*** -8.037	-0.002*** -7.248	-0.005*** -24.709	0.002*** 4.534	0.001 1.516	0.005*** 3.857	-0.008*** -18.431	0.005*** 4.382	0.003*** 11.253	0.001*** 3.414	0.001** 2.374	0.002*** 3.648
Log Size	0.166*** 20.857	0.128*** 10.896	0.147*** 12.137	0.051*** 4.815	0.069*** 6.067	0.003 0.149	0.041** 2.530	0.033*** 2.675	0.072*** 12.494	0.066*** 9.171	0.047*** 5.533	0.090*** 14.484
GDP Growth	0.035*** 23.156	0.017*** 9.729	0.063*** 28.287	0.108*** 31.456	0.024*** 2.695	0.013 0.915	-0.077*** -5.143	-0.293*** -12.670	0.054*** 18.821	0.007 1.075	0.026*** 6.909	0.060*** 13.745
Openness	0.000*** 16.227	0.001*** 13.402	0.001*** 13.707	-0.001*** -12.690	-0.012*** -11.383	-0.011*** -7.000	0.002 0.735	-0.011*** -6.188	0.001** 2.316	0.002*** 3.466	0.001** 2.214	-0.001*** -3.577
IRSPU	-0.042*** -12.438	-0.145*** -34.644	-0.056*** -7.817	-0.388*** -29.474	0.009 1.261	0.005 0.669	-0.244*** -27.581	-0.176*** -7.075	0.026*** 6.112	-0.001 -0.247	-0.149*** -13.255	-0.145*** -15.542
c	-0.651*** -27.723	-0.857*** -23.550	-0.728*** -21.858	-0.029 -0.955	0.026 0.358	0.116 1.146	0.005 0.032	1.587*** 13.417	-0.442*** -20.450	-0.432*** -14.569	-0.394*** -12.873	-0.067** -2.434
Total Obs.	6501	3020	1235	2246	1005	442	203	360	3638	1712	657	1269
Adjusted R-sq	0.158	0.330	0.736	0.374	0.205	0.208	0.895	0.445	0.157	0.073	0.622	0.368

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, IRSPU represents interest rate spread of foreign vs. U.S. risk free rates.

Table 7a Are Firm Excess Returns explained by Openness, controlling for country and firm level variables? (Dependent Variable: Firm Excess Returns) Summary 1

	Full Sample				Full Sample Except US				North America			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	-0.001***	0.001***	-0.004***	0.005***	0.000*	0.004***	-0.005***	0.004***	0.000	-0.004***	--	-0.018***
	-3.520	4.437	-15.757	16.662	-1.747	12.376	-23.733	13.918	1.434	-8.610	--	-10.269
Log Size	0.000	0.003***	0.000	0.000	0.000	0.000	0.000	0.000	0.003**	0.041***	--	-0.001***
	0.721	4.237	-1.361	-1.611	-0.907	-0.775	0.003	-1.515	2.546	13.926	--	-7.539
MTBR	0.184***	0.147***	0.070***	0.106***	0.130***	0.153***	0.101***	0.090***	0.020	0.076***	--	0.151***
	21.465	16.610	5.162	9.334	14.928	12.967	6.314	7.028	1.136	3.273	--	6.070
Log Turnover	-0.092***	-0.089***	-0.055***	-0.030***	-0.069***	-0.066***	-0.044***	-0.027***	-0.018	-0.043***	--	-0.088***
	-17.489	-18.690	-5.844	-3.919	-13.809	-8.403	-4.829	-2.979	-1.348	-2.625	--	-4.962
LDTA	0.015	0.072***	-0.380***	-0.008	0.305***	0.386***	-0.030	0.117***	0.032*	-0.044	--	-0.001
	1.611	3.491	-10.764	-1.307	22.853	10.700	-0.688	4.091	1.815	-1.249	--	-0.086
GDP Growth	0.069***	-0.001	0.092***	0.074***	0.072***	-0.005	0.118***	0.086***	0.042***	0.104***	--	0.340***
	29.203	-0.377	29.241	25.773	32.009	-1.312	39.915	30.643	5.153	5.869	--	7.049
IRSP	0.047***	0.131***	0.091***	-0.004	0.020***	0.132***	0.070***	-0.025***	-0.023	0.255	--	2.084***
	12.247	24.039	9.122	-0.627	5.235	18.397	7.995	-3.894	-0.640	1.405	--	3.835
Openness	0.014***	-0.029***	0.048***	0.087***	0.057***	-0.030***	0.091***	0.118***	0.253***	-0.034	--	-1.273**
	3.772	-4.377	5.567	17.493	14.287	-4.261	10.124	20.182	4.274	-0.134	--	-1.979
CONS	-0.019***	0.004	-0.032***	-0.054***	-0.020***	0.022***	-0.029***	-0.059***	0.044***	-0.153***	--	0.617***
	-7.998	1.030	-7.886	-21.712	-9.579	4.983	-9.287	-24.479	4.918	-9.024	--	17.639
POGR	0.000	0.123***	-0.077***	-0.045***	-0.023***	0.087***	-0.073***	-0.093***	-0.953***	0.856***	--	3.790***
	-0.050	8.675	-8.689	-3.355	-3.361	5.151	-11.994	-6.562	-12.746	7.557	--	9.793
LDIR	-0.091***	-0.128***	-0.008	-0.063***	-0.077***	-0.129***	-0.082***	-0.054***	-0.092***	-0.157***	--	0.319**
	-51.975	-49.340	-1.541	-19.346	-41.887	-32.273	-22.418	-16.976	-17.656	-23.736	--	2.066
Profitability	0.000	0.010***	0.005	0.000	0.000	0.011**	0.032***	0.000	-0.031**	0.038	--	-0.029**
	0.622	2.657	0.617	0.552	0.388	2.435	3.336	0.513	-1.964	1.624	--	-2.083
DPTA	-0.161	-1.392***	1.136***	1.078***	-0.300	-2.543***	3.210***	-0.591	-1.682***	-1.473***	--	-0.670
	-0.779	-5.280	2.685	3.959	-0.958	-5.410	3.996	-1.462	-5.126	-3.648	--	-1.418
Uniqueness	0.002***	0.007	0.003	0.003***	0.003	0.012	0.056***	0.003***	-0.037**	0.035	--	-0.047***
	3.411	1.237	0.245	2.900	1.574	1.470	3.578	3.630	-2.146	1.449	--	-2.658
Asset Turnover	0.000**	0.000	0.000	0.000***	0.000*	0.000	0.000	0.000	0.000	0.000	--	0.000
	2.134	0.843	0.962	4.263	-1.806	-0.276	-0.393	-0.047	0.560	1.266	--	-1.637
c	0.121***	0.224***	-0.225***	0.077***	0.007	0.037	-0.225***	0.033	1.191***	-0.508	--	-11.560***
	6.225	8.640	-6.620	3.192	0.383	1.010	-5.788	1.273	8.029	-1.067	--	-5.333
Total Obs.	8578	3645	1729	3204	5992	2279	1239	2474	3085	1527	--	939
Adjusted R-sqe	0.354	0.482	0.904	0.495	0.722	0.650	0.770	0.789	0.690	0.624	--	0.524

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. In this table, MKER represents market excess return, MTBR represents market to book ratio, DPTA represents division of depreciation to total assets, LDTA represents ratio of long-term debt to total assets, IRSP represents interest rate spread (lending interest rate minus risk free rate), CONS represents consumption growth, POGR represents population growth, LDIR represents lending interest rate, DPTA represents division of depreciation to total assets and Uniqueness is proxied by the ratio of selling expenses to sales. The results of North America for 2007-2009 is near singular due to lack of observations.

Table 7b Are Firm Excess Returns explained by Openness, controlling for country and firm level variables? (Dependent Variable: Firm Excess Returns) Summary 2

	Asia				Oceania				Europe			
	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014	1995-2014	1995-2006	2007-2009	2010-2014
MKER	-0.001*** -5.946	0.000 -0.538	-0.009*** -24.890	0.008*** 16.648	-0.001 -0.995	0.013*** 4.606	-- --	-0.021*** -3.798	0.002*** 5.400	0.005*** 8.106	0.007* 1.795	0.011*** 7.089
Log Size	0.000 -0.523	0.000 -0.002	0.002 1.068	0.000 -1.177	0.007 0.765	0.014 0.877	-- --	0.028 1.404	0.005 1.173	0.039*** 3.651	0.048*** 2.796	-0.003** -1.975
MTBR	0.042*** 2.905	0.016 0.717	0.003 0.159	-0.081*** -4.450	0.068 1.304	-0.063 -0.670	-- --	0.119* 1.854	0.103*** 6.660	0.051** 2.416	-0.019 -0.446	0.172*** 6.040
Log Turnover	0.043*** 4.733	0.062*** 4.609	0.059*** 3.709	0.101*** 8.164	-0.032 -0.948	0.016 0.243	-- --	-0.043 -1.156	-0.039*** -4.318	-0.015 -1.288	0.018 0.690	-0.044** -2.572
LDTA	-0.040 -0.942	0.059 0.823	-0.336*** -4.557	0.011 0.244	-0.298*** -3.441	-0.233 -1.419	-- --	-0.344*** -3.222	0.067 1.585	0.191*** 4.174	-0.232** -2.349	-0.225*** -3.937
GDP Growth	0.100*** 52.478	0.027*** 4.879	0.064*** 11.125	0.111*** 26.793	-0.031 -1.236	0.007 0.156	-- --	0.124 1.540	0.074*** 8.692	-0.023 -1.604	0.058*** 2.756	0.257*** 11.091
IRSP	-0.037*** -3.106	0.062*** 3.614	-0.358*** -10.819	1.396*** 16.391	0.040 1.343	0.121*** 3.201	-- --	-1.070*** -4.087	0.052*** 7.576	0.096*** 6.702	0.100 0.809	0.153*** 7.413
Openness	0.205*** 23.025	0.107*** 7.181	0.109*** 4.523	-0.586*** -11.809	-2.188*** -5.448	-0.679 -1.014	-- --	-10.664*** -5.623	0.248*** 3.979	0.229*** 3.665	0.613 0.519	1.019*** 5.568
CONS	-0.031*** -14.010	0.014** 2.540	-0.113*** -19.871	-0.038*** -14.391	0.067*** 3.744	0.042 0.942	-- --	-0.086** -2.338	0.003 0.322	-0.008 -0.864	0.016 0.317	-0.074*** -3.760
POGR	-0.067*** -7.262	-0.035* -1.681	-0.019 -1.387	-0.807*** -20.390	-0.340*** -7.059	-0.249* -1.751	-- --	-0.231** -2.551	0.348*** 6.593	0.123** 2.293	0.358 0.310	0.480*** 4.547
LDIR	-0.183*** -26.936	-0.175*** -20.820	0.463*** 13.259	-0.670*** -20.598	-0.113*** -6.899	-0.201*** -3.608	-- --	-0.193*** -4.676	-0.011** -2.295	-0.080*** -9.425	0.114 0.822	0.107*** 4.565
Profitability	0.000 1.394	0.012*** 2.648	0.045 1.131	0.000 1.476	0.026** 2.333	-0.037*** -3.328	-- --	0.044 0.918	0.014** 2.353	0.014 1.111	-0.013 -1.045	0.028** 2.149
DPTA	-1.081** -2.199	-1.324** -2.052	1.050 1.282	-1.752*** -3.163	-3.988*** -2.960	-7.009*** -3.239	-- --	-3.639** -2.433	0.269 0.387	0.889 1.032	-4.187 -1.480	1.335 0.725
Uniqueness	0.005 1.489	0.023** 2.313	0.085* 1.815	0.006*** 3.206	0.042** 2.303	-0.077*** -5.137	-- --	0.070 0.891	0.017*** 2.727	-0.007 -0.451	-0.020 -0.866	0.031** 2.384
Asset Turnover	0.000 -0.126	0.002*** 3.902	-0.001** -2.356	0.000 -1.198	-0.001 -0.368	0.020** 2.030	-- --	-0.019 -1.419	0.000 0.812	0.000 0.329	0.000 0.599	0.000 0.489
c	0.020 0.684	-0.077 -1.566	-1.115*** -15.044	-0.622*** -11.993	1.839*** 6.207	1.491* 1.786	-- --	9.102*** 6.119	-0.854*** -8.142	-0.315*** -3.031	-1.721 -0.706	-2.334*** -8.216
Total Obs.	3938	1390	789	1759	436	146	--	181	977	535	182	260
Adjusted R-sqe	0.637	0.329	0.890	0.655	0.417	0.502	--	0.431	0.327	0.714	0.766	0.725

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents the market excess return, MTBR represents market to book ratio, DPTA represents division of depreciation to total assets, LDTA represents ratio of long-term debt to total assets, IRSP represents interest rate spread (lending interest rate minus risk free rate), CONS represents consumption growth, POGR represents population growth, LDIR represents lending interest rate, DPTA represents division of depreciation to total assets and Uniqueness is proxied by the ratio of selling expenses to sales. The results of Oceania for 2007-2009 is near singular due to lack of observations.

Table 8a Rate of Returns Pooled Regression Results for Balanced Sub-sample (Dependent Variable: Firm Excess Returns) 1995-2014

	1	2	3	4	5	6	7	8	9	10	11
MKER	0.038 0.614	0.049 0.777					0.103* 1.663	0.115* 1.859	0.094 1.522	0.095 1.537	-0.090* -1.923
Log Size			11.096*** 8.592	11.045*** 8.289			11.091*** 8.218	14.493*** 4.151	0.066 1.294	0.066 1.311	9.412*** 3.044
MTBR			0.052 1.069	0.058 1.194				0.058 1.161			0.001 0.019
Log Turnover								-3.101 -1.300	3.838*** 3.074	6.900*** 7.100	-3.927* -1.778
GDP Growth					-1.206** -2.098	-0.782 -1.340	-0.448 -0.780	-0.516 -0.897	-0.254 -0.439	-0.450 -0.783	6.575*** 5.685
IRSP					-4.968*** -2.775	-8.634*** -4.168		-4.467** -2.141	-4.648** -2.157	-6.596*** -3.216	8.364*** 3.519
Openness		0.357*** 2.904		0.376*** 3.039		0.591*** 3.989	0.381*** 3.108	0.614*** 3.680	0.352** 2.281	0.621*** 3.653	-0.703*** -3.396
Size									0.001** 2.124		
Size2									0.000 -0.675		
Turnover/Size										0.000*** -4.590	
CONS											-0.539 -0.436
POGR											-10.917* -1.744
LDIR											-11.511*** -20.624
c	-14.957*** -13.451	-26.088*** -7.113	-46.731*** -12.043	-57.914*** -11.062	3.263 0.574	-4.102 -0.660	-57.598*** -10.062	-42.638*** -5.342	-36.591*** -4.411	-50.990*** -6.283	36.669*** 4.487
Total Obs.	1177	1124	1180	1127	1175	1122	1124	1119	1119	1119	1119
Adjusted R-sq	-0	0.006	0.058	0.064	0.008	0.022	0.065	0.069	0.066	0.077	0.477

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, MTBR represents market to book ratio, IRSP represents interest rate spread (lending interest rate minus risk free rate), SIZE2 represents square of size, CONS represents consumption growth, POGR represents population growth, LDIR represents lending interest rate.

Table 8b Rate of Returns Pooled Regression Results for Balanced Sub-sample (Dependent Variable: Firm Excess Returns)

	Full Sample			
	1995-2014	1995-2006	2007-2009	2010-2014
MKER	0.115* 1.859	-0.340*** -4.575	0.303*** 5.591	0.621*** 4.346
MTBV	0.058 1.161	0.095* 1.949	0.035 0.926	-0.289 -1.031
Log Size	14.493*** 4.151	9.953** 2.507	23.989*** 5.967	-0.460 -0.082
Log Turnover	-3.101 -1.300	-3.641 -1.262	-9.421*** -3.710	4.204 1.217
GDP Growth	-0.516 -0.897	-5.230*** -5.793	4.493*** 7.950	-3.243 -1.469
IRSP	-4.467** -2.141	-13.754*** -4.757	-3.284 -1.642	5.290 1.631
Openness	0.614*** 3.680	0.581*** 2.923	0.059 0.318	-1.060*** -3.712
constant	-42.638*** -5.342	14.161 1.372	-35.103*** -3.499	8.685 0.766
Total Obs.	1119	705	177	237
Adjusted R-sqe	0.069	0.166	0.536	0.160

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, MTBV represents market to book ratio, IRSP represents interest rate spread (lending interest rate minus risk free rate).

Table 8c Rate of Returns Pooled Regression with Alternative Measures of Globalization for Balanced Sub-sample (Dependent Variable: Firm Excess Returns) 1995-2014

	13	14	15	16
Market Excess Return	0.254*** 4.399	0.075 1.261	0.117* 1.918	-0.040 -0.670
Log Size	7.408*** 5.661	9.804*** 7.435	10.400*** 7.702	10.994*** 8.600
GDP Growth	-0.721 -1.362	0.635 1.108	-0.275 -0.483	1.509*** 2.645
Openness	0.356*** 2.601	0.590*** 4.373	0.505*** 3.946	1.264*** 8.431
EXRC	-248.023*** -12.286			
EXRF		-212.545*** -9.189		
IRSPU			-4.476*** -4.138	
FDI				-12.479*** -11.669
c	-44.747*** -7.662	-61.784*** -10.769	-60.198*** -10.447	-64.897*** -11.521
Total Observations	1066	1118	1124	1124
Adjusted R-square	0.184	0.133	0.079	0.171

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, IRSP represents interest rate spread (lending interest rate minus risk free rate), EXRC represents exchange rate change (defined as $(e_t-e_{t-1})/e_t$, where e_t is the exchange rate of foreign currencies in terms of U.S. dollars), EXRF represents exchange rate forward proxied by the one year ahead actual percentage change of the exchange rate), IRSPU represents interest rate spread of foreign vs. U.S. risk free rates.

Table 8d Are Firm Excess Returns explained by Openness, controlling for country and firm level variables? (Dependent Variable: Firm Excess Returns) Balanced Sub-sample

	Full Sample			
	1995-2014	1995-2006	2007-2009	2010-2014
MKER	-0.001** -2.000	-0.003*** -5.187	0.003*** 4.449	0.005*** 3.257
Log Size	0.000 0.137	0.000 0.083	0.000 0.215	-0.001 -0.247
MTBR	0.094*** 3.016	0.086** 2.373	0.319*** 6.048	-0.021 -0.338
Log Turnover	-0.037* -1.688	-0.042 -1.549	-0.162*** -5.053	0.043 1.128
LDTA	-0.008 -0.696	0.030 0.630	0.089 1.163	-0.011* -1.903
GDP Growth	0.064*** 5.500	0.067*** 4.802	0.079*** 3.268	-0.047** -1.999
IRSP	0.081*** 3.432	0.122*** 3.980	-0.015 -0.413	-0.029 -0.493
Openness	0.007*** -3.089	0.001 0.386	-0.001 -0.260	-0.008 -1.391
CONS	-0.003 -0.255	-0.093*** -6.453	-0.024 -0.607	0.029 1.268
POGR	-0.137** -2.187	0.336*** 4.210	0.143 0.814	0.353** 2.163
LDIR	-0.114*** -20.364	-0.142*** -20.912	-0.041* -1.891	-0.062* -1.935
Profitability	0.085** 2.271	0.102** 2.542	0.208*** 4.873	0.065 0.759
DPTA	1.715** 2.237	-0.448 -0.580	-0.680 -0.512	-1.282 -0.757
Uniqueness	0.254*** 2.978	0.255*** 2.767	0.049 0.657	-0.005 -0.027
Asset Turnover	0.000 1.152	0.000 1.205	0.000*** -3.401	0.000* 1.697
c	0.283*** 3.200	0.105 0.874	-0.111 -0.748	0.238 1.152
Total Obs.	1119	705	177	237
Adjusted R-sqe	0.479	0.626	0.616	0.203

All equations are estimated by GLS with correction for heteroskedasticity. The top entry in each cell is the coefficient estimate; the lower entry is the absolute value of the t-statistics calculated from the White heteroskedasticity-consistent standard errors. The t-statistics *, **, *** indicate the corresponding coefficients are significant at the 10%, 5%, 1% level respectively. MKER represents market excess return, MTBR represents market to book ratio, DPTA represents division of depreciation to total assets, LDTA represents ratio of long-term debt to total assets, IRSP represents interest rate spread (lending interest rate minus risk free rate), CONS represents consumption growth, POGR represents population growth, LDIR represents lending interest rate, DPTA represents division of depreciation to total assets and Uniqueness is proxied by the ratio of selling expenses to sales.