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## Equity Home Bias, Financial Integration, and Regulatory Reforms: Implications for Emerging Asia

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# EQUITY HOME BIAS, FINANCIAL INTEGRATION, AND REGULATORY REFORMS: IMPLICATIONS FOR EMERGING ASIA

*Cyn-Young Park and Rogelio V. Mercado, Jr.*

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ADB Working Paper Series on Regional Economic Integration

## Equity Home Bias, Financial Integration, and Regulatory Reforms: Implications for Emerging Asia

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Cyn-Young Park\* and Rogelio V. Mercado, Jr.\*\*  
No. 133 | May 2014

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## **Abstract**

With increasing financial integration and improving regulatory quality, we expect equity home bias to decline. Drawing on the supportive evidence for such trends in advanced economies, this paper investigates the links between financial integration and regulatory quality; and equity home bias in emerging Asia. To test the significance, a pooled OLS estimation was used. The results show that greater global and regional financial integration and better regulatory quality significantly lower equity home bias against global and regional stocks. The estimates also find that the lag value of the home bias significantly lowers equity home bias against global and regional equities; while bank assets and stock market capitalization increase the said bias against global and regional equities. Interestingly, volatility of foreign exchange rate significantly increases equity home bias against regional stocks, but not for the home bias against global stocks. The results suggest that if ongoing financial regulatory reforms lead to less information asymmetry and lower transaction and information costs in emerging Asia, equity home bias will continue to decline, allowing for greater portfolio diversification and more efficient allocation of capital resources.

*Keywords:* equity home bias; financial integration; and regulatory reforms

*JEL Classification:* F36, G11, and G28

## 1. Introduction

Since French and Poterba (1991) noted the phenomenon that investors overweight domestic assets in their portfolios, equity home bias has been a topic of major interest for financial economists. Theoretically, gains from international portfolio diversification are substantial. In perfectly integrated international financial markets, where financial assets of similar risks are priced similarly regardless of where they are traded, investors are expected to hold international portfolios and exploit the gains of international portfolio diversification. With the trend of financial liberalization since the 1990s, there has been a considerable reduction in barriers to international portfolio investment. However, earlier studies suggested that equity home bias remains significant (See Lewis, 1999; and Karolyi and Stulz, 2002 for literature review).

A significant body of literature has focused on the role of financial openness in lowering equity home bias. In theory, financial openness and integration provides better opportunities for local investors to allocate their portfolios in international equities that yield the highest returns given the same risks. By allowing for portfolio adjustments towards equities that offer higher returns at lower risks, financial integration enables equity home bias to decline. Accordingly, many studies in the field have explored the link between growing financial integration and declining equity home bias (Baele et al., 2007; Mondria and Wu, 2010; and Sørensen et al., 2007). The empirical findings suggest that greater financial market integration or openness leads to a decline equity home bias, although these findings are rather limited to the advanced economies in Europe, Japan, and the United States. It would be interesting to see whether a similar trend of growing financial integration and declining equity home bias emerges in emerging market economies like those in emerging Asia<sup>1</sup> given the region's progress towards greater financial integration (Park and Lee, 2011).

Another branch of literature looks into the impact of institutional quality. Bhamra et al., (2012), Gelos and Wei (2005), and Khurana and Michas (2011) studied the significance of governance, regulatory and institutional quality, transparency, and similar factors in explaining equity home bias. In fact, Carrieri, Chaieb, and Errunza (2013) argue that various local factors such as institutional quality, corporate governance, and information transparency present implicit barriers to financial integration in emerging market economies despite de jure liberalization measures. The findings regarding the effects of financial regulatory reforms on home bias remain varied. Some argued that policies or regulatory reforms that affect pricing and quantity of foreign investments increase portfolio home bias; while others found that policies or reforms that lower asymmetric information between domestic and foreign investors lower portfolio home bias. Hence, the design and nature of regulations and regulatory policies can have either

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<sup>1</sup> Throughout this paper, emerging Asia refers to a group of fast growing economies in Asia. It includes People's Republic of China (PRC); Hong Kong, China; India; Indonesia; Republic of Korea (Korea); Malaysia; Philippines; Singapore; Taipei, China; and Thailand. For purposes of comparing intra-regional trends, this paper groups Hong Kong, China; Korea; Singapore; and Taipei, China as newly-industrialized economies (NIEs); and Indonesia; Malaysia; Philippines; and Thailand as Association of Southeast Asian Nations (ASEAN-4). China and India are presented separately. Advanced economies include country members of the European Monetary Union, Japan, the United Kingdom, and the United States.



positive or negative impact on portfolio home bias. Given the wave of international financial regulatory reforms in the aftermath of the global financial crisis of 2008–2009, it would also be interesting to assess the effect of regulatory quality on portfolio home bias. Specifically, it would be important to know whether better regulatory quality increases or decreases equity home bias in emerging Asia since it would have important policy implications on what types of reforms regulators can pursue and what impact they may have on investors' portfolio choice.

This study contributes to existing literature on the link between financial integration and equity home bias in the context of emerging Asia by assessing the impact of increasing global and regional financial integration on the degree of equity home bias. Another major contribution of this paper is that it investigates other factors that could help explain the behaviors of equity home bias in emerging Asia, particularly the significance of regulatory quality in the region. These innovations enrich our understanding of evolution of equity home bias in the context of financial integration and regulatory reforms.

This paper is organized as follows. Section 2 offers literature survey on equity home bias, financial integration, and regulatory reforms. Section 3 discusses the measures of equity home bias and their patterns in emerging Asia. Section 4–7 provide hypotheses, model specification, results, and robustness checks. Section 8 summarizes the findings and provides policy implications.

## 2. Review of Literature

A large body of literature has focused on the equity home bias puzzle, offering various reasons for its prevalence. Coeurdacier and Rey (2013) argue heterogeneity across investors of different nationality would lead to differences in their optimal investment portfolios; for example, different hedging motives and transaction costs would potentially create a bias towards national assets in the investment portfolios. One major explanation is that domestic equities may offer a better hedge against the risks that are specific to a country than to foreign equities. These risks include domestic inflation, human capital, and foreign returns of domestic firms with overseas operations (Baxter and Jermann, 1997; and Lewis, 1999). The other leading explanation focuses on the effects of transaction and information costs on investors' international portfolio positions (Ahearne et al., 2004; Andrade and Chhaochharia, 2010; Cai and Warnock, 2004; Chan et al., 2005; Van Nieuwerburgh and Veldkamp, 2009; and Warnock, 2002). Ahearne et al. (2004) suggest that transaction costs related to international investments may not be huge, but a proxy for information cost is a significant determinant for a country's weight in US investors' portfolios. Warnock (2002) confirms that transaction costs do not help explain equity home bias; while Chan et al. (2005) show that familiarity variables have significant but asymmetric effects on domestic and foreign equity bias. Van Nieuwerburgh and Veldkamp (2009) present a model where investors' learning process contributes to the lock-in effect of their investment in local assets. Applying their model, Andrade and Chhaochharia (2010) show that the endowments of information about a new country by foreign direct investment might translate into an increase in their portfolio holdings in the same country.

A growing literature highlights the role of investor behavior in explaining equity home bias. For instance, Gomez et al., (2003) explained that investors may have a preference for holding assets that are highly correlated with domestic wealth (domestic stocks) because this enables them to “keep up with the local Joneses (reference group)”. Morse and Shive (2011) argued that patriotism could explain some of the equity home bias beyond the effects of transaction barriers, diversification, information, and familiarity. Anderson et al. (2010) found that investors from culturally distant countries invest less abroad and underweight culturally distant target markets. Reflecting the increasing delegation of investment decisions to professional fund managers, Dziuda and Mondria (2012) explained how home bias can be further magnified by uncertainty about the ability of professional portfolio managers in addition to asymmetric information at the individual level.

Recent studies in the field have argued that increasing financial integration, which reduces the costs of financial transactions and information, can lead to a significant decline in equity home bias. Baele et al. (2007) and Sørensen et al. (2007) suggested that as capital markets become more globally integrated, investors can trade assets freely and at lower cost. In addition, deepening economic and financial integration would lower information asymmetry between domestic and foreign investors, leading to a further reduction in equity home bias. Baele et al. (2007) tested this hypothesis and found that the decline in equity home bias is more pronounced for countries that are more financially linked with each other than those that are not. Sørensen et al. (2007) found that a decline in debt and equity home bias is associated with increased international risk sharing and financial integration. Other studies have also looked into this link. Mondria and Wu (2010) argued that home bias increases with information capacity and decreases with financial openness. They developed a theoretical model showing informational advantage on domestic assets versus foreign assets at the early stage of financial liberalization encourages domestic investors to hold more domestic assets, thereby increasing home bias. However, as domestic investors gather more information on foreign assets in subsequent periods, foreign information builds up and so home bias declines. Bekaert and Wang (2009) showed that information and familiarity variables, and proxies for the degree of capital market openness are significant in explaining not only home bias, but also foreign bias. Other studies focus on the emergence of regional bias. For instance, Balli et al. (2010), Jochem and Volz, (2011), and Schönmaker and Bosch (2008) documented the increase of a regional portfolio bias with the introduction of the euro in EMU countries.

However, focus on the literature dealing with home bias and financial integration has been largely limited to the equity home bias phenomenon in advanced economies of Europe, Japan, and the United States. Only recently, few papers examine the equity home bias phenomenon in emerging market economies in Asia and South America. For example, Borensztein and Loungani (2011) studied the determinants of bilateral equity home bias in selected Asian economies. Using gravity model to identify the determinants of home bias, they found greater distance and real foreign exchange volatility increase bilateral home bias; while common language and bilateral trade reduce it. Sendi and Bellalah (2010) surveyed equity home bias in both advanced and emerging economies including those in Asia, Africa, and South America. Their findings show that home bias is greater in emerging than in advanced economies. Mercado (2013) provided evidence that increased financial globalization is relevant in

explaining declining equity home bias in emerging Asia, but the analysis does not look into the impact of regional financial integration on equity home bias.

Another stream of studies turned to governance, regulatory and institutional quality, transparency, and similar other factors in explaining equity home bias. For instance, Gelos and Wei (2005) offer evidence that foreign portfolio investments are smaller in countries with limited transparency; and that there is a large propensity for portfolio investment funds to exit those countries during crises. Coeurdacier and Rey (2013) and Bhamra et al., (2012) argued that regulatory policies and reforms affecting transaction costs, tax treatments between foreign and domestic portfolio incomes, capital controls, and differences in legal and regulatory frameworks create financial frictions among investors, causing portfolio home bias to increase; while Khurana and Michas (2011) found that compliance with international financial reporting system lowers equity home bias in the United States.

International financial institutions involved in international financial regulatory reforms have recognized the impact the proposed financial regulatory reforms may have on portfolio and banking home bias. The Financial Stability Board (2012a) has stated that ongoing regulatory reforms can increase portfolio home bias through their design and/or implementation in other jurisdictions. Although the global policy development aspect of financial regulatory reforms has made substantial progress as of June 2012, national and international policy implementation aspect of financial regulatory reforms continues to lag behind (Table 1). It is in this area of financial regulatory reforms where policy design and implementation could give rise to increased portfolio home bias. Furthermore, improving bank capitalization and addressing “*too-big-to-fail*” are important issues in ongoing financial regulatory reforms. Similarly, the direction of current reforms in the banking regulation, such as tightening of lending standards may be responsible for increased home bias in bank lending in the euro area (BIS 2012).

This paper draws on these recent studies exploring the link between financial integration and equity bias, similar to Baele et al. (2007), Sørensen et al. (2007) and others. However, unlike the previous studies, this paper also highlights the role of regulatory quality in determining home bias in emerging Asia.

**Table 1: Status Report on the Progress in Implementing the G20 Recommendations on Financial Regulatory Reform (As of June 2012)**

Recommendations	Global policy development	National/International policy implementation
Improving bank capital and liquidity standards	On track	In progress
Ending “Too-Big-To-Fail”	On track	In progress
Expanding and redefining the regulatory perimeter	Completed	In progress
Creating continuous core markets—OTC derivatives reforms	On track	In progress
Creating continuous core markets—Strengthening and converging accounting standards	On track	On track
Creating continuous core markets—Other market reforms	On track	On track
Developing macro-prudential frameworks and tools	On track	In progress
Strengthening adherence to international supervisory and regulatory standards	On track	On track
Strengthening of FDB’s Capacity, Resources, and Governance	On track	n.a.

Note: The status (color) of each category of regulatory reforms were determine based on the number of specific reforms with the same progress (either no progress, on track (light green), in progress (amber), or completed (dark green). In some cases, specific reforms under each category may have different status progress, in which case, the status of each category was determined based on the progress of specific reforms with the same status.

Source: Financial Stability Board Secretariat Status Report and Scorecard (2012b). [http://www.financialstabilityboard.org/publications/r\\_120619b.pdf](http://www.financialstabilityboard.org/publications/r_120619b.pdf)

### 3. Emerging Asia’s Equity Home Bias

#### 3.1 Measuring Equity Home Bias

In order to evaluate the equity home bias in emerging Asia, we employ a measure that is commonly used in the literature (Baele et al., 2007; Bekaert and Wang (2009), Chan et al., 2005; Fidora et al., 2007; Jochem and Volz, 2011; and Sørensen et al., 2007). That is, the deviation of actual holdings of domestic equity from the optimal share of domestic equity in the international portfolio.

Equity home bias of country  $i$  is measured as the share of actual ( $ACT_{i,t}$ ) foreign portfolio investment to the optimal ( $OPT_{i,t}$ ) foreign portfolio weights, given by:

$$HB_{i,t} = 1 - \frac{(ACT_{i,t})}{(OPT_{i,t})}. \quad (1)$$

If the actual holdings of foreign equities are lower than the optimal share of foreign equities, then a country is said to exhibit home bias since it prefers domestic equities over foreign. In

such cases, the home bias measure ( $HB_{i,t}$ ) takes values close to 1. On the other hand, if actual holdings of foreign equities are equal to the optimal share of foreign equities, then that country does not exhibit home bias; and the measure ( $HB_{i,t}$ ) takes the value of 0. There may be instances when actual holdings of foreign assets exceed optimal foreign portfolio holdings. In such cases,  $HB_{i,t}$  takes negative values suggesting that a country does not exhibit home bias, but instead shows a propensity to invest abroad<sup>2</sup>.

The share of foreign equity in the total portfolio equity of country  $i$  ( $ACT_{i,t}$ ) is calculated as the ratio of its foreign equity assets ( $FA_{i,t}$ ) and the total (foreign and domestic) equity holdings. The domestic equity holdings are computed as the difference between the country's total year-end stock market capitalization ( $MC_{i,t}$ ) and the amount of stocks held by foreign investors or portfolio equity liabilities ( $FL_{i,t}$ ). The actual foreign portfolio weights are derived using the formula:

$$ACT_{i,t} = \frac{FA_{i,t}}{FA_{i,t} + (MC_{i,t} - FL_{i,t})}. \quad (2)$$

For a home bias against regional equities, the data on actual foreign equity holdings refers to those that are held within the region.

A key point of consideration in measuring equity home bias is how to estimate optimal foreign portfolio weights ( $OPT_{i,t}$ ). Two common methods use stock market capitalization ratios and mean-variance approach.

The first approach is a direct computation of the *share of domestic and total world stock market capitalization*. This is based on the theory of the International Capital Asset Pricing (ICAPM) that the market portfolio is the only one optimal portfolio for any given risk free rate. This method is used by Baele et al. (2007), Bekaert and Wang (2009), Borensztein and Loungani (2011), Fidora et al. (2007), Sørensen et al. (2007) and Warnock (2002) to estimate the optimal foreign portfolio weights. The advantages of using stock market capitalization ratios to measure optimal foreign portfolio weight are that they are easy to implement and do not suffer from yearly fluctuations in values. But the effectiveness of this method is subject to the validity of the ICAPM assumptions. The ICAPM will be valid only when all markets are efficient and perfectly integrated, so the law of one price holds.

The second approach is based on the classical *mean-variance approach* of portfolio optimization developed by Markowitz (1952). The modern portfolio diversification theory assumes that investors are risk-averse such that they will choose the less risky of the two assets even if both have the same expected returns. According to this theory, an investor will choose a risky asset only if he is compensated with higher returns. This theory is applied in the context of choosing between any number of assets including the choice between domestic and foreign

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<sup>2</sup> This paper disregards situations where investors overinvest abroad. In cases when actual foreign asset holdings exceed optimal foreign portfolio weights, home bias is assigned to a number (0.0001) very close to 0. Similarly, when actual foreign asset holdings is significantly less than the optimal foreign weight, i.e. the value is 1, a number (0.9999) very close to 1 is used.

equities such that domestic investors choose to hold more domestic equities if the expected domestic returns are high and the variance of the returns is low; or hold more foreign equities if the expected domestic returns is low and the variance of the returns is high. Several studies including Baele et al. (2007) adopted this approach to measure equity home bias. The classical mean-variance approach could offer a fairly accurate measure of equity home bias as it takes into account asset returns which is crucial in portfolio choice theory. But, Merton (1980) and Baele et al. (2007) pointed out the use of historical mean data as proxy for expected excess returns can be misleading as equity returns could be highly volatile.

The two parameters of interest in the mean-variance approach are the expected portfolio returns (mean) and the volatility of portfolio returns (variance). The formula used to calculate expected portfolio returns is as follows:

$$E[R_{p,t}] = \sum_i w_i E[R_{p,t}] \quad (3)$$

where  $w_i$  refers to the portfolio weights between choosing domestic and foreign equity equities. The following formula calculates the optimal foreign weights.

$$w_i = OPT_{i,t} = \frac{\sum^{-1} \mu_e}{i' \sum^{-1} \mu_e} \quad (4)$$

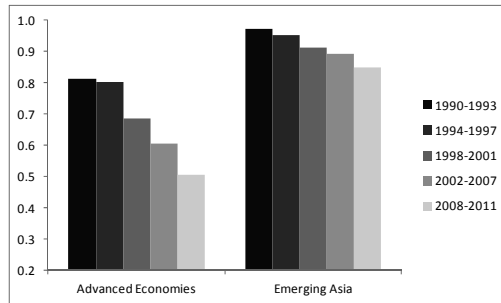
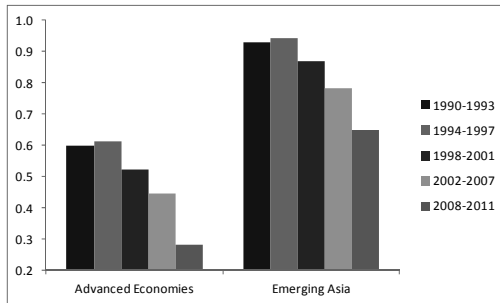
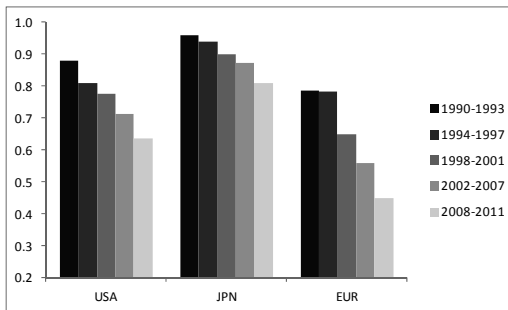
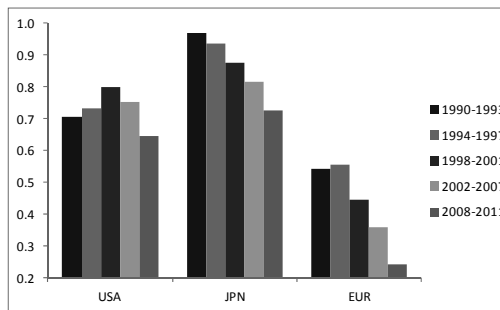
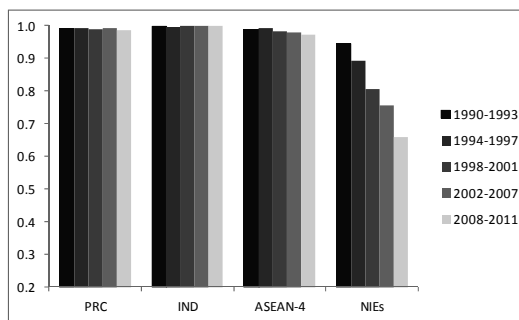
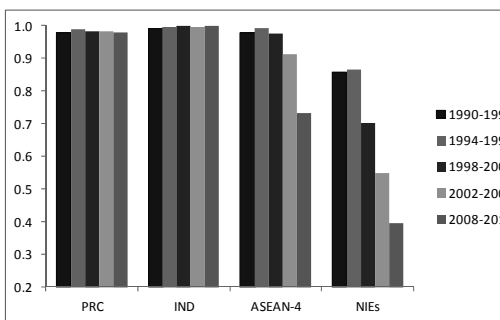
where  $\mu_e$  is a row vector of expected excess returns,  $i'$  is a unit column vector, and  $\Sigma$  is the variance-covariance matrix in the form:

$$\Sigma = \begin{pmatrix} \sigma_{d,t}^2 & \sigma_{df,t} \\ \sigma_{df,t} & \sigma_{f,t}^2 \end{pmatrix}. \quad (5)$$

Several datasets were used to construct the measures for equity home bias against global and regional stocks. Appendix I presents the list of indicators and their sources and some notes.

### 3.2 Patterns of Equity Home Bias in Emerging Asia

Figures 1a-c present the estimates for equity home bias against global stocks for advanced and emerging Asian economies using stock market capitalization ratios and mean-variance approach. Home biases are generally greater in emerging Asian markets than those in advanced markets—a finding that is consistent with the previous literature. Among advanced markets, the European Union economies have the lowest home bias, followed by the United States and Japan. For emerging Asia, relatively more open economies of NIEs have the lowest equity home bias, followed by ASEAN-4, PRC, and India. Although home biases have been declining in both advanced and emerging Asian markets, the declines are also more pronounced in advanced markets than in emerging Asian markets. In emerging Asia, equity home bias remains relatively high, although declining in recent years particularly for NIEs.

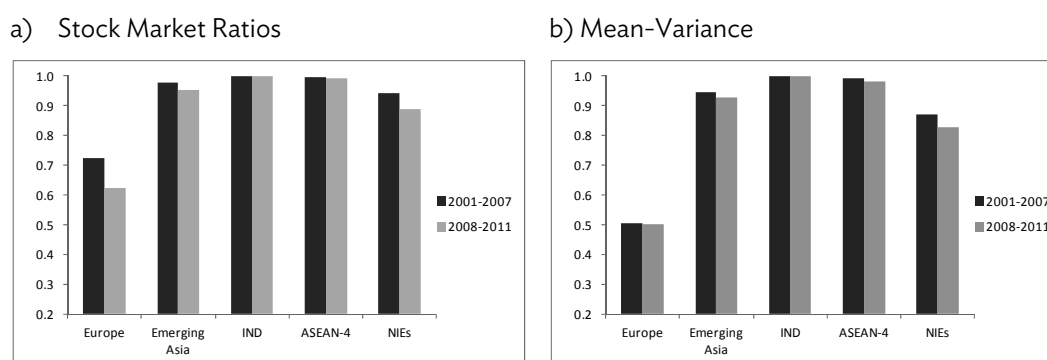
**Figure 1: Equity Home Bias (against global equities)****a) Advanced and Emerging Asia****Stock Market Ratios****Mean-Variance****b) Advanced Economies****Stock Market Ratios****Mean-Variance****c) Emerging Asia****Stock Market Ratios****Mean-Variance**

Note: Values are unweighted average of individual country home bias with respect to global equities. Data on foreign assets and liabilities are taken from the External Wealth of Nations Database and extended using IMF's International Investment Position Database. Market capitalization is taken from World Development Indicators. Equity returns are computed using Datastream stock price index.

Source: Authors' calculation.

Figures 2 a-b show equity home bias against regional equities for various regional groupings. Home biases against the regional equities are again higher in emerging Asian economies than in the European Union economies. Nonetheless, equity home bias against the regional equities declined somewhat from 2001-2007 to 2008-2011 periods, consistent with the view of growing cross-border equity holdings among emerging Asian economies. Among emerging Asia regional groupings, NIEs have the lowest equity home bias against regional stocks, compared to ASEAN-4 economies and India. This pattern is consistent with those for equity home bias against global stocks.

**Figure 2: Equity Home Bias (against regional equities)**



Note: Values are unweighted average of individual country home bias with respect to regional equities. Data on regional equity holding are taken from IMF's Coordinated Portfolio Investment Survey (which excludes PRC and Taipei, China). Data on total foreign assets and liabilities are taken from the External Wealth of Nations Database and extended using IMF's International Investment Position Database. Market capitalization is taken from World Development Indicators. Equity returns are computed using Datastream stock price index.

Source: Authors' calculation.

Based on the figures, several observations are noted. First, the mean-variance approach yields generally lower measures of equity home bias compared to the stock market capitalization ratios. This can be explained partly by the fact that mean-variance approach is based on equity returns, which exhibits considerable fluctuations as the optimal foreign portfolio weight is highly responsive to equity returns such that when global returns are very low, optimal foreign portfolio weight also declines. Although both measures have their advantages and disadvantages as mentioned in the previous subsection, they show consistent patterns on emerging Asia's equity home bias.<sup>3</sup> Second, the region's home bias against global or regional equities is higher than those in advanced economies particularly for the European Union economies. Among emerging Asian economies, highly open economies of NIEs have the lowest home bias, supporting the link between financial openness and home bias. Finally, comparing the panels of Figures 1 and 2, home biases in Europe and Emerging Asia are higher when measured against the regional equities, than those measured against the global equities. This may reflect that the share of regional equities in total foreign equities is generally small.

<sup>3</sup> Both measures show similar patterns when applied to individual emerging Asia countries and to the region as a whole as they have strong predictive relationship through their correlations. For home bias against global equities, the correlation between both measures of home bias is relatively high at 0.77. For home bias against regional equities, the correlation is 0.56, which still implies strong predictive relationship between both measures.



## 4. Hypotheses

This paper tests two hypotheses. First, it will test whether greater financial integration at the global and regional levels lowers equity home bias in emerging Asia. This hypothesis rests on theoretical and empirical studies that argue greater financial openness through lower financial transactions and information costs increase cross-border financial holdings. Since the region has made significant progress toward global and regional financial integration in recent years (Park and Lee, 2011), it is expected that equity home bias against global and regional equities should also exhibit downward trend in recent years.

Second, this study also tests the hypothesis that better regulatory quality leads to a decline in equity home bias. This conjecture is based on earlier findings that show greater transparency and lesser information asymmetry results to greater cross-border financial flows and lower portfolio home bias<sup>4</sup>. It is expected that as regulatory quality improves there will be greater transparency and lesser information asymmetry between domestic and foreign investors, thereby lowering equity home bias. However, it is equally feasible to expect that better domestic regulatory quality leads to an increase in home bias, if it encourages domestic investors to put more weight on domestic assets against foreign assets in their portfolios. The type of regulation also matters for the effect of regulation on home bias. For instance, if the regulation is about price or quantity control, improved effectiveness of such regulation would lead to an increase in home bias.

## 5. Model Specification

To test the two hypotheses, this paper follows the model specification of Baele et al. (2007). The model specification utilizes macroeconomic determinants of equity home bias including financial integration and regulatory quality. Although measures of information symmetry, transactions costs, and information costs are also important determinants of equity home bias, these variables are not included in the regression model because it is assumed that the financial integration measures and other control variables should capture their effects on equity home bias. Following Baele et al. (2007), a pooled dataset for ten emerging Asian economies is specified given a regression model:

$$\begin{aligned} \Delta HB_{i,t} = & \alpha_i + \beta_1 HB_{i,t-1} + \beta_2 \Delta FI_{i,t} + \beta_3 \Delta STOCK_{i,t-1} + \beta_4 \Delta BANK_{i,t-1} + \beta_5 RQI_{i,t-1} + \\ & \beta_6 \Delta FXVOL_{i,t-1} + \beta_7 \Delta TRADE_{i,t-1} + \varepsilon_{i,t} \end{aligned} \quad (6)$$

$\Delta HB_{i,t}$  refers to the change (first difference) in equity home bias—calculated using stock market capitalization ratios and classical mean-variance approach derived from the data sources and computation in Section 2.  $\alpha_i$  is the intercept.  $HB_{i,t-1}$  is first lag value of the equity home bias measure.  $\Delta FI_{i,t}$  refers to the change (first difference) in global (regional) financial

<sup>4</sup> See Gelos and Wei (2005) for related literature.

integration measures using *de jure* and *de facto* measures.  $\Delta STOCK_{i,t-1}$  is the lag change (first difference) in stock market capitalization scaled by nominal gross domestic product (GDP). Data are sourced from World Bank's World Development Indicators and World Federation of Exchanges.  $\Delta BANK_{i,t-1}$  refers to lag change (first difference) of total assets of deposit money banks normalized by nominal GDP. Data are taken from IMF's International Financial Statistics (IFS).  $RQI_{i,t-1}$  is the lagged regulatory quality index taken from the World Governance Indicators.<sup>5</sup>  $\Delta FXVOL_{i,t-1}$  pertains to the lag change (first difference) of real foreign exchange volatility calculated as the coefficient of variation of real foreign exchange<sup>6</sup>. Data are drawn from the IFS.  $\Delta TRADE_{i,t-1}$  refers to the lag value of the change (first difference) in total trade (total intraregional) defined as exports plus imports scaled by nominal GDP. Data are sourced from Direction of Trade Statistics of the IMF. Finally,  $\varepsilon_{i,t}$  represents the error term.

The first key parameter of interest is the measures of financial integration. Financial globalization is expected to reduce equity home bias because of lower transaction and information costs and greater exposure to portfolio alternatives. This paper employs both *de jure* and *de facto* measures of global and regional financial integration. Very few earlier studies adopted to use both *de jure* and *de facto* measures to investigate the relationship between financial integration and home bias. *De jure* measure is taken from the capital account openness index of Chinn and Ito (2009); while the *de facto* measure uses the sum of foreign portfolio assets and liabilities from the External Wealth of Nations Database (Lane and Milesi-Ferretti 2007) and extended using IMF's International Investment Position and scaled by nominal GDP. Regional *de jure* measure refers to the average of individual country measures in the region; while *de facto* measure refers to the sum of intra-regional foreign portfolio assets and liabilities scaled by regional GDP. Measures of financial globalization reveal that although capital account restrictions persist in many emerging Asian countries, cross-border financial holdings continue to rise in the region (Figures 3a and 3b). Measures of regional financial integration show that *de facto* regional financial integration has risen since 2005; while *de jure* regional financial integration has declined particularly after 2008 (Figure 4).

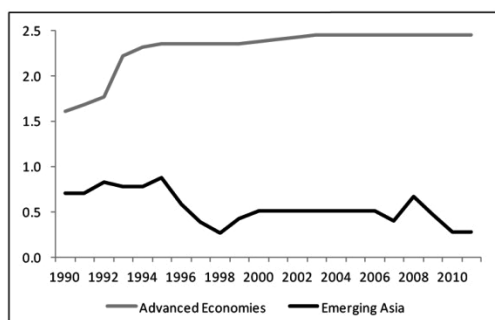
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<sup>5</sup> Regulatory quality index is taken from the World Governance Indicators of Kaufmann, Kraay, and Mastruzzi. The index captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. It incorporates regulatory perception measures on access to capital markets, transparency in financial institutions, legal framework, bank regulation, among others.

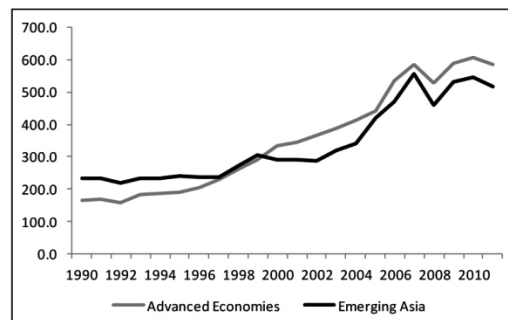
<sup>6</sup> The real foreign exchange rate was derived as the product of nominal foreign exchange rate and price index ratio.

**Figure 3: Emerging Asia's Progress on Global Financial Integration**

a) De Jure Measure

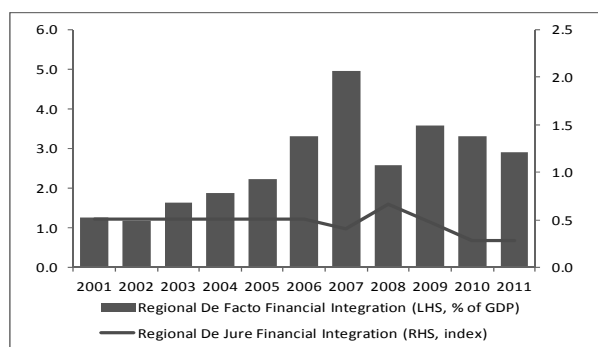


b) De Facto Measure



Note: De jure measure employs the capital account openness index taken from Chinn-Ito website. Data on de facto measure refers to total foreign assets and liabilities taken from External Wealth of Nations and IMF's International Investment Position; and scaled by nominal GDP.

Source: Authors' calculation.

**Figure 4: Emerging Asia's Progress on Regional Financial Integration**

Note: De jure measure employs the capital account openness index taken from Chinn-Ito website. Data on de facto measure refers to intra-regional foreign assets and liabilities taken from External Wealth of Nations and IMF's International Investment Position; and scaled by regional nominal GDP.

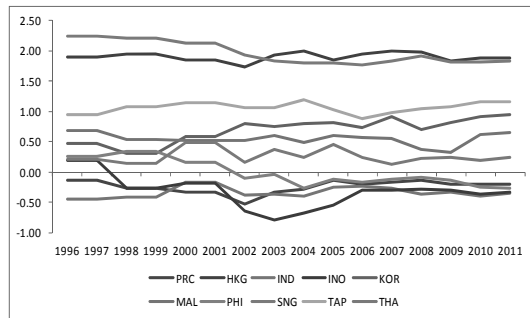
Source: Authors' calculation.

The other key variable is regulatory quality. Better regulatory quality tends to improve transparency and lessen information asymmetry among investors, lowering portfolio home bias. Data on regulatory quality is taken from World Bank's World Governance Indicators, which captures perceptions on the ability of governments to formulate and implement sound policies and regulations that permit and promote private sector development. Figures 5a and 5b present regulatory quality index for emerging Asia. Some observations are noted. First, there exists heterogeneity in regulatory quality among the selected economies. Across emerging Asia, Hong Kong, China (HKG) and Singapore (SNG) have the highest regulatory quality; while People's Rep. of China (PRC), India (IND), Indonesia (INO), and Philippines (PHI) have the lowest. As a whole, emerging Asia has lower regulatory quality compared to advanced economies. Among, emerging Asia country groupings, more open economies of NIEs have

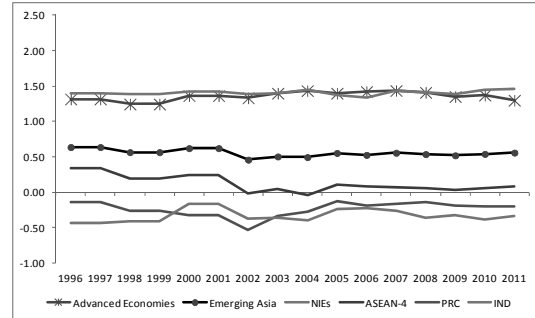
higher regulatory quality compared to ASEAN-4, People's Republic of China and India. Second, it is interesting to note that countries that are more financially open such as NIEs and advanced countries have better regulatory quality than less financially open economies of People's Republic of China and India.

**Figure 5: Regulatory Quality, Selected Economies**

a) Individual Emerging Asia Economies



b) Country Groupings



Note: Estimated values range from -2.5 to 2.5, such that higher values represent better regulatory quality.

Source: World Governance Indicators.

Equation (6) has been estimated for two different specifications. First, the measure of global financial integration is used for its impact on an individual country's equity home bias against global equities to check the significance of financial globalization in lowering equity home bias. Second, using individual country's regional financial integration measures, we examine the significance of regional financial integration in lowering equity home bias against regional equities.

Consequently, measures of real foreign exchange volatility also vary depending on the specifications. For equity home bias against global equities, real foreign exchange rate is expressed in terms of local currency unit per US dollar. For equity home bias against regional equities, real foreign exchange rate is in terms of local currency per Asian currency unit (ACU), where ACU is computed as GDP-weighted regional currency. For total trade, home bias with global equities uses individual country's total trade with the rest of the world. For home bias against regional equities, individual country's total intraregional trade is used.

Several tests have been also conducted for the model specification. Given the heterogeneity among the sample countries, Hausman tests were conducted to determine whether Equation (6) must be estimated using fixed- or random-effects. The results show that random-effect is more suitable, which is expected because the first difference specification of the regressors in Equation (6) has removed country-specific effects. However, the Breusch and Pagan LM test for random effects estimation reveal that it is more appropriate to use a pooled ordinary least squares (OLS) estimation. Therefore, Equation (6) is estimated using pooled OLS estimation.

All variables specified in Equation (6) have been tested for stationarity. A Fisher-type augmented Dickey-Fuller (ADF) test for panel dataset was used for equity home bias with respect to global and regional equities. The results reject the null hypothesis that all panels

contain unit roots, which suggests that all variables used in the pooled OLS estimation are stationary. To address heteroskedasticity, robust standard errors using Huber-White robust variance estimator are used.

## 6. Estimation Results

Table 2 presents the estimates for equity home bias against global equities. The results show that *de facto* financial globalization measure significantly lowers equity home bias against global stocks. This finding supports the first hypothesis of this paper and is consistent with the previous results of Baele et al. (2007), Bekaert and Wang (2009), and Chan et al. (2005) for advanced countries. Better regulatory quality also significantly lowers equity home bias. The estimates support the second hypothesis and appear robust under various specifications. The result is also consistent with those from Baele et al. (2007), Bekaert and Wang (2009), and Jochem and Volz (2011) who found that countries with strong rule of law, better shareholder protection, and less corruption have lower equity home bias. The result could mean that improvements in regulatory standards encourage foreign investors to hold more domestic assets and reduce the relative holdings of domestic assets by domestic investors. The other factor which significantly reduces equity home bias against global stocks is lagged value of the home bias measure. This finding is similar to those of Adam et al. (2002) and Ahearne et al. (2004) who argued that countries with high initial levels of equity home bias tend to decrease the level of bias faster than those with lower initial levels. Factors that significantly increase home bias include greater stock market capitalization and bank assets. Stronger domestic stock market growth significantly increases equity home bias against global stocks because as domestic stock market grows local investors see more opportunities for portfolio diversification within the domestic market, thereby increasing home bias. Meanwhile, larger domestic bank assets imply a less diversified domestic financial system which raises home bias because local investors have limited choices for portfolio diversification. These findings and arguments are consistent with those of Baele et al., (2007).

Table 3 shows the results for equity home bias against regional equities. The estimates indicate that both *de jure* and *de facto* measures of regional financial integration significantly lower equity home bias against regional stocks. The results also support the first hypothesis on the link between regional financial integration and declining equity home bias. Similar to the results in Table 2, better regulatory quality also significantly lowers equity home bias against regional equities, which supports the second hypothesis of this paper. The estimates also find that higher initial level of home bias significantly lowers equity home bias against regional stocks; while larger bank assets significantly increase it. Interestingly, greater real foreign exchange volatility between local currency and regional currency (ACU) increases home bias against regional stocks. This could mean that risk-averse domestic investors tend to overweight domestic stocks in their portfolio holdings whenever the real foreign exchange rate volatility between domestic and regional currency rises, which cause equity home bias against regional stocks to increase. Fidora et al. (2007) and Borensztein and Loungani (2011) also argued that greater real foreign exchange rate volatility increases equity home because it increases the risks for holding foreign securities from home investors' perspective.

Table 2: Equity Home Bias (against global equities)

	$\Delta HB_1$ (1)	$\Delta HB_1$ (2)	$\Delta HB_1$ (3)	$\Delta HB_2$ (4)	$\Delta HB_2$ (5)	$\Delta HB_2$ (6)	$\Delta HB_1$ (7)	$\Delta HB_1$ (8)	$\Delta HB_1$ (9)	$\Delta HB_2$ (10)	$\Delta HB_2$ (11)	$\Delta HB_2$ (12)
Home Bias (t-1)	-0.0236 0.04	-0.0029 0.05	-0.0344 0.05	-0.2762* 0.09	-0.2975* 0.09	-0.2949* 0.09	-0.0237 0.04	-0.0033 0.05	-0.0352 0.05	-0.28* 0.09	-0.3058* 0.09	-0.3033* 0.09
$\Delta$ De Jure Global Financial Integration (t)	0.0128		0.0108	-0.0388		-0.0449	0.0124		0.0098	-0.0404		-0.0484
$\Delta$ De Facto Global Financial Integration (t)	0.01		0.01	0.05		0.05	0.01		0.01	0.05		0.09
		0.0001	-0.0001***		-0.0006*	-0.0006*		0.0001	-0.0002*		-0.0006*	-0.0484
$\Delta$ Stock Market Capitalization (t-1)	0.0001		0.00		0.00	0.00		0.00	0.00		0.00	0.05
	0.00	-0.0001	-0.0001	0.0009**	0.0008**	0.0008**	0.0000	-0.0001	-0.0001	0.0009**	0.0007**	-0.0006*
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
$\Delta$ Bank Assets (t-1)	0.0176 0.02	0.0021 0.02	0.0172 0.02	0.1248 0.08	0.1270*** 0.07	0.1240 0.07	0.0187 0.02	0.0033 0.02	0.0192 0.02	0.1286 0.08	0.1340*** 0.07	0.0008** 0.00
Regulatory Quality Index (t-1)	-0.0137 0.01	-0.0134 0.00	-0.0118** 0.00	-0.0720** 0.03	-0.0639** 0.02	-0.0630** 0.02	-0.0140** 0.01	-0.0137* 0.00	-0.0122** 0.00	-0.0740** 0.03	-0.0671** 0.02	0.1310*** 0.07
$\Delta$ Real Forex Volatility LCU/USD (t-1)	-0.0117 0.04	-0.0249 0.04	0.0145 0.04	0.1601 0.19	0.2960 0.19	0.2626 0.18	-0.0208 0.04	-0.0318 0.04	-0.0013 0.04	0.1224 0.19	0.2371 0.19	0.1985 0.19
$\Delta$ Total Trade (t-1)							0.0002	0.00	0.0004	0.0009	0.0017	0.0017
							0.00	0.00	0.00	0.00	0.00	0.00
constant	0.0229 0.04	0.0025 0.05	0.0339 0.05	0.2505** 0.09	0.2731* 0.09	0.2695* 0.09	0.0227 0.04	0.0027 0.05	0.0341 0.05	0.2531** 0.09	0.2793* 0.09	0.2757* 0.09
Number of observations	199 0.09	199 0.13	199 0.21	199 0.20	199 0.28	199 0.29	199 0.09	199 0.13	199 0.23	199 0.21	199 0.29	199 0.30

Note: Values in italics are robust standard errors; \*\*\*, \*\*, \*, refer to 0.01, 0.05, and 0.10 level of significance respectively.  $\Delta$  = first difference;  $\Delta HB_1$  = home bias using market capitalization ratios;  $\Delta HB_2$  = home bias using mean-variance approach. Specifications 2 and 8 are estimated using the first lag value of  $\Delta$  de facto regional financial integration. The dependent variable refers to the change in home bias measures. Home bias measures for (1) to (3) and (7) to (9) use stock market capitalization ratios ( $\Delta HB_1$ ); while specifications (4) to (6) and (10) to (11) use mean-variance approach ( $\Delta HB_2$ ). Specifications (1), (4), (7), and (10) include *de jure* global financial integration as a regressor; estimations (2), (5), (8), and (11) use *de facto* global financial integration; while the rest incorporates both *de jure* and *de facto* measures. Specifications (1) to (6) exclude total trade; while (7) to (12) include total trade. Robust standard errors are used and reported in italics.

Source: Authors' calculation.

Table 3: Equity Home Bias (against regional equities)

	$\Delta HB_1$ (1)	$\Delta HB_1$ (2)	$\Delta HB_1$ (3)	$\Delta HB_2$ (4)	$\Delta HB_2$ (5)	$\Delta HB_2$ (6)	$\Delta HB_1$ (7)	$\Delta HB_1$ (8)	$\Delta HB_1$ (9)	$\Delta HB_2$ (10)	$\Delta HB_2$ (11)	$\Delta HB_2$ (12)
Regional Bias (t-1)	-0.0806 0.13	-0.0575 0.13	-0.0468 0.14	-0.6444* 0.21	-0.5785* 0.19	-0.5785* 0.19	-0.0802 0.13	-0.0610 0.13	-0.0501 0.13	-0.6423* 0.20	-0.5666* 0.19	-0.5150** 0.19
$\Delta$ De Jure Regional Financial Integration (t)	0.0118 0.02	-0.0165 0.03	-0.0165 0.03	0.0369 0.08	-0.1996** 0.07	-0.1996** 0.07	0.0118 0.02	0.0118 0.02	-0.0202 0.03	-0.0071 0.06	-0.2433** 0.11	-0.2433** 0.11
$\Delta$ De Facto Regional Financial Integration (t)		-0.0033 0.00	-0.0047** 0.00		0.0137 0.01	-0.0025 0.01		-0.0035 0.00	-0.0053** 0.00		0.1222 0.01	-0.0091 0.01
$\Delta$ Stock Market Capitalization (t-1)	0.0000 0.00	-0.0001 0.00	-0.0001 0.00	-0.0002 0.00	-0.0002 0.00	-0.0001 0.00	0.0000 0.00	-0.0001 0.00	-0.0001 0.00	-0.0003 0.00	-0.0002 0.00	-0.0002 0.00
$\Delta$ Bank Assets (t-1)	0.0255*** 0.01	0.0237*** 0.01	0.0228 0.01	-0.0549 0.07	-0.0076 0.04	-0.0216 0.04	0.0255*** 0.01	0.0239*** 0.01	0.0227** 0.01	-0.0597 0.07	-0.0060 0.04	-0.0212 0.04
Regulatory Quality Index (t-1)	-0.0098** 0.00	-0.0086** 0.00	-0.0081*** 0.00	-0.0602* 0.02	-0.0554* 0.02	-0.0516* 0.02	-0.0097*** 0.00	-0.0091*** 0.00	-0.0086*** 0.00	-0.0642* 0.02	-0.0565* 0.02	-0.0531* 0.02
$\Delta$ Real Forex Volatility LCU/ACU (t-1)	-0.0567 0.12	-0.0579 0.12	-0.0564 0.13	0.2186 0.26	0.3770 0.25	-0.4282*** 0.23	-0.0571 0.12	-0.0535 0.12	-0.0490 0.13	0.3942 0.31	0.4217 0.28	0.5348*** 0.28
$\Delta$ Total Integration Trade (t-1)							0.0000 0.00	0.0001 0.00	0.0001 0.00	0.0013 0.00	0.0007 0.00	0.0015 0.00
constant	0.0794 0.13	0.0567 0.13	0.0156 0.13	0.6380* 0.20	0.5722* 0.18	0.5390** 0.19	0.0790 0.13	0.0603 0.13	0.0492 0.13	0.6351* 0.20	0.5609** 0.19	0.5075** 0.19
Number of observations	77	77	77	77	77	77	77	77	77	77	77	77
R-squared	0.17	0.19	0.20	0.40	0.41	0.45	0.17	0.19	0.20	0.42	0.41	0.47

Note: Values in italics are robust standard errors,\*\*\*, \*\*, \* refer to 0.01, 0.05, and 0.10 level of significance respectively. Data excludes the People's Republic of China and Taipei, China.  $\Delta$  = first difference;  $\Delta HB_1$  = home bias using market capitalization ratios;  $\Delta HB_2$  = home bias using mean-variance approach. Specifications 4 and 10 are estimated using the first lag value of  $\Delta$  de jure regional financial integration. Specifications (1), (3) and (7) to (9) use stock market capitalization ratios ( $\Delta HB_1$ ); while specifications (4) to (6) and (10) to (11) use mean-variance ( $\Delta HB_2$ ) for the home bias measures. Specifications (1), (4), (7), and (10) include *de jure* regional financial integration as explanatory variable; estimations (2), (5), (8), and (11) include *de facto* regional financial integration; while the rest employs both *de jure* and *de facto* regional integration measures. Specifications (1) to (6) exclude total trade of individual countries with the region; while (7) to (12) include total trade of individual countries with the region.

Source: Authors' calculation.

Based on the results presented in Tables 2 to 3, three observations are noteworthy.

First, the explanatory power of regression specifications using the mean-variance approach to compute optimal foreign portfolio weights is stronger than the explanatory power of the specifications using stock market capitalization ratios. This implies that explanatory power of regression specification increases when home or regional bias is measured taking into account expected portfolio returns. This observation suggests future research could benefit from the use of mean-variance approach in measuring optimal foreign portfolio weights.

Second, financial integration measures significantly lower equity home bias measures, whether it is global or regional. The pooled OLS estimates support the first hypothesis of this paper i.e. financial globalization measures lower equity home bias against global stocks; and regional financial integration measures also lower equity home bias against regional stocks.

Third, the estimates show that better regulatory quality significantly lowers equity home bias against global and regional stocks. The results are consistent with those of Baele et al. (2007), Bekaert and Wang (2009), and Jochem and Volz (2011) for advanced countries. These authors found that countries with strong rule of law, better shareholder protection, and less corruption have lower equity home bias. This could mean that better regulatory quality play a significant role in reducing information asymmetry between domestic and foreign investors, thereby lowering equity home bias. In the context of financial regulatory reforms, it is interesting to note that regulatory quality captures perceptions of the government's ability to formulate and implement sound policies and regulations that permit and promote private sector development or investment. In this regard, the results imply that better regulatory quality helps domestic investors gain more information on domestic and foreign equities, allowing them to diversify their portfolio holding which may lower the share of domestic assets held by domestic investors' portfolios.

## 7. Robustness Checks

Tables 2 and 3 show that financial integration significantly lowers equity bias whether it is global or regional. However, there may be reverse causality. That is, financial integration may be an outcome of lower equity home bias. Separate regression was done to test this, where financial integration measures are used as dependent variable, and equity home bias measures are added as regressors. The results show that for most specifications equity bias measures are insignificant in explaining financial integration measures at 0.10 level of significance. This suggests that there is no reverse causality between financial integration and equity bias measures. The relationship between the two runs one-way with financial integration affecting home bias and not the other way around.

To test for endogeneity, the residuals of each estimated specification in Tables 2 and 3 are generated and correlated with their respective regressors. If the residuals are highly correlated with the independent variables, then the pooled OLS estimation will be biased. If not, then endogeneity is not a concern and the OLS estimation is unbiased. The pairwise correlations between the residuals and independent variables for all specifications in Tables 2 and 3 shows



that the correlations are zero, suggesting that endogeneity is not a concern. The results are expected since almost all independent variables are in lagged ( $t-1$ ) first difference form thereby reducing the possibility of endogeneity.

In order to verify the consistency and validity of the results presented in Tables 2 and 3, several robustness checks were conducted by adding, removing and replacing variables. First, financial integration measures remain significant and with the expected sign even after removing the volatility of real foreign exchange rate; and simultaneously removing real foreign exchange rate volatility and adding total (intra-regional) trade. Second, instead of using regulatory quality index, which is one of the components of the World Governance Indicators, an aggregate (unweighted average) measure of governance indicator was used to include measures of voice and accountability, political stability, government effectiveness, regulatory quality, rule of law and control of corruption, also taken from World Governance Indicators. The results are very similar to those presented in Tables 2 and 3. Specifically, both financial integration measures and institutional (governance) quality indicators significantly lower equity home bias.

## 8. Summary of Findings and Policy Implications

Equity home bias remains a phenomenon and a puzzle in international finance. Recent literature shows that financial integration plays a key role in explaining the observed decline of home bias in highly integrated and advanced economies of Europe, Japan, and North America. Understanding the link between the two is important for emerging countries including those in Asia as it highlights the role of financial integration in facilitating portfolio diversification, efficient allocation of capital resources, and risk sharing. In addition, several studies found that better regulatory quality, greater transparency, and/or lesser corruption significantly lowers equity home bias. The relationship between regulatory quality and equity home bias also has important policy implications given the ongoing global financial regulatory reforms.

This paper extends the literature by looking into the role of evolving global and regional financial integration in lowering equity home bias as well as the significance of regulatory quality in decreasing equity home bias in emerging Asia. Applying two methods to equity home bias measures for the region and its countries and subgroups, this paper finds that equity home biases exhibit a declining trend, although they remain high compared to advanced countries. This study also highlights the impact of the region's financial integration at both global and regional levels on declining home biases. In addition, this paper also notes different levels of regulatory quality across regional economies and the significant effect of regulatory quality on equity home biases. More open economies of NIEs have the highest regulatory quality compared to other regional groupings. But overall emerging Asia has lower regulatory quality compared to advanced economies.

To determine which factors—including financial integration measures and regulatory quality—contribute to the decline of equity home bias in emerging Asia, a pooled OLS estimation was used. The results show that greater financial integration and better regulatory quality significantly lower equity home bias against global and regional stocks. The results also show that the lag value of the home bias measure significantly lowers equity home bias against global

and regional equities; while bank assets and stock market capitalization tend to increase the said bias against global and regional equities. Interestingly, volatility of foreign exchange rate significantly increases equity home bias against regional stocks, but not for the home bias against global stocks.

The findings in this paper offer several policy implications. First, global and regional financial integration plays a significant role in lowering equity home bias against global and regional stocks. Interestingly, not only *de facto*, but also *de jure* regional financial integration measure, which reflects the region's capital account openness stipulated in terms of policies and regulations, significantly reduces equity home bias against regional equities. The finding of the significant negative effect of *de jure* regional financial integration on equity home bias against regional stocks suggests the importance of policy actions on capital account openness in determining equity home bias. Second, better regulatory quality also lowers equity home bias. Various explanations can be made. Better regulatory quality may contribute to a reduction in information and transaction costs, an increase of foreign investments in domestic equity markets, and an increase in cross-border financial flows and asset holdings.

Given the ongoing financial regulatory reforms, the region's policy makers are confronted with several challenges in designing financial regulatory reforms in the region. First, the nature and design of financial regulatory reforms matter for the degree of portfolio home bias. Earlier findings of Bhamra et al., (2012), Coeurdacier and Rey (2011), and Khurana and Michas (2011) suggest that reforms that will harmonize and standardized accounting and reporting systems will lower portfolio home bias because it reduces information asymmetry between domestic and foreign investors. On the other hand, reforms that will limit or control capital flows and foreign asset holdings, discriminate in tax treatments, and the like will likely increase portfolio home bias as it increases transaction costs and create financial market frictions between domestic and foreign investors. In this regard, the ongoing regulatory reform measures may have varying impacts on equity home bias (Table 4).

Second, the design and implementation of consistent financial regulatory reforms would help encourage portfolio diversification while mitigating financial risks. For instance, measures that will reduce information asymmetry between local and foreign investors may not be accompanied by those that will increase transaction and information costs associated with portfolio diversification.

Third, regional cooperation initiatives and dialogue are important in implementing the global reform principles at the national policy level to further strengthen regional financial integration and avoid cross-border regulatory arbitrages. It is at the national policy design and implementation stage that will ultimately determine how the specific reform measures may impact on portfolio home bias. Consequently, policy makers need to consider potential implications and impacts of the regulatory reforms on portfolio home bias and benefits of international portfolio diversification.

**Table 4: Potential Impact of Regulatory Reforms on Home Bias**

Recommendations	Impact on Equity Home Bias	Note
Improving bank capital and liquidity standards	↑	Strengthening of bank risk management may lead to banking home bias
Ending “Too-Big-To-Fail”	↑	Measures taken by national authorities may lead of banking home bias
Expanding and redefining the regulatory perimeter	↑	Measures taken by national authorities may lead of banking home bias
Creating continuous core markets–OTC derivatives reforms	↓	Harmonization and standardization of OTC derivatives can increase transparency and lower information asymmetry
Creating continuous core markets–Strengthening and converging accounting standards	↓	Increase transparency and reduce information asymmetry between domestic and foreign investors
Creating continuous core markets—Other market reforms	↓	Increase transparency and reduce information asymmetry between domestic and foreign investors
Developing macro-prudential frameworks and tools	↓	Increase transparency
Strengthening adherence to international supervisory and regulatory standards	↓	Reduce information asymmetry between domestic and foreign investors
Strengthening of FDB’s Capacity, Resources, and Governance	n.a.	Not applicable at the national level

Note: Potential impact on home bias is based on existing studies and findings including those from Bhamra et al., (2012), BIS (2012), Coeurdacier and Rey (2011), Khurana and Michas (2011); and also the specific provisions under each recommendation.

Source: Authors’ elaborations.

### Appendix I: Data Sources for Equity Home Bias

	<b>Sources and notes for equity home bias</b> (against global equities)	<b>Sources and notes for equity home bias</b> (against regional equities)
Total foreign equity assets and liabilities (in US dollars)	External Wealth of Nations Database; and International Investment Position, International Monetary Fund from 1990 to 2011.	Coordinated Portfolio Investment Survey, International Monetary Fund from 2001 to 2011. Data excludes PRC and Taipei, China.
Stock market capitalization (in US dollars)	<i>World Development Indicators</i> , World Bank from 1990 to 2011.	<i>World Development Indicators</i> , World Bank from 2001 to 2011.
Domestic stock price indices	Datastream stock price index from 1990 to 2011. Annual values for mean and variation of returns are computed based on weekly values.	Datastream stock price index from 1990 to 2011. Annual values for mean and variation of returns are computed based on weekly values. Regional values (excluding the country of interest) are computed using nominal GDP as weights.

Source: Authors' elaborations.

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## **Equity Home Bias, Financial Integration, and Regulatory Reforms**

### **Implications for Emerging Asia**

The authors investigate the link between financial integration and equity home bias in emerging Asia. Empirical results show that greater global and regional financial integration and better regulatory quality significantly lower equity home bias against global and regional stocks. Financial regulatory reforms can help reduce equity home bias in emerging Asia and promote greater portfolio diversification and more efficient allocation of capital resources when they are designed to reduce information asymmetry and curb information and transaction costs.

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