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Impact of Eurozone Financial Shocks on Southeast Asian Economies

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ADB Working Paper Series on Regional Economic Integration



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Jayant Menon and Thiam Hee Ng
No. 116 | August 2013



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Contents

Abstract	iv
1. Introduction	1
2. Southeast Asia after the Global Financial Crisis	2
3. Impact of the Financial Crisis in Europe on Southeast Asia	5
4. Estimating the Impact of Spillovers from a eurozone Financial Crisis	5
5. Is East Asia Ready for Any Fallout?	8
6. Conclusion	10
References	11
ADB Working Paper Series on Regional Economic Integration	22
Table	
1. Average Simple Correlation of ASEAN-4 Stock Price Index Weekly Returns and Volatility	22
Figures	
1. Merchandise Export Growth	14
2. Composition of Capital Inflows in Emerging Asia	14
3. Policy Rates	15
4. Growth in Bank Lending	15
5. Domestic Credit Provided by Banking Sector	16
6. Share of Total Liabilities in Singapore	16
7. Share of Total Liabilities in Malaysia	17
8. Share of Total Liabilities in Thailand	17
9. Share of Total Liabilities in the Philippines	18
10. Share of Total Liabilities in Indonesia	18
11a. Response of ASEAN Equity Returns to a Negative eurozone Equity Shock	19
11b. Response of Equity Returns to a Negative eurozone Equity Shock	19
12. Impact Elasticity of Asian Equity Markets to a Negative eurozone Equity Shock	20
13a. Response of ASEAN Output Growth to a eurozone Equity Shock	21
13b. Response of Output Growth to a eurozone Equity Shock	21

Abstract

Five years after the Global Financial Crisis, the economies of the United States (US) and the eurozone continue to struggle. How will Southeast Asian economies be affected should there be a further deterioration in conditions in the eurozone? In this paper, we present estimates using a Global Vector Autoregression model of the direct impacts in Southeast Asia of a further shock to the eurozone. We find that although the direct impacts are likely to be muted, it could trigger a much larger adjustment should it lead to a reassessment of risks and asset valuations. This is a real possibility given that vulnerability in the region has increased following massive inflows of capital and the build-up of debt related to successive bouts of quantitative easing, initially in the US and now in Japan. In light of a possible reassessment of risks and asset valuations, and with the International Monetary Fund's resources already stretched, there is a pressing need to improve regional financial safety nets, which are currently unworkable, to deal with the fallout.

Keywords: eurozone crisis, asset bubbles, contagion, regional financial safety nets, Chiang Mai Initiative, ASEAN, ASEAN+3

JEL Classification: E37, E58, F32, F34

1. Introduction

Five years after the Global Financial Crisis (GFC), the economies of the United States (US) and the eurozone continue to struggle, with the eurozone recovery lagging behind that of the US. The financial crisis has wrecked havoc on the balance sheets of households and banks. Faced with large losses and a weak capital base, American and European banks have been deleveraging. This has considerably reduced lending growth and slowed the process of recovery in the advanced economies.

European banks' funding conditions have been worsening as evidenced by slower bond issuance (Bank for International Settlements 2012). Worries about the health of the banking system have also led to a rash of withdrawals by bank depositors. The recent events in Cyprus, where some depositors stand to lose a significant share of their savings, could potentially heighten concerns in countries where banks are facing similar losses. The banking system in the US is relatively healthier as losses have been recognized and banks have undertaken recapitalization. Nevertheless, the troubles facing European banks could also affect the liquidity situation in the US. After all, the major European banks are also big lenders in the US interbank markets (Shin 2012).

Monetary authorities have responded by sharply easing monetary policy. This has brought policy interest rates down to close to zero. Having quickly reached the interest rate floor, both the US Federal Reserve and the European Central Bank (ECB) have resorted to unconventional monetary policy through episodes of quantitative easing. The Bank of Japan, under new leadership, has recently followed suit. This has further increased liquidity in the banking system.

However, these policy moves have yet to produce the desired effect in the home countries, as private lending has failed to increase as expected. Banks are still hesitant to lend given lingering uncertainty about future economic prospects. Consumers and businesses are also reluctant to borrow as uncertainty remains high and confidence in the recovery remains low. As a result, increased liquidity from the asset purchase programs of the central banks has only increased the banking system's holding of reserves. That most of the funds have been placed in very low yielding reserves at the central banks shows a continued lack of confidence in the economic recovery.¹ All of this suggests that the problems in the eurozone are unlikely to end anytime soon. It also points to the very real possibility that the situation could indeed worsen.

¹ That is not to say that quantitative easing has not had any positive effects. In Europe, the ECB's Long-Term Refinancing Operations (LTRO) initiatives have been credited for restoring confidence in the banking system and helping to reduce yields in the peripheral economies. However, while the ECB policy response has calmed financial markets somewhat, there remain serious structural problems in the eurozone that cannot be addressed through monetary policy actions alone. Continued austerity measures have sapped demand in the eurozone economies. Rising unemployment threatens to further widen government deficits by increasing the cost of supporting the unemployed, ultimately hampering economic recovery. While a Keynesian style reflationary program has been called for by commentators such as Paul Krugman (2012), even the International Monetary Fund (IMF) has recently started raising concerns about the impact that austerity is having on recovery prospects, albeit in the context of the United Kingdom and not the European countries it is involved in bailing out (IMF 2013).

It is against this global backdrop that we turn our attention to the situation in Southeast Asia. What has the impact been of the global financial turmoil on Asian economies? Is there a real risk that a similar crisis could hit the region? Given the fragility of the financial system, what are the possible impacts of a shock to the financial system in the eurozone on the economies of Southeast Asia? This is a real possibility of being impacted by additional shocks in the eurozone, given that vulnerability in the region has increased following massive inflows of capital and the build-up of debt related to successive bouts of quantitative easing, initially in the US and now in Japan. Furthermore, should East Asia succumb, is it ready to deal with the fallout or will it again have to seek support from the International Monetary Fund (IMF), as it did during the 1997/98 Asian Financial Crisis (AFC), but at a time when global resources are even more stretched?

The paper is divided into six parts. Section 2 of the paper focuses on the impact of monetary policy easing in advanced economies on capital flows in Southeast Asia. It also examines the trend in bank lending in Southeast Asia, as governments in the region attempt to stabilize growth through various stimulus measures. Section 3 examines the possible implications of a crisis in the financial system in Europe. During the 2007/08 GFC, the region's financial systems were hit hard but showed their resilience with a strong rebound. Can they once again deal with the fallout from another crisis in Europe? To answer this question, Section 4 presents results from a Global Vector Autoregression (GVAR) model, which is used to explore the possible spillover effects of a financial shock in Europe on the region's financial sector. In Section 5, we look at the readiness of the region to deal with any possible fallout by examining the adequacy of regional financial safety nets. A final section concludes with a discussion of policy implications.

2. Southeast Asia after the Global Financial Crisis

The initial impact of the 2007/08 GFC was most evident in the real economy. A huge decline in exports led to a sharp slowdown in the region's economic growth. However, this impact was short-lived; the rebound was swift and sharp (Figure 1). This was aided by a partial shift of the region's exports away from the US and eurozone toward other countries in the region and other developing regions.

On the financial side, there was also an initial outflow of foreign capital from the region's economies. However, inflows of funds resumed quickly. The region's financial system has become more resilient following the reforms carried out after the 1997/98 AFC. Furthermore, prudent management minimized the financial system's exposure to the toxic financial assets that caused heavy losses for American and European banks. The initial outflows from the region likely reflect a flight to safety amid huge uncertainties following Lehman Brothers' collapse. As global financial markets became calmer, fund inflows to the region soon resumed (Figure 2).

Nevertheless, capital inflows to the region have remained volatile. The Federal Reserve's announcement of further quantitative easing in September 2012 is likely spurring more capital inflows into the region as investors seek higher yields. However, the recent decision by the Federal Reserve to begin winding back quantitative easing

combined with further uncertainty in the eurozone is likely to mean that investors' confidence remains fragile. The sentiment could easily change and capital inflows could suddenly reverse and become outflows.

The inflows of foreign capital to the region can be beneficial as they supplement domestic resource bases and facilitate the transfer of technology and managerial expertise from abroad. However, sudden stops and reversals in capital flows could disrupt financial systems and lead to macroeconomic instability. There is a need to carefully weigh the benefits and costs of greater capital inflows to the region.

Caution is necessary as the region has experienced volatile capital flows in the past, particularly during the 1997/98 AFC and more recently during the 2008/09 GFC. Large inflows to the region before the AFC suddenly reversed, becoming outflows that precipitated currency and banking crises in several countries in Southeast Asia and plunged the most affected countries into deep recession.

The swift resumption of capital inflows in 2009 is seen as a sign of confidence in the region's economies, underscoring economic resilience in the face of the GFC. However, as the size of capital inflows continued to grow, especially in 2010, concerns about a repeat of the 1997/98 AFC also grew. A rapid surge in short-term capital inflows makes it increasingly difficult to manage risks. An attempt to sterilize inflows will only create excess liquidity in domestic financial markets, resulting in exchange rate misalignments, and ultimately derailing economic stability and growth. Policymakers fear that the surge in capital flows could lead to asset bubbles and exert upward pressure on the exchange rate. For instance, easy credit combined with strong demand driven by speculative motives has raised property prices in many Southeast Asian cities—including Bangkok, Ho Chi Minh, Phnom Penh, Kuala Lumpur, and Singapore—in some cases surpassing peaks reached in 2007. This increases the risk of price bubbles that could lead to drastic losses in terms of both real output and price levels (Menon and Chongvilaivan 2011).

There are also concerns about sudden reversals of capital inflows destabilizing asset and financial markets. Ng (2011) has shown that capital inflows to the region are strongly affected by global risk perception. As can be seen from the severe recession following the AFC, the cost of the volatility of capital flows can be very high indeed.

Given the threat to the region's economies, governments reacted quickly to the 2008/09 GFC by implementing fiscal and monetary stimulus measures. Higher initial policy rates, compared with those in the US and Europe, provided ample room for the region's monetary authorities to reduce interest rates. As a result, the region's policy rates have fallen considerably (Figure 3). Despite recent improvements in economic performance, policy rates in many countries have remained well below pre-crisis levels. Given the uncertain state of the global recovery, many of the region's governments have been hesitant to raise interest rates quickly.

Monetary policy easing has had the desired impact of increasing bank lending in the Asian economies (Figure 4). This likely reflects the region's stronger macroeconomic fundamentals and possibly a more optimistic outlook among the region's consumers and businesses. The resilience of the region's financial system in the aftermath of the GFC

has also likely helped shore up confidence. As Figure 4 shows, while bank lending slowed considerably after the GFC, the easing of monetary policy has led to an increase in bank lending since then.

Consequently, although Asia had relatively low levels of debt at the beginning of the GFC, it is now more highly leveraged. Domestic bank lending has soared, particularly in Thailand, Malaysia, and Singapore (Figure 5). At the same time, given the weakness in global financial institutions, we have seen a considerable decline in loans by European banks to the region. This has particularly affected the use of trade finance in the region. Basel III regulations aim to increase the capital cushion that banks will have to carry. This means that European banks will have to raise more capital in a difficult environment. Alternatively, the banks may opt to reduce their asset base by reducing lending, which is a major concern for the region.

Another cause for concern is noncore liabilities (usually consisting of interbank borrowings), which have been increasing significantly even prior to the 2007/08 GFC. There are concerns that with European banks deleveraging, the banking system in Southeast Asia will find it more difficult to continue borrowing funds from abroad; the share of other investment flows have declined in the region. Given the importance of the banking system in the region, the trend in noncore liabilities must be carefully examined.

One issue that arises when looking at the trend in noncore liabilities is the lack of a consistent definition of what noncore liabilities encompass. It also does not help that different countries have different classifications for liabilities in their published banks' balance sheets. In this paper, the definition used attempts to capture the scale of interbank borrowing in a country. Where possible, a distinction is drawn between domestic and foreign interbank borrowing, as the latter is seen to be much riskier.

Reliance on deposits for funding varies considerably across countries. Singapore, being an international financial center, has a smaller proportion of its liabilities in deposits—less than 60% (Figure 6). Not surprisingly, banks in Singapore rely more heavily on foreign interbank borrowing than domestic interbank borrowing.

In Malaysia, noncore liabilities represent only a small proportion of liabilities (Figure 7). Deposits are the main source of funding for bank operations there, accounting for almost three-quarters of total liabilities. Domestic and foreign interbank borrowing are roughly comparable in scale.

In Thailand, noncore liabilities have risen substantially since the 2007/08 GFC, accounting for almost 20% of the banks' total liabilities. Recently, the rise in noncore liabilities has stabilized somewhat (Figure 8).

Banks in both the Philippines and Indonesia rely more heavily on deposits to fund their operations, accounting for 80% and 90% of total liabilities, respectively (Figures 9, 10). Hence, the source of funding for these two countries is likely to be more stable and less affected by global financial shocks. These two countries have also seen less of a surge in bank lending compared with other countries.

3. Impact of the Financial Crisis in Europe on Southeast Asia

Fears of a eurozone debt crisis have receded somewhat but the threat of a financial crisis remains. While the liquidity provisions of the ECB and the successful restructuring of Greek debt have helped to calm financial markets, the stability could be short-lived. Several European economies continue to have large fiscal deficits and high levels of public debt, leaving them vulnerable to future crises of confidence. The recent bailout in Cyprus has resulted in huge losses for large depositors (i.e., those with deposits in excess of €100,000). This has set an alarming new precedent: depositors are expected to bear losses in the case of bank failures. This could raise fears among depositors and result in more bank runs in the future.

The concern had been whether the Cyprus bailout will have a significant impact on financial market stability in Europe, particularly on equity markets and the banking sector. But the rise in yields starting June 2013 has reignited investor concerns of deteriorating conditions in eurozone countries that received assistance earlier. With the global financial system closely linked, any distress in Europe would likely be transmitted to Asia. Over the past decade or so, the Asian economies have liberalized and opened up their financial systems. While this has brought certain benefits, it has also increased the region's vulnerability to external shocks.

Skittishness in European financial markets would likely lead to the withdrawal of capital from Asia as risk aversion sets in. In 2008, soon after the collapse of Lehman Brothers, capital rapidly flowed out of Asia as a result of increased global risk perception. Most capital outflows were in the form of bank lending and portfolio investment. Outflows of portfolio funds will likely depress equity markets. Correlations of stock returns and volatilities for the region's economies increased dramatically in the second half of the 2000s (Table 1), increasing the likelihood for stronger contagion effects throughout the region in the event of a crisis in eurozone financial markets.

If the eurozone debt crisis worsens, it could result in a rise in global investor risk aversion, which would have an impact on Asian economies. A key concern for policymakers is that capital flows can suddenly reverse, as they did the wake of the 2008/09 GFC. This was not caused by fundamental weaknesses in the region's economies or financial systems, but by a global rise in risk aversion following the financial crisis in the US (Milesi-Feretti and Tille 2010). Using a large sample of 75 countries, Milesi-Feretti and Tille (2010) found that capital outflows during the GFC were linked to the degree of financial integration, trade flows, macroeconomic conditions, and the composition of external liabilities. Countries with higher levels of bank borrowing were the worst hit.

4. Estimating the Impact of Spillovers from a eurozone Financial Crisis

To estimate the potential impact of spillovers from a financial crisis in the eurozone, we employ the global vector autoregression (GVAR) model originally introduced by Pesaran

et al. (2004) and further developed by Dees et al. (2007). The advantage of the GVAR model is that it not only incorporates the economic structures and global interdependencies of the world economy into a VAR model, but also avoids the identification problem found in VAR models. Furthermore, there are major differences in the cross-country correlations of various real variables. For instance, equity returns are much more closely correlated across countries than real gross domestic product (GDP) growth and inflation. This suggests that different channels of transmission should be considered. The GVAR approach allows us to model these different types of links directly using trade-weighted observable macroeconomic aggregates and financial variables.

The advantage of performing a quantitative assessment of this type is that it allows us to identify which economies are likely to be most vulnerable in the event of a crisis, as well as providing an estimate of the magnitude of the impact on individual economies. These estimates can provide policymakers with a quantitative assessment of the extent of their vulnerability, and can serve as an important incentive to implement timely remedial policy actions.

The GVAR approach has been used by several researchers to examine spillover effects of this type. Galessi and Sgherri (2009), for instance, analyzed the transmission of shocks across financial sectors in Europe. They used bilateral bank lending as the weights in their model. Chen et al. (2010), on the other hand, used the GVAR model to examine how banks' and nonfinancial private companies' default risk could spread among countries. In their case, a combination of trade and financial variables were used as the weights in conducting the estimation.

To estimate the spillovers from an external financial shock, we construct a GVAR model for 13 economies: the US, United Kingdom, and eurozone, plus 10 Asian economies—the East Asian economies of the People's Republic of China (PRC); Hong Kong, China; Japan; and the Republic of Korea; the five original members of the Association of Southeast Asian Nations (ASEAN), which are Indonesia, Malaysia, Philippines, Thailand, and Singapore; and India. The model uses real GDP growth, equity prices, lending to the private sector, and interbank rates. It is estimated using monthly data over the period 1999–2011. As GDP growth data are only available quarterly, we used interpolation methods to convert quarterly GDP growth into monthly figures, following Smith and Galessi (2011). Since we are interested in examining the impact of financial linkages across countries, we use the share of portfolio investment in the economy—obtained from the Coordinated Portfolio Investment Survey—as the weights for the GVAR model.

In order to examine the impact of a shock from the European financial markets, we estimate generalized impulse response functions (GIRFs) as suggested by Pesaran and Shin (1998). Within the GVAR framework, GIRFs are widely used as they are not affected by the ordering of the variables and countries. In a large model with many countries and variables, there is no obvious way to identify the ordering of countries. Furthermore, the focus of our analysis is to examine the spillover effects from the eurozone on Asian economies rather than to identify the effects of a specific shock.

Figures 11a and 11b present the GIRFs of a negative one standard deviation shock on eurozone equity markets on Asian stock markets. Our dynamic analysis shows that the equity market shocks from the eurozone are transmitted quickly to the region through stock prices. There are substantial co-movements in Asian stock markets following a negative shock in eurozone equities. The transmission is rapid, with the peak effect occurring about 5–7 months after the onset of a shock. One exception is the PRC, which is less affected by a fall in eurozone stock prices. This suggests that movements in the PRC's relatively closed equity markets are driven more by domestic factors, making them less vulnerable to external factors.

Another way to gauge the impact of a eurozone equity shock is to compare the impact of the shock on Asian economies relative to that in the eurozone. For each economy, the biggest impact on the region's stock markets is compared in Figure 12 with the biggest impact among eurozone equity markets. The impact on the region's stock markets is found to be about one-half the level of the eurozone stock market impact. We find that the equity markets of India, Indonesia, and Singapore are most affected by a eurozone shock, while there seems to be less of a spillover effect on the PRC stock market.

Next, we examine the impact on Asia's economic growth from a eurozone financial shock. We find that the responses of the region's economies are mostly similar (Figures 13a, 13b). However, the impact of the shock on economic growth, as opposed to equity markets, is transmitted over a longer period, taking 7–9 months to reach its trough. Economic growth rates in Malaysia and Singapore are the most affected by a eurozone equity shock. In contrast, the economies of Indonesia, the PRC, and the Philippines—with their relatively large domestic sectors—appear to be better insulated against a financial shock from Europe.

Our empirical results show that a eurozone financial crisis would have a small but non-negligible impact on the region's stock markets and economic growth. Such a crisis would affect countries in the region to varying degrees, with ASEAN economies such as Malaysia, Thailand, Indonesia, and Singapore showing more vulnerability to the financial fallout. In terms of real economic impact, however, Singapore and Malaysia are more exposed given their greater reliance on global markets. These are the effects that we can directly attribute to a further shock in the eurozone. What we cannot quantify are the indirect effects that may flow from adjustments that take place via changes in value assessments and confidence. Since the region's asset prices—both real and financial—have seen significant increases resulting from the large inflows of capital driven by quantitative easing in the advanced economies, there could be an underlying perception among global investors of overheating that will result in a bubble. If the direct impact of a eurozone shock leads to a reassessment of asset valuations in the region and perceptions of risk, this could lead to further corrections. Although difficult to quantify, the possibility of such indirect effects are real, and could accumulate to produce a much greater negative impact on the region.

5. Is East Asia Ready for Any Fallout?

How prepared is the region to deal with a shock in the eurozone that translates into a liquidity crisis in East Asia? Although our analysis points to a small but non-negligible direct impact from a further shock to the eurozone economy, this can easily be amplified into a significant one through indirect channels. In this section, we look at whether the region is ready to deal with such fallout. The importance of the region's ability to fend for itself is heightened if such a contagious crisis sees a significant share of the world competing for scarce global resources. The current situation in Europe has already seen the troika—the IMF, European Commission, and European Central Bank—expend €303 billion in bailout funds for Greece (€130 billion total with an IMF share of €28 billion); Portugal (€78 billion total with an IMF share of €27.5 billion); Ireland (€85 billion with an IMF share of €22.5 billion); and Cyprus (€10 billion with an IMF share of €1 billion). Given the sheer size of the amounts involved, it is easy to see how a worsening situation in Europe could constrain the IMF's ability to serve as lender of last resort should Asia also require emergency support.

When the AFC hit, the ASEAN Swap Arrangement (ASA) proved sorely inadequate, given its small size, in providing the liquidity needed by its members. As a result, there was little choice but to resort to the IMF. Amid widespread disenchantment with the way in which the IMF dealt with the AFC, the region has been working since then on bolstering its own financial safety nets. The first step toward establishing such a scheme was taken in May 2000 with the launch of the Chiang Mai Initiative (CMI) as part of the ASEAN+3 process.² The CMI grew from just \$1 billion at inception to \$84 billion at the onset of the GFC.

If the AFC crystallized the need to transform the ASA into the CMI, then the GFC of 2008/09 highlighted the continued shortcomings of that transformation. Despite the CMI having grown rapidly in size, it was still too small to be effective during the GFC and the absence of rapid-response mechanisms forced affected countries to turn to bilateral swaps with the US, the People's Republic of China, and Japan, and to regional agencies (Hill and Menon 2012). What followed was a radical transformation of the CMI. First, it was multilateralized so that the revamped CMIM would be a self-managed reserve pooling arrangement governed by a single contract, reducing costly and wasteful duplication. Second, the size of the pool was increased to \$120 billion in May 2009. A decision was taken to establish an ancillary institution in the form of an independent regional surveillance unit, the ASEAN+3 Macroeconomic Research Office (AMRO), which came into being in May 2011.

The continuing problems in the eurozone and risks of further deterioration have highlighted the need to strengthen the CMIM's capacity to act as a regional financial safety net (Azis 2012). To address this need, the 15th Meeting of ASEAN+3 Finance Ministers in May 2012 agreed to (i) double the total size of the CMIM to \$240 billion; (ii) increase the IMF de-linked portion to 30% in 2012, with a view to increasing it to 40% in

² ASEAN+3 refers to the 10 member economies of ASEAN plus the PRC, Japan, and the Republic of Korea.

2014, subject to review should conditions warrant; and (iii) introduce a crisis prevention facility.

These are impressive developments over a relatively short period of time. However, the critical question that needs to be answered is whether these reforms are sufficient to provide the region with a working alternative in the event of a crisis? Is it likely that the CMIM will be called upon when the next crisis strikes? Unfortunately, the CMIM still appears unusable, whether as a cofinancing facility in tandem with the IMF or as a stand-alone alternative. There are a number of reasons for this, and therefore an equal number of issues that need to be addressed to make it viable.

First, as a reserve-pooling arrangement, there is no actual fund but rather a series of promises (Hill and Menon 2012). This is not a problem per se, except when there are no rapid response procedures to handle a fast-developing financial emergency. Unless these procedures are streamlined, the CMIM is unlikely ever to be called upon, even as a cofinancing facility. Yet if the IMF's resources are already committed elsewhere, especially if conditions in Europe were to deteriorate thus requiring further bailouts, then the role of the CMIM becomes critical. If the CMIM is to be a real substitute for the IMF and serve as a true regional alternative, then the size of the fund, or the portion de-linked from an IMF program, needs to be increased substantially.³ Unlike with the IMF, the CMIM does not have an exceptional access clause that allows a country to borrow amounts above their quota in exceptional circumstances provided that the country satisfies a predetermined set of conditions. If there is a full-blown systemic crisis in East Asia that spreads across several members, then this clause would not be of much value either. This is another reason why membership also needs to expand beyond ASEAN+3, not just to bolster the size of the fund but also to diversify it.

Without these changes, ASEAN+3 is unlikely to turn to the CMIM as a co-financier or a substitute for the IMF, which explains why countries continue to take the high-cost mercantilist route of self-insurance through excessive holdings of foreign exchange reserves, or why they continue to pursue bilateral swaps separately, often with other CMIM members. Furthermore, Japan is also looking to strengthen bilateral relations with ASEAN directly, bypassing the ASEAN+3 process, and is expected to revive bilateral currency swap agreements with Malaysia, Singapore, and Thailand, and to strengthen existing bilateral arrangements with Indonesia and the Philippines. Some see this as an early warning sign of an unraveling of the CMIM, as a result of rising tensions involving territorial disputes and competition among the "+3" countries to gain influence in Southeast Asia.⁴ If this process continues or spreads, we could see a return of the so-called "noodle bowl" of bilateral swap agreements that the CMIM's single agreement was designed to replace. In fact, bilateral swaps are quickly becoming the main instrument in

³ During the AFC, Thailand received over \$17 billion in emergency liquidity. Yet, Thailand (and the four other original ASEAN members) can access only a fraction of this amount, about \$7 billion in 2012 US dollars, from the CMIM without an IMF program. Indonesia received almost six times (\$40 billion) the amount of its de-linked portion of the CMIM, or an even greater multiple if converted into today's dollars. The Republic of Korea was the other crisis-hit country that availed of an IMF-led program and bilateral support that totaled \$57 billion, while today its full quota with the CMIM is only about \$38 billion (Hill and Menon 2012).

⁴ See, for instance, Park (2013) and *Kyodo News* (2013).

Asia's financial safety net, although on a somewhat ad hoc basis. However, shifting national reserves to a regional fund that is unlikely to be used could actually be counter-productive as it weakens a country's first line of defense. Although ASEAN+3 may appear to have a cofinancing facility with the IMF in the CMIM, it is not a usable one. If it wants its own regional safety net, then it has a long way to go. How far is still unclear, but hopefully it can be made workable before, rather than because of, the next crisis.

6. Conclusion

While Southeast Asia entered the GFC with relatively low levels of debt, it is now more highly leveraged following large inflows of capital resulting from successive rounds of quantitative easing in the advanced economies of Europe and the US. The recent decision by the Bank of Japan to also pursue monetary easing aggressively is likely to lead to further flows into the region. At the same time, given the weakness of global financial institutions, we have seen considerable cutbacks in loans by European banks to the region. The recent decision by the Federal Reserve to begin winding back quantitative easing is already being felt in the region. Trade finance is also being affected. If there is a worsening of the eurozone debt crisis, and there are signs of this with yields beginning to increase again starting June 2013, it could result in a rise in global investor risk aversion that would have an impact on Southeast Asian economies. To estimate the impact, we use a GVAR model to quantify possible spillover effects from a crisis in Europe. We find that while the overall impact of a worsening in the eurozone crisis is likely to be quite limited, the larger impact would be on equity markets in the region. There is also the possibility that such spillovers, while relatively small in the aggregate, could lead to a second round of adjustments involving re-evaluation of other asset prices. In other words, even a muted direct impact could result in a magnified overall impact through indirect means, involving adjustments to asset prices viewed to be at inflated levels.

For this reason, the region needs to remain vigilant against financial spillovers, even if initially small in size. Given the potential for shocks in eurozone financial markets to affect Asia both directly and indirectly, policymakers need to ensure that they respond quickly to bolster financial stability and avoid deterioration in market confidence. They should also continue to carefully monitor banks' portfolios, especially in countries where lending has risen sharply, to ensure that there has not been excessive risk-taking. A further real-side contraction driven by a trade slowdown could compound the debt situation in many Asian countries.

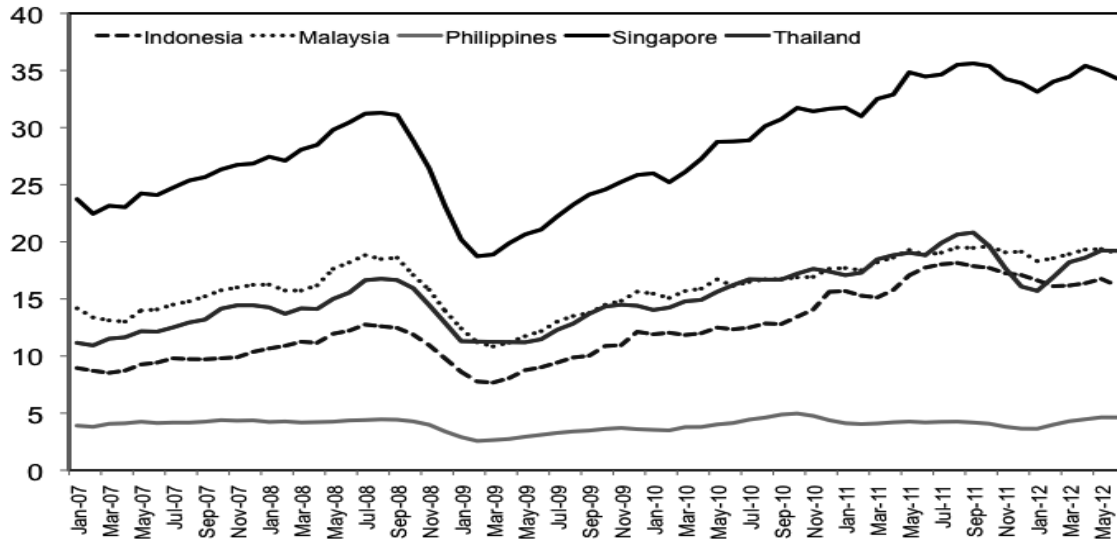
In light of this, there is a pressing need to ensure that crisis management frameworks are strengthened and ready for use. Despite significant progress over a relatively short period of time, East Asia's regional financial safety net still appears unusable. Further reforms are necessary in order to make the CMIM workable should a crisis hit the region, especially if resources are scarce in the event of a global meltdown. With the IMF's resources already stretched in bailing out Europe, a further shock there would leave a lot less available for countries in Asia should contagion hit.

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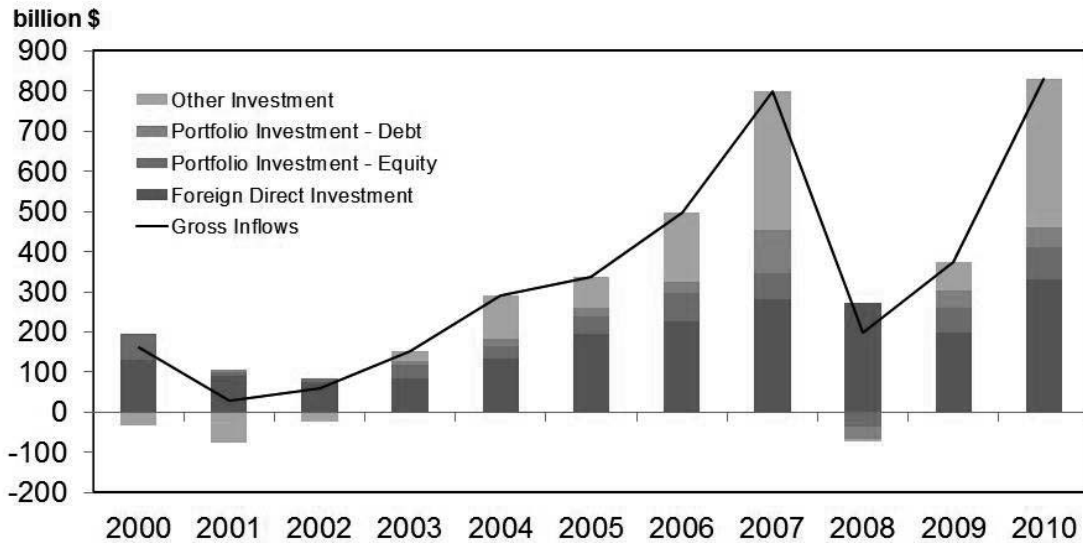
Figure 1: Merchandise Export Growth
(y-o-y, %, 3-month moving average)



y-o-y = year-on-year.

Source: ADB's Asia Regional Integration Center.

Figure 2: Composition of Capital Inflows in Emerging Asia

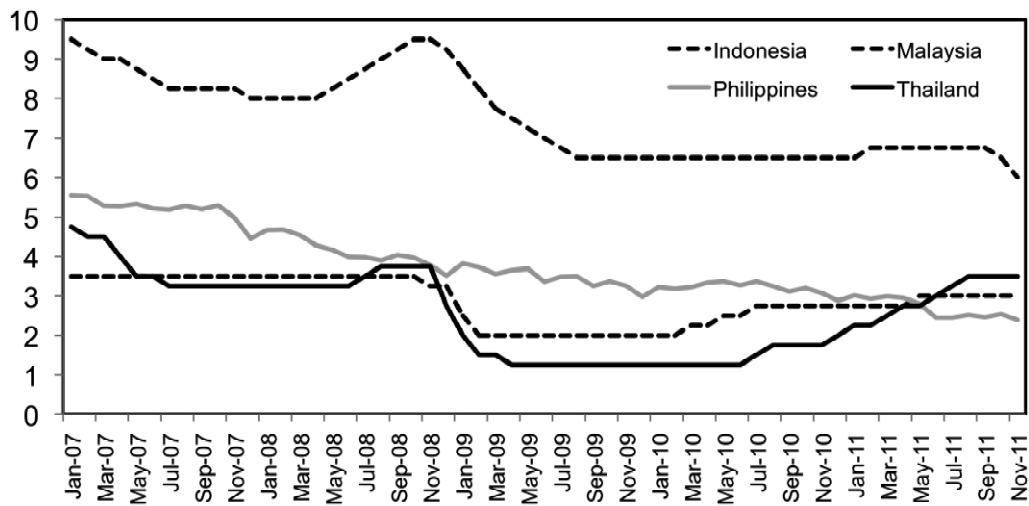


Notes:

1. Gross Inflows = Foreign Direct Investment + Portfolio Investment + Other Investment.
2. Emerging East Asia comprises the People's Republic of China (PRC); Hong Kong, China; Indonesia; the Republic of Korea; Malaysia; Philippines; Singapore; and Thailand.
3. Data for 2011 is incomplete. Data for the PRC, Singapore, and Thailand are not available from data source. Data for Malaysia only included Foreign Direct Investment and Gross Inflows.

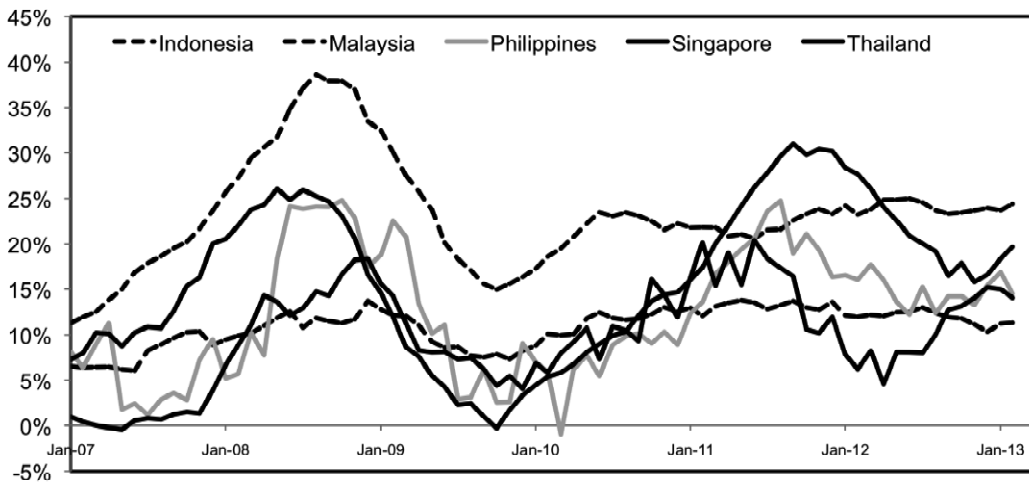
Source: ADB staff calculations based on balance of payments data (BPM5) from International Financial Statistics, IMF.

Figure 3: Policy Rates



Source: ADB's Asian Regional Integration Center.

Figure 4: Growth in Bank Lending (y-o-y, %)



Source: International Financial Statistics.

Figure 5: Domestic Credit Provided by Banking Sector (% of GDP)

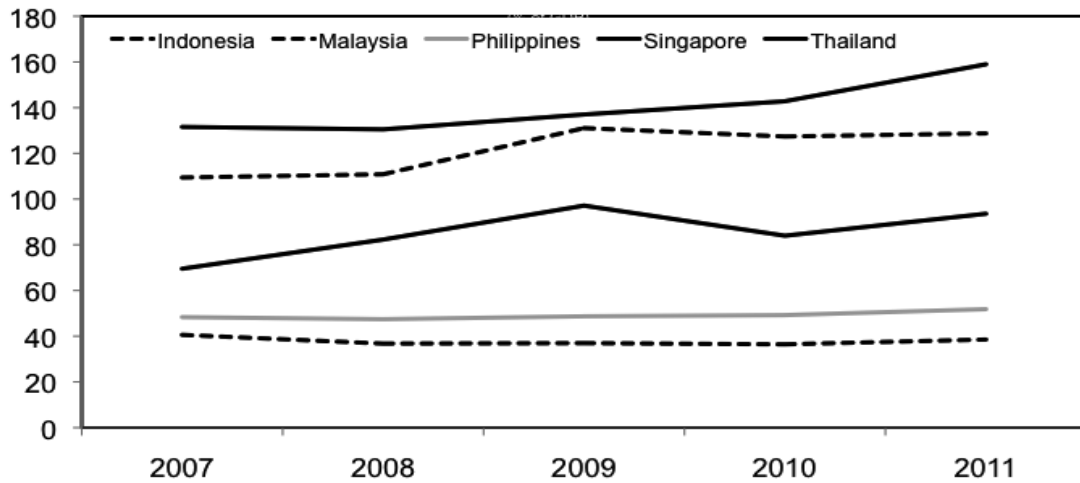
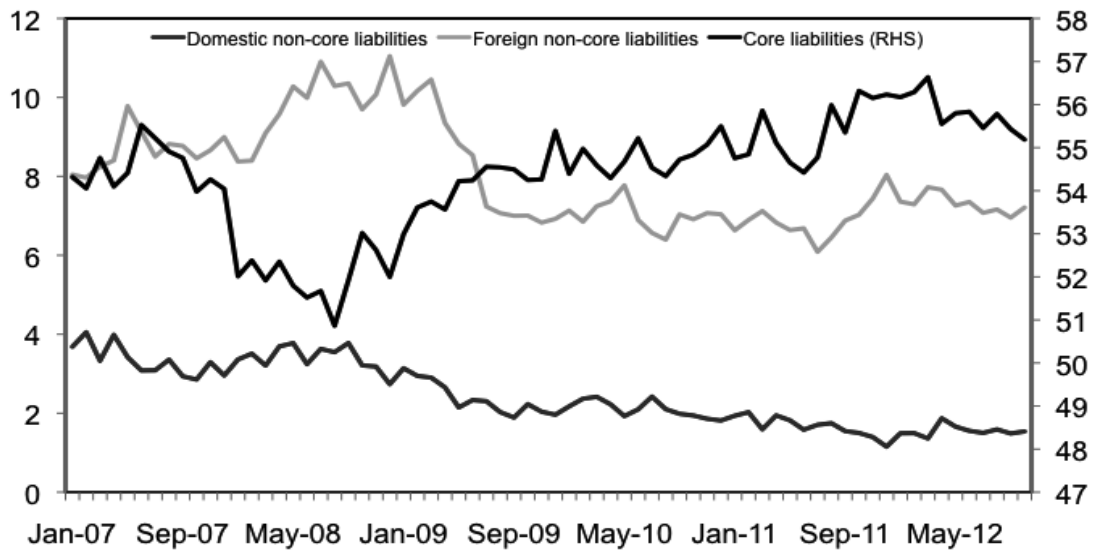


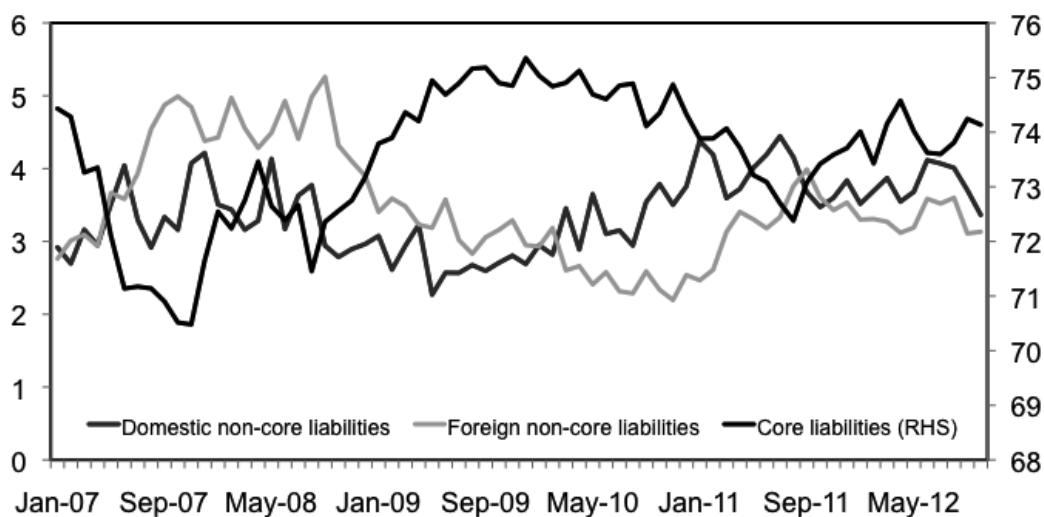
Figure 6: Share of Total Liabilities in Singapore (%)



Notes: Liabilities refer to those of domestic banking units. Domestic noncore liabilities refer to amounts due to banks in Singapore. Foreign noncore liabilities refer to amounts due to banks outside Singapore. Core liabilities refer to deposits.

Source: ADB calculations using data from the Monetary Authority of Singapore.

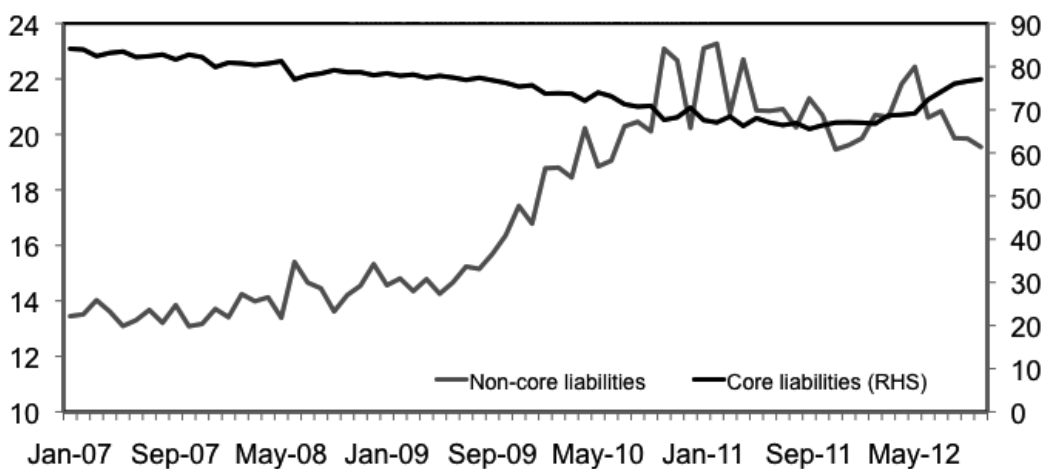
Figure 7: Share of Total Liabilities in Malaysia (%)



Notes: Liabilities refer to those of commercial banks including Islamic finance. Domestic noncore liabilities refer to sum of amounts due in Malaysia and bills payable in Malaysia. Foreign noncore liabilities refer to sum of amounts due outside Malaysia and bills payable outside Malaysia. Core liabilities refer to deposits.

Source: ADB calculations using data from Bank Negara Malaysia.

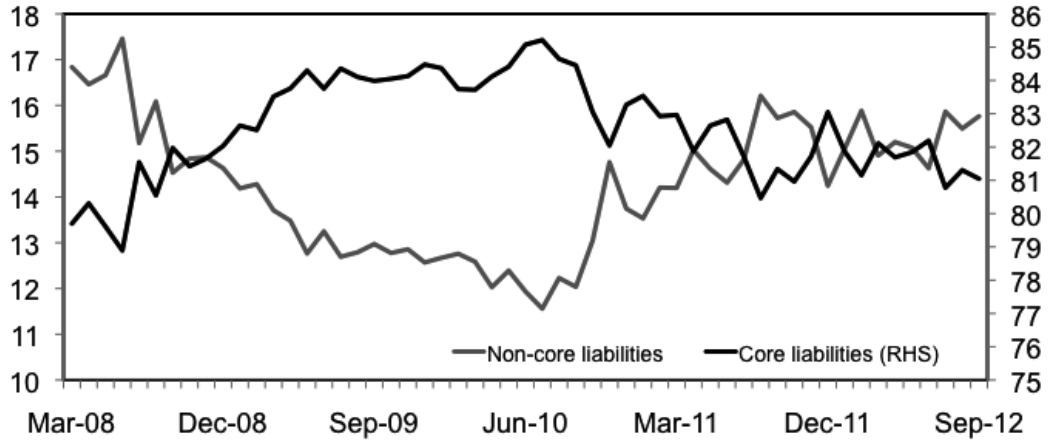
Figure 8: Share of Total Liabilities in Thailand (%)



Notes: Liabilities refer to those of commercial banks. Total liabilities comprise deposits included in broad money, deposits excluded from broad money, demand deposits, securities excluding shares, loans, other accounts payable, and accrued interest on deposit. Noncore liabilities refer to loans plus other accounts payable. Core liabilities refer to deposits included in broad money, deposits excluded from broad money, and demand deposits.

Source: ADB calculations using data from the Bank of Thailand.

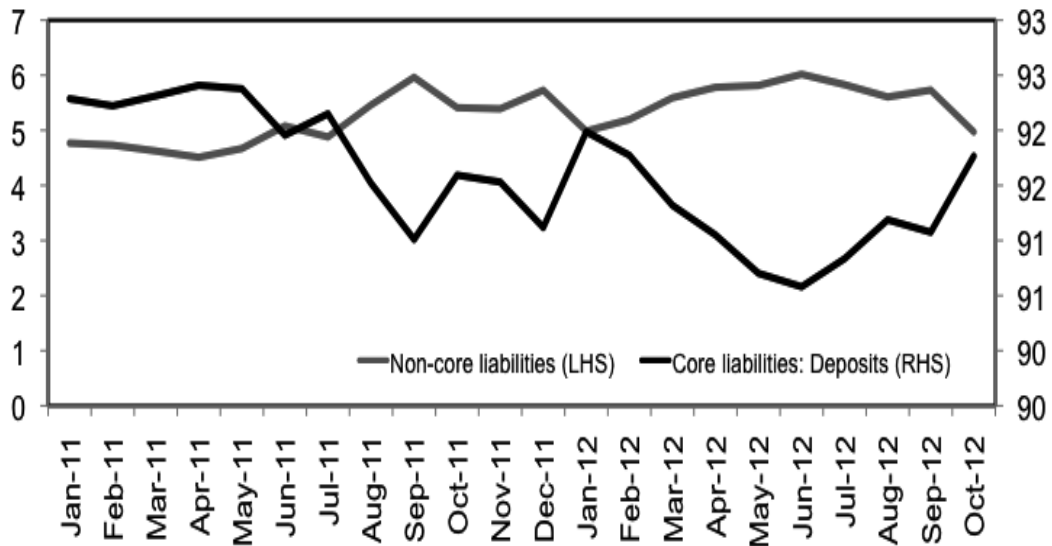
Figure 9: Share of Total Liabilities in the Philippines (%)



Notes: Liabilities refer to those of universal and commercial banks. Noncore liabilities refer to bills payable and other liabilities. Core liabilities refer to deposits.

Source: ADB calculations using data from Bangko Sentral ng Pilipinas.

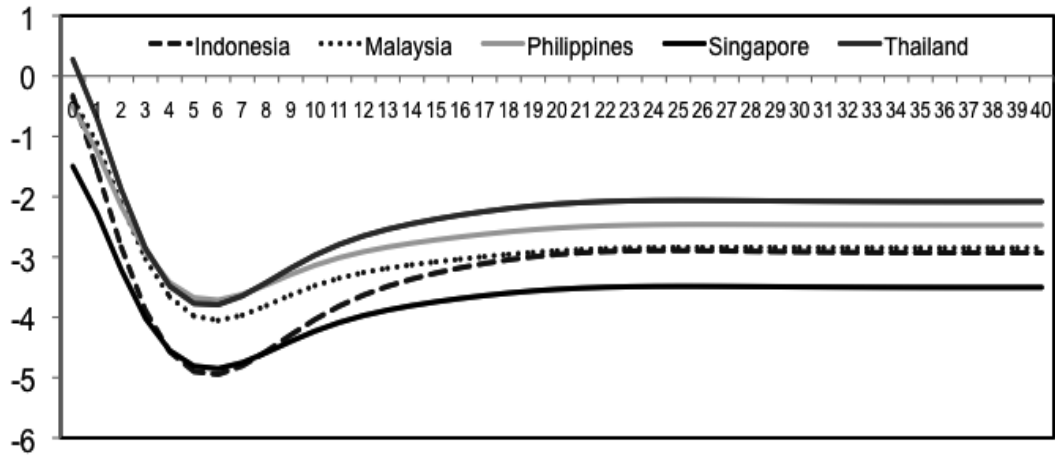
Figure 10: Share of Total Liabilities in Indonesia (%)



Notes: Liabilities refer to those of commercial banks. Total liabilities comprise third party funds (deposits), liabilities owed to Bank Indonesia, interbank liabilities, issued securities, loans received, spot and derivatives liabilities, other liabilities, and margin deposits. Noncore liabilities refer to interbank liabilities and loans received. Core liabilities refer to third-party funds.

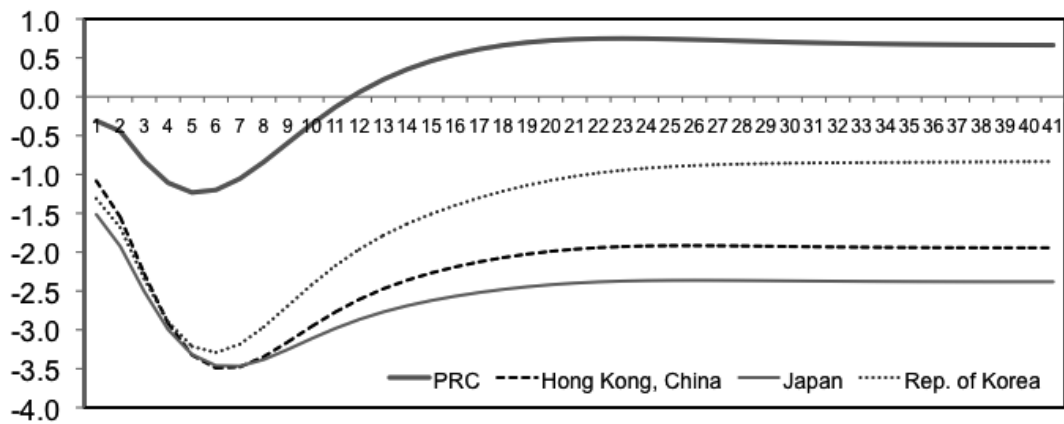
Source: ADB calculations using data from Bank Indonesia.

Figure 11a: Response of ASEAN Equity Returns to a Negative eurozone Equity Shock



Source: Authors' calculations.

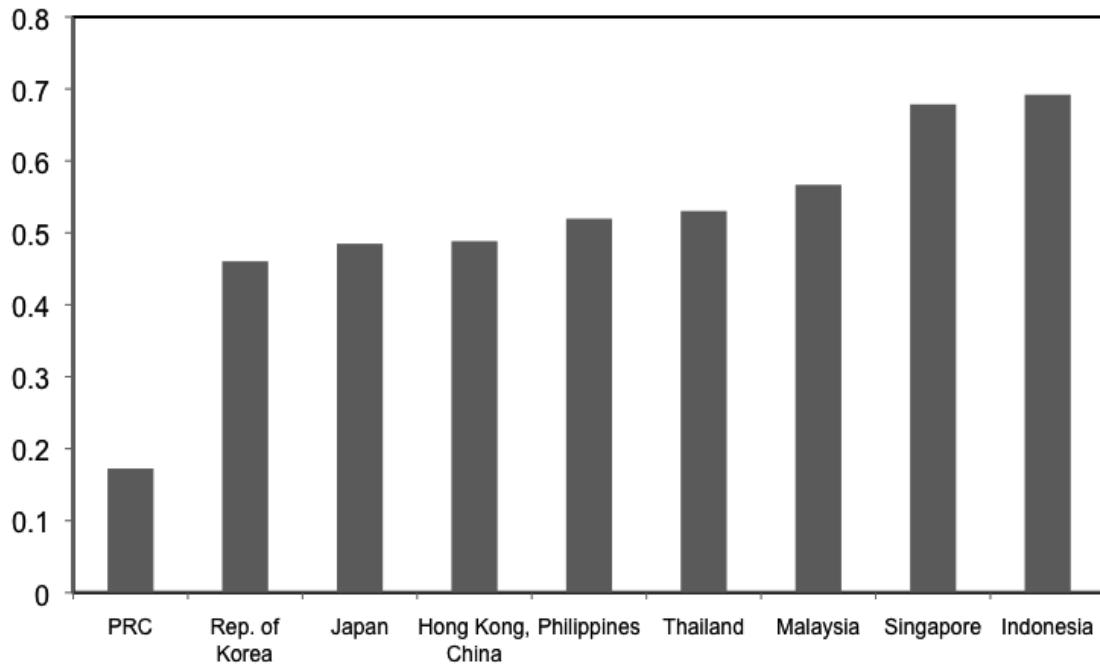
Figure 11b: Response of Equity Returns to a Negative eurozone Equity Shock



PRC = People's Republic of China.

Source: Authors' calculations.

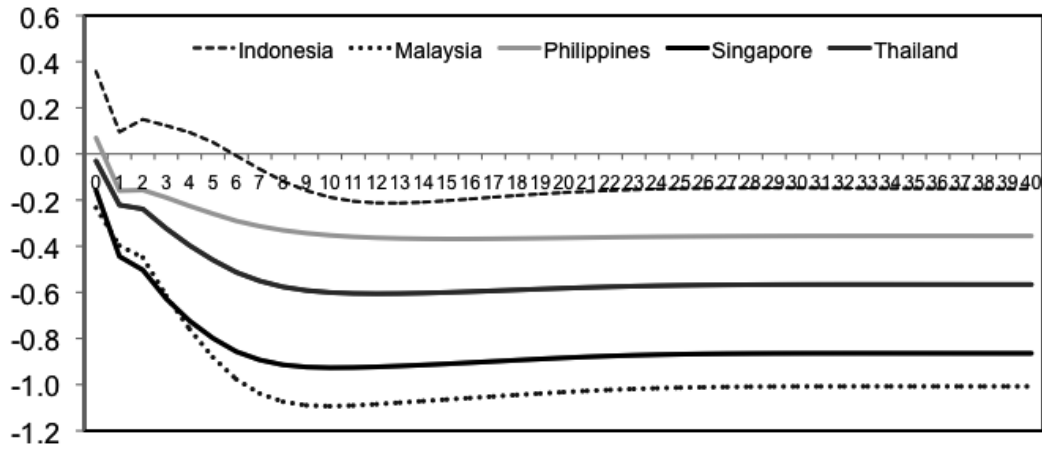
Figure 12: Impact Elasticity of Asian Equity Markets to a Negative eurozone Equity Shock



PRC = People's Republic of China.

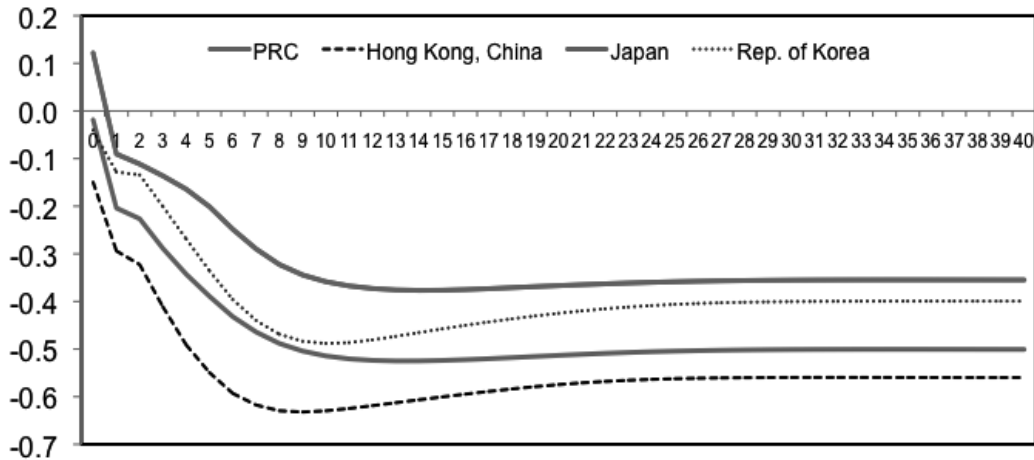
Source: Authors' calculations.

Figure 13a: Response of ASEAN Output Growth to a eurozone Equity Shock



Source: Authors' calculations.

Figure 13b: Response of Output Growth to a eurozone Equity Shock



PRC = People's Republic of China.

Source: Authors' calculations.

Table 1: Average Simple Correlation of ASEAN-4 Stock Price Index Weekly Returns and Volatility

Economies	Period	Returns	Period	Volatility
ASEAN-4	2002–05	0.36	2003–05	0.15
	2006–11	0.66	2006–11	0.78
Japan	2002–05	0.37	2003–05	0.30
	2006–11	0.58	2006–11	0.68
Europe	2002–05	0.26	2003–05	-0.02
	2006–11	0.56	2006–11	0.65
United States	2002–05	0.20	2003–05	-0.01
	2006–11	0.43	2006–11	0.66

Note: ASEAN-4 refers to Indonesia, Malaysia, Philippines, and Thailand.

Source: Authors.

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Impact of eurozone Financial Shocks on Southeast Asian Economies

How will Southeast Asian economies be affected by a further deterioration in conditions in the eurozone? We find that although the direct impacts will be muted, it could trigger a larger adjustment should it lead to a reassessment of risks and asset valuations. This possibility is heightened by increased vulnerability following massive inflows of capital, which can quickly reverse, and build-up of debt. Therefore, regional financial safety nets need to be strengthened urgently to deal with this possibility.

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ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.7 billion people who live on less than \$2 a day, with 828 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.