

Global Financial Crisis and Growth Prospects in Asia-Pacific: A Sectoral Analysis

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Abstract

Among the hardest hit by the global financial crisis are the developing Asian economies even though they are geographically away from the crisis epicenters in the United States (US) and European Union (EU). This paper empirically examines the channels through which the global financial crisis propelled the regional economies into the worst post-1997 recession at both macroeconomic and sectoral levels using the cross-country panel from 1960 to 2008. The evidence points to the FDI inflow reversals and abating international remittances as the catalysts of the economic downturn even though the shrunken export demands are not likely to become a crucial threat to the region's rapid economic growth. At the sectoral level, the agricultural sectors exhibit more resilience to the economic slump than do manufacturing and service sectors. My empirical findings put forward macroeconomic and trade policy implications that equip the regional economies with immunity to the global financial crisis.

JEL Classification: O11; O53; O56

Key words: Economic Growth; Global Financial Crisis; Global Trade; FDI Inflow Reversals; International Remittances.

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1. Introduction

The global financial crisis has inflicted socio-economic hardships and catastrophes on the global economic community. The global economic outlook has been depressing, and the full recovery has yet been put in place. As of April 2009, IMF (2009) projected a sharp contraction of global output by 1.3 per cent, compared with an average growth rate of 3.2 per cent in 2008, on top of the international trade collapses, international capital flow reversals, and retrenchment in the labour markets.

[Insert Figure 1 here]

Even though the growth prospects of the Asian economies were rather buoyant due to their resilient domestic markets and less exposure to the collapses of the international financial institutions in the economic powerhouses, especially those in the United States (US) and the United Kingdom (UK), the recent developments unveiled the opposite – the downswing in the region is unprecedented. The annual GDP growth of the ASEAN-6 economies, as shown in Figure 1, exhibited a sharp plummet from 5.5 per cent in 2007 to 3.6 per cent in 2008 on average while the CLMV (Cambodia, Laos, Myanmar and Vietnam) economies experienced slower growth from 8.8 per cent in 2007 to 6.3 per cent in 2008. The prickly plunges in the annual GDP growth figures were attributable to the drastic downturns in the last quarter of 2008. World Bank (2009) further projected a GDP contraction in the region by 1.5 per cent in 2009.

These observations give rise to a fundamental question: Why the Asian economies are among the hardest hit by the global financial crisis although the region is geographically distant from the crisis epicentres? This research enquiry has been widely discussed among policymakers and academics, yet unanswered in the literature.

The present paper attempts to bridge this gap. I empirically investigate three mechanisms through which the global financial crisis originated in the advanced economies propelled the Asian economies into the worst post-1997 recession using the cross-country evidence based on the *World Development Indicators* for the period of 1960-2008. The three channels include the plunges in global trade, FDI inflow reversals and deteriorating international remittances. My empirical framework indicates that while the East Asian economies potentially decouple themselves from the adverse effects of the global financial crisis, the FDI inflow reversals and plummets in international remittances

pose the serious threats to restoring rapid economic growth in the region. My sectoral decomposition further reveals that the agricultural sectors are more resilient than the manufacturing and service sectors in the sense that they potentially shield themselves from the adverse impacts of FDI inflow reversals even though the declines in workers remittances still cut back the domestic demands for agricultural products. My empirical findings shed light on the path towards reviving the business cycles and restoring economic balances in the region.

The organisation of this paper can be briefly outlined as follows. Section 2 examines the recent developments in a backdrop of the global financial crisis, including global trade collapses, FDI inflow reversals and dwindling workers' remittances. Section 3 elaborates the empirical framework, together with the data sources and measurements. Section 4 presents and analyses the macroeconomic impacts of the global financial crisis. Section 5 pushes forward my sectoral analysis where the economic impacts are contemplated at the sectoral level. Section 6 concludes and provides policy implications.

2. Global Financial Crisis and the Asian Economies

A foremost question is why the Asian economies are among the hardest hit by the global economic catastrophe even though they are geographically isolated from the crisis epicentres in US and EU. With the global financial crisis underway, at least three developments paint a bleak picture of the real economic fortunes.

2.1 Global Trade Collapses

[Insert Figure 2 here]

First, the economies import the economic shocks via the commodity markets. Figure 2 portrays the shares of exports and imports in GDP for ASEAN and China. Since 1960s, these economies have thrived on trade-led policies whereby ever-increasing exposure to the international markets potentially offers robust economic growth, accelerated poverty reductions, rapid productivity growth, and outward-looking industrialisation. Yet, with the global economic meltdown underway, the trade-led growth strategies spawned a susceptibility to a momentous drop in commodity trade. Asian Development Bank, for instance, estimated remarkable declines in exports from

key exporting Asian economies – 32 per cent for Vietnam, 25 per cent for Indonesia, 18 per cent for Thailand and 13 per cent for Malaysia. In addition, the momentum towards free flows of goods and services pertains to other welfare costs including inadequate domestic consumption and investment in addition to inefficiency in the resource allocation.

2.2 FDI Inflow Reversals

[Insert Figure 3 here]

Second, the de-leveraging process in the capital markets accounts for the pernicious effects of the global economic unrest, which have become increasingly discernible. Figure 3 highlights the fact that the Asian countries have relied heavily on foreign direct investment (FDI) as the means to maintain their competitiveness and economic growth. The multinational activities deliver numerous economic benefits including capital resources, new technologies, marketing techniques and managerial skills and know-how (Blomström and Kokko, 1998; Mody, 2004). Nevertheless, the data released by International Monetary Fund (IMF) pointed to recent drastic capital inflow reversals as a consequence of the de-leveraging process in the advanced economies that slashed the net FDI flows to emerging markets by about 2 percentage points of GDP in comparison with 2007.

2.3 Declining International Remittances

[Insert Figure 4 here]

Last, the global economic crisis propels the Asian economies into the worst post-1997 recession through the squeezing labour markets in advanced economies. The International Labor Organization (ILO) estimated the spiralling unemployment rates across the major East Asian economies, meaning 7.2 more million people becoming unemployed. As shown in Figure 4, the Asian economies, especially for the CLMV economies, have increasingly depended on workers' remittances from overseas. This implies that the falling inflows of international remittances may inflict economic hardships into the regional economies in terms of deteriorating economic vulnerabilities and worsened poverty reductions as well as rural development.

3. Empirics

This section is devoted to the empirical investigation of the three mechanisms through which the global financial crisis inflicted the ripple effects on economic sectors. Throughout this paper, I utilise the *World Development Indicators* (WDI) dataset for the period of 1960-2008, provided by the World Bank, to obtain various macroeconomic and trade variables of the selected East Asia economies including ASEAN-10 (Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam), on top of Australia, China, Hong Kong, Japan, Korea, and New Zealand. In so doing, I consider the empirical framework as follows.

$$GROWTH_{it}^j = \alpha_0 + \alpha_1 GFCF_{it} + \alpha_2 TRADE_{it} + \alpha_3 FDI_{it} + \alpha_4 REMIT_{it} + \alpha_5 CRISIS_{it} + u_{it}, \quad (1)$$

where u_{it} is the error term, and the subscripts i , $i = 1, \dots, N$, and t , $t = 1, \dots, T$, denote an economy i at the time period t , respectively.

$GROWTH^j$ is the growth rate of value added produced by a sector j . There are five explanatory variables taken into consideration. The first is the gross fixed capital formation as a percentage of GDP, given by $GFCF$. It aims to capture country-specific productivity levels as suggested by Siegel and Griliches (1992) and Siegel (1997). One would expect that the fixed capital accumulation results in higher productivity performance, thereby enhancing GDP growth. Central to my analysis are the next three variables. $TRADE$ is the index of international trade openness measured by the ratio of exports and imports to GDP. It captures the impacts of the global financial crisis on an economy vis-à-vis the commodity markets. FDI is the share of net foreign direct investment in GDP, and $REMIT$ is the share of workers' remittances as a percentage of GDP. The former accounts for the effects of capital inflow reversals whereas the latter aims to capture the worker retrenchment in the foreign labour markets. $CRISIS$ is the dummies representing the structural break of the 1997 Asian financial crisis. It takes the value of unity for the years 1997-1998, and zero otherwise.

The estimations of the model specification (1) are not straightforward, however. First, the cross-country variations in growth pose a potential problem of heteroskedasticity. As is well-known, if this is the case, the standard ordinary least squares (OLS) estimates are biased. I tackle this problem by employing the heteroskedasticity-robust standard error estimators. More importantly, the model specification (1) tends to suffer from the potential endogeneity problem in that all explanatory variables, particularly *GFCE*, *TRADE*, *FDI* and *REMIT*, are endogenously determined by other unobserved factors, like macroeconomic policy, trade policy, financial market development, industrialisation policy and so forth. In this sense, the standard OLS procedure is likely to produce inconsistent estimates. To account for the potential endogeneity biases, I adopt the Arellano-Bond Generalised Method of Moment (GMM) estimation (Arellano and Bond, 1991). Accordingly, the model specification (1) is modified as follows:

$$\begin{aligned} \Delta GROWTH_{it}^j = & \beta_0 + \beta_1 \Delta GROWTH_{it-1}^j + \beta_2 \Delta GFCE_{it} + \beta_3 \Delta TRADE_{it} + \beta_4 \Delta FDI_{it} \\ & + \beta_5 \Delta REMIT_{it} + \beta_6 CRISIS + \varepsilon_{it}, \end{aligned} \quad (2)$$

where ε_{it} is the error term, and Δ is the first-differenced operator. It should be highlighted that the additional advantage of the Arellano-Bond GMM estimation as in (2) rests with its capability to account for the dynamic adjustments of economic growth captured by the coefficient of $\Delta GROWTH_{it-1}^j$.

The summary of statistics and the correlation matrix are portrayed in Tables A1 and A2 in Appendix, respectively.

[Insert Tables A1 and A2 here]

4. Empirical Results

[Insert Table 1 here]

Table 1 presents the parameter estimates based on the model specification (1) where the growth rate of GDP, $GROWTH^{GDP}$, enters its right hand side as a dependent variable and is meant to account for the macroeconomic impacts of the global financial

crisis. The first column portrays the standard OLS estimates while the second and third columns correspond to the fixed and random effects estimations, respectively. However, should there exist the endogeneity bias problem, these estimations convey inconsistent results.

[Insert Table 2 here]

To provide consistent and robust results, I obtain the Arellano-Bond GMM estimates based on the model specification (2). The GMM estimates are qualitatively identical to those reported in Table 1 as their signs and significance remain unchanged. As expected, the coefficient of *CRISIS* is negative and statistically significant, implying that the Asian financial crisis in 1997-98 entailed a sharp contraction in the Asia-Pacific economies. The main findings can be briefly summarised as follows.

First and foremost, the Asia-Pacific economies potentially decouple themselves from sharp plunges in global trade in a backdrop of the global financial crisis since freer flows of goods and services trade in the region do not have a significant contribution to output growth. As shown in Table 2, the consistent estimate of $\Delta TRADE$ is statistically insignificant. The weak evidence may be explained by trade creation and trade diversion (Viner, 1950) associated with the persistent increases in the degrees of openness. The former is welfare-enhancing as it promotes trade among the members without interrupting trade with non-members, whereas the latter is welfare-deteriorating since it diverts greater trade among the members away from the non-members. The evidence implies that trimmed tariff and non-tariff barriers through regional trade arrangements (RTAs) among the Asia-Pacific countries, especially those under ASEAN+3 and ASEAN+6, tend to trigger trade diversion wiping out gains from free trade in terms of output growth.

In addition, the FDI inflow reversals and the declines in international remittances appear to be the crucial mechanisms through which the global financial crisis propelled the regional economies into a recession. Table 2 shows that the coefficients of ΔFDI and $\Delta REMIT$ are positive and statistically significant, suggesting that the Asia-Pacific economies have thrived on FDI and workers' remittances. The de-leveraging process in the capital markets and retrenchment in the foreign labour markets taking

place around the globe therefore account for a sharp contraction of economic growth in the region.

Last but not least, the Asia-Pacific economies tap on gross fixed capital formation as a key catalyst of economic growth. The coefficient of $\Delta GFCF$ reported in Table 2 turns out to be positive and statistically significant. This result is strikingly consistent with Thangavelu et al. (2009) who showed that the capital accumulation is a crucial source of economic growth in the East Asian economies.

5. Extensions: A Sectoral Analysis

Section 4 illuminates a macroeconomic picture of how the global financial crisis set back the economic growth of the Asia-Pacific economies. Even though my estimates have pointed to FDI inflow reversals and dissipated internal remittances as the channels through which the global financial crisis propelled the regional economies into a deep recession, it is very unlikely that the downturn evenly inflicts economic hardship on each sector. Therefore, it seems imperative to develop further analyses by weighing in on the effects at the sectoral level. In so doing, I consider three main sectors – agricultural, manufacturing, and service sectors.

5.1 Agricultural Sectors

[Insert Tables 3 and 4 here]

Tables 3 and 4 report the parameter estimates of the econometric models (1) and (2), respectively, where the growth rate of value added, $GROWTH_{it}^A$, in the agricultural sectors enter the specifications as a dependent variable. One may observe that the GMM estimates qualitatively differ from others, especially those of $GFCF_{it}$ and $CRISIS_{it}$, suggesting that the potential endogeneity may pose a serious problem. As such, the ensuing findings follow the GMM estimates portrayed in Table 4.

The gross fixed capital formation contributes negatively to the growth of the agricultural sectors since the coefficient of $\Delta GFCF_{it}$ exhibits a negative, statistically significant sign. This result is not surprising, however. The well-known Rybczynski Theorem predicts that capital accumulations shift away production factors from the

labour-intensive sector to the capital intensive one. Since the agricultural sectors are typically labour-intensive, capital accumulations essentially reduce the agricultural output.

Even though the agricultural sectors are potentially immune to global trade plunges and FDI inflow reversals, the estimates reveal that its growth fortune has tied closely to international remittances. These results seem plausible given the knowledge that the agricultural sectors have by and large hinted on the domestic markets. The declines in workers' remittances in a backdrop of the global financial crisis cut back purchasing power, thereby adversely affecting the demands for agricultural products.

Lastly, the agricultural sectors decoupled itself from the worst economic recession triggered by the 1997 Asian financial crisis as the coefficient of $CRISIS_{it}$, though negative, is statistically insignificant. This implies that the agricultural sectors in the region are relatively resilient, compared to other sectors, especially financial and manufacturing sectors.

5.2 Manufacturing Sectors

[Insert Tables 5 and 6 here]

Tables 5 and 6 produce the estimates pertinent to the growth of value-added in the manufacturing sectors, $GROWTH_{it}^M$, in the Asia-Pacific region. The main results are rather consistent with those of the macroeconomic impacts, except the GMM estimate of $\Delta GFCE_{it}$, which turns out to be statistically insignificant, though still positive. This implies that capital accumulations contribute insignificantly to growth of manufacturing sectors. One possible explanation of the weak relationship is that manufacturing activities comprise a wide range of labour intensities, from highly labour-intensive industries like food and beverage and textile industries to relatively low labour-intensive industries such as electronics, computer and machinery, parts and components. Within the same manufacturing sectors, some industries may gain while others may lose.

Consistent with the preceding results based on the macroeconomic impacts, FDI inflow reversals and sudden drops in international remittances constitute the channels through which the global financial crisis spawned the economic catastrophe in the

manufacturing sectors. The negative, statistically significant coefficient of $CRISIS_{it}$ substantiates the findings that the manufacturing sectors entered their worst recession in the aftermath of the 1997 Asian financial crisis.

5.3 Service Sectors

[Insert Tables 7 and 8 here]

Tables 7 and 8 reveal the parameter estimates for the service sectors, based on the specifications (1) and (2) respectively. In these estimations, the growth rate of value added contributed by the service sectors, $GROWTH_{it}^S$, proxies their economic fortune. In comparison with my preliminary results of the macroeconomic impacts, the main findings for the service sectors remain unchanged qualitatively. The service sectors have flourished on gross fixed capital accumulations as a key engine of growth and tend to be vulnerable to FDI inflow reversals as well as workers' remittances although the prickly plummets in the global trade volume do not affect their performance.

6. Conclusions

This paper examines three potential mechanisms through which the global financial crisis affects the Asia-Pacific region. These include the collapsed export and import demands, FDI inflow reversals, and a substantial plunge in international remittances. An empirical exercise reveals that while the Asia-Pacific economies are immune to a drastic contraction of world trade, the FDI inflow reversals and the sweeping retrenchment in the foreign labour markets appear to be the key catalysts through which the global financial crisis propels them into the worst economic recession. These results suggest that the efforts to put in place the shield against the global economic downturn must weigh in on macroeconomic policy that essentially rebalances overdependence on FDI inflows and international remittances.

I develop further analysis by decomposing the economies into three sectors – agricultural, manufacturing and service sectors. The sectoral analysis pushes forward my base-line findings that the global financial crisis affects each economic sector in different ways. While the manufacturing and service sectors tend to be susceptible to the FDI inflow reversals and squeezing labour markets in the crisis epicentre, the agricultural

sectors stand in better stead to weather the global economic storm. The exceptional resilience of the agricultural sectors is perhaps attributable to the stronger dependence on domestic markets and less exposure to international capital markets.

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Appendix

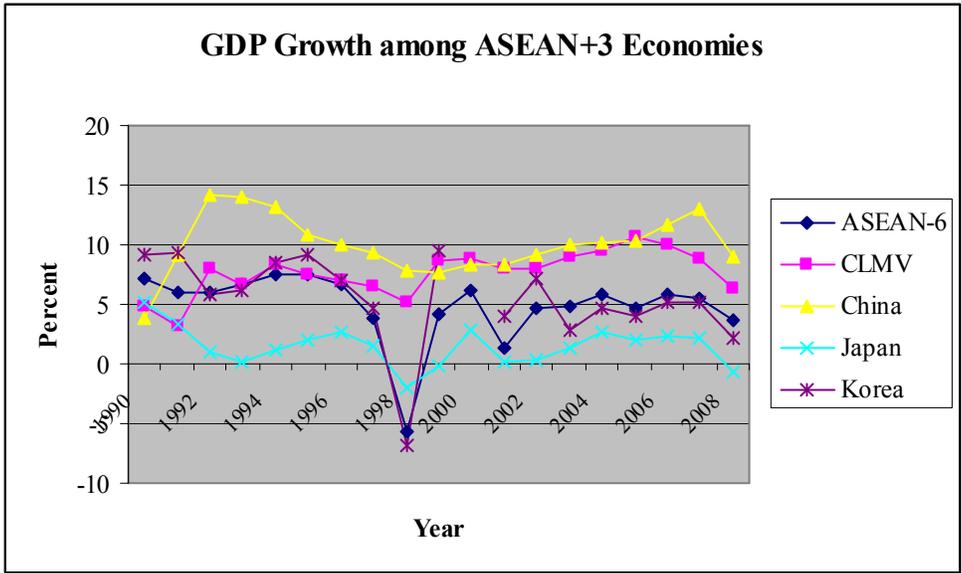
Table A1: Summary of Statistics, 1960-2008.

Variable	Obs.	Mean	S.D.	Min	Max
$GROWTH_{it}^{GDP}$	662	9.813	105.5	-27.10	2717.9
$GROWTH_{it}^A$	535	2.856	6.385	-23.49	43.96
$GROWTH_{it}^M$	493	12.33	104.8	-17.05	2328
$GROWTH_{it}^S$	501	10.74	105.2	-57.54	2351.3
$GFCF_{it}$	591	25.10	7.712	6.179	47.91
$TRADE_{it}$	613	76.26	75.0	.3008	456.7
FDI_{it}	431	3.154	4.320	-5.276	36.62
$REMIT_{it}$	351	1.363	2.316	.0117	13.73

Table A2: Correlation Matrix of Independent Variables.

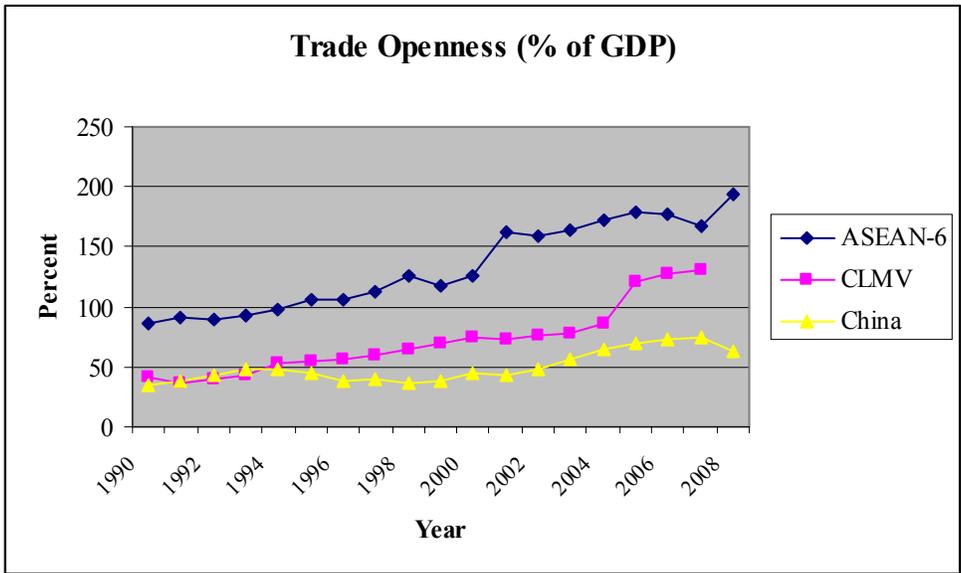
	$GFCF_{it}$	$TRADE_{it}$	FDI_{it}	$REMIT_{it}$
$GFCF_{it}$	1.000			
$TRADE_{it}$	-.0545	1.000		
FDI_{it}	-.0460	.7265	1.000	
$REMIT_{it}$	-.3006	.1372	.0065	1.000

Figure 1: Annual GDP Growth among ASEAN+3 Economies, 1990-2008.



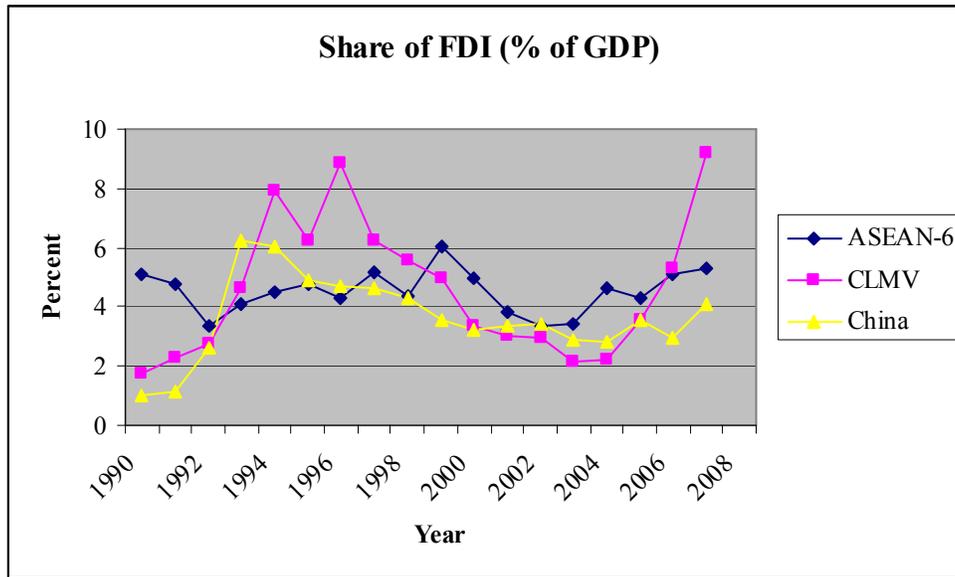
Source: World Development Indicators (WDI), World Bank.

Figure 2: Share of Exports and Imports in GDP in Selected Asian Economies, 1990-2008.



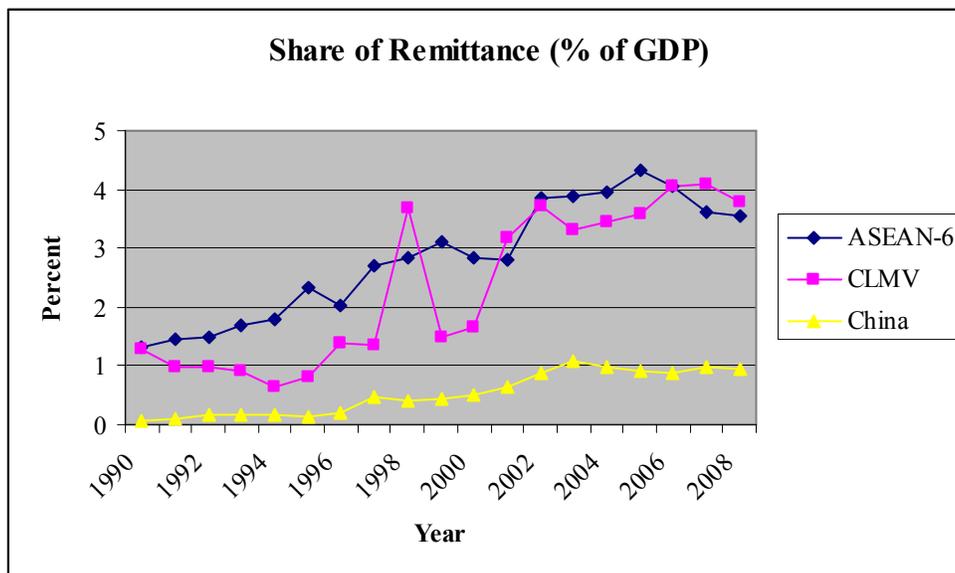
Source: World Development Indicators (WDI), World Bank.

Figure 3: Share of Net FDI Inflows in GDP in Selected Asian Economies, 1990-2008.



Source: World Development Indicators (WDI), World Bank.

Figure 4: Share of Worker Remittances in GDP in Selected Asian Economies, 1990-2008.



Source: World Development Indicators (WDI), World Bank.

Table 1: Panel Growth Regressions for Selected Asia-Pacific Countries with OLS, Fixed Effects and Random Effects.

<i>Dependent Variable: $GROWTH_{it}^{GDP}$</i>			
	OLS	Fixed Effects	Random Effects
$GFCF_{it}$	.2520 ^{***} (.0306)	.1777 ^{***} (.0359)	.1786 ^{***} (.0325)
$TRADE_{it}$	-.0008 (.0046)	-.0084 (.0078)	-.0087 (.0061)
FDI_{it}	.1650 ^{**} (.0740)	.2528 ^{***} (.0731)	.2463 ^{***} (.0728)
$REMIT_{it}$	.2017 ^{***} (.0557)	.4034 ^{***} (.1289)	.3785 ^{***} (.0936)
$CRISIS_{it}$	-4.971 ^{***} (1.347)	-5.284 ^{***} (1.308)	-5.252 ^{***} (1.275)
Constant	-1.785 [*] (.9308)	.3092 (1.185)	.4610 (1.426)
R-squared	.2536	.2152	.2189
F Test	18.47 ^{***}	13.70 ^{***}	----
Wald Chi-squared	----	----	65.82 ^{***}
No. of Obs.	320	320	320

Note: (1) Robust standard errors in parentheses; (2) *** statistically significant at 1 per cent level; (3) ** statistically significant at 5 per cent level; and (4) * statistically significant at 10 per cent level.

Table 2: Arellano-Bond Dynamic GMM Estimations for Selected Asia-Pacific Countries.

<i>Dependent Variable: $\Delta GROWTH_{it}^{GDP}$</i>	
	Arellano-Bond GMM
$\Delta GROWTH_{it-1}^{GDP}$	.2817 ^{***} (.0701)
$\Delta GFCF_{it}$	.0742 ^{***} (.0271)
$\Delta TRADE_{it}$	-.0050 (.0094)
ΔFDI_{it}	.2351 ^{***} (.0572)
$\Delta REMIT_{it}$	.3067 ^{***} (.0493)
$CRISIS_{it}$	-5.186 ^{***} (1.323)
Constant	-.0056 (.0199)
Wald Chi-squared	166.29
No. of Obs.	302

Note: (1) Robust standard errors in parentheses; and (2) *** statistically significant at 1 per cent level.

Table 3: Panel Growth Regressions of the Agricultural Sector for Selected Asia-Pacific Countries with OLS, Fixed Effects and Random Effects.

<i>Dependent Variable: GROWTH_{it}^A</i>			
	OLS	Fixed Effects	Random Effects
$GFCF_{it}$	-.0487 (.0487)	-.1151* (.0663)	-.0702 (.0524)
$TRADE_{it}$	-.0110 (.0087)	-.0169 (.0109)	-.0124 (.0095)
FDI_{it}	.0736 (.1673)	.0284 (.2022)	.0475 (.1752)
$REMIT_{it}$	.1304* (.0784)	.1998* (.1140)	.1619** (.0819)
$CRISIS_{it}$	-2.198** (.9158)	-2.104** (.9383)	-2.176** (.9015)
Constant	4.542*** (1.658)	6.772*** (1.875)	5.226*** (1.791)
R-squared	.0173	.0153	.0168
F Test	3.58***	3.18***	----
Wald Chi-squared	----	----	20.50***
No. of Obs.	305	305	305

Note: (1) Robust standard errors in parentheses; (2) *** statistically significant at 1 per cent level; (3) ** statistically significant at 5 per cent level; and (4) * statistically significant at 10 per cent level.

Table 4: Arellano-Bond Dynamic GMM Estimations of the Agricultural Sector for Selected Asia-Pacific Countries.

<i>Dependent Variable: ΔGROWTH_{it}^A</i>	
	Arellano-Bond GMM
$ΔGROWTH_{it-1}^A$	-.3959*** (.0630)
$ΔGFCF_{it}$	-.1664*** (.0483)
$ΔTRADE_{it}$	-.0078 (.0110)
$ΔFDI_{it}$	-.1231 (.2127)
$ΔREMIT_{it}$	.2851*** (.0780)
$CRISIS_{it}$	-1.225 (1.198)
Constant	-.0523 (.0383)
Wald Chi-squared	328.29
No. of Obs.	284

Note: (1) Robust standard errors in parentheses; and (2) *** statistically significant at 1 per cent level.

Table 5: Panel Growth Regressions of the Manufacturing Sector for Selected Asia-Pacific Countries with OLS, Fixed Effects and Random Effects.

<i>Dependent Variable: $GROWTH_{it}^M$</i>			
	OLS	Fixed Effects	Random Effects
$GFCF_{it}$	.2801*** (.0718)	.1377* (.0748)	.1498** (.0714)
$TRADE_{it}$	-.0083 (.0124)	-.0274* (.0162)	-.0311** (.0140)
FDI_{it}	.1086 (.2036)	.5259*** (.1698)	.4917*** (.1705)
$REMIT_{it}$	.0928 (.1212)	.2357 (.1973)	.3066* (.1624)
$CRISIS_{it}$	-5.419** (2.216)	-5.874*** (1.868)	-5.821*** (1.831)
Constant	.2503 (2.215)	4.315* (2.429)	4.0817 (3.332)
R-squared	.1071	.0671	.0679
F Test	4.43***	4.40***	----
Wald Chi-squared	----	----	21.75***
No. of Obs.	279	279	279

Note: (1) Robust standard errors in parentheses; (2) *** statistically significant at 1 per cent level; (3) ** statistically significant at 5 per cent level; and (4) * statistically significant at 10 per cent level.

Table 6: Arellano-Bond Dynamic GMM Estimations of the Manufacturing Sector for Selected Asia-Pacific Countries.

<i>Dependent Variable: $\Delta GROWTH_{it}^M$</i>	
	Arellano-Bond GMM
$\Delta GROWTH_{it-1}^M$	.1582*** (.0573)
$\Delta GFCF_{it}$	.0907 (.0706)
$\Delta TRADE_{it}$	.0009 (.0123)
ΔFDI_{it}	.4584*** (.1361)
$\Delta REMIT_{it}$	.3285* (.1717)
$CRISIS_{it}$	-6.039*** (2.006)
Constant	-.1183* (.0665)
Wald Chi-squared	147.87
No. of Obs.	258

Note: (1) Robust standard errors in parentheses; (2) *** statistically significant at 1 per cent level; and (3) * statistically significant at 10 per cent level.

Table 7: Panel Growth Regressions of the Service Sector for Selected Asia-Pacific Countries with OLS, Fixed Effects and Random Effects.

<i>Dependent Variable: $GROWTH_{it}^S$</i>			
	OLS	Fixed Effects	Random Effects
$GFCF_{it}$	.2338 ^{***} (.0359)	.2124 ^{***} (.0505)	.2040 ^{***} (.0428)
$TRADE_{it}$	-.0122 ^{**} (.0055)	-.0129 (.0129)	-.0135 [*] (.0074)
FDI_{it}	.3827 ^{***} (.1253)	.2804 ^{**} (.1219)	.2968 ^{**} (.1238)
$REMIT_{it}$	.2441 ^{***} (.0690)	.4597 ^{***} (.1359)	.4007 ^{***} (.0919)
$CRISIS_{it}$	-4.992 ^{***} (1.473)	-5.422 ^{***} (1.467)	-5.332 ^{***} (1.442)
Constant	-.1931 (1.149)	.4158 (1.640)	.6655 (1.712)
R-squared	.2103	.1868	.1930
F Test	12.88 ^{***}	8.95 ^{***}	----
Wald Chi-squared	----	----	50.29 ^{***}
No. of Obs.	276	276	276

Note: (1) Robust standard errors in parentheses; (2) *** statistically significant at 1 per cent level; (3) ** statistically significant at 5 per cent level; and (4) * statistically significant at 10 per cent level.

Table 8: Arellano-Bond Dynamic GMM Estimations of the Service Sector for Selected Asia-Pacific Countries.

<i>Dependent Variable: $\Delta GROWTH_{it}^S$</i>	
	Arellano-Bond GMM
$\Delta GROWTH_{it-1}^S$	.2041 ^{***} (.0774)
$\Delta GFCF_{it}$	.1287 ^{***} (.0286)
$\Delta TRADE_{it}$	-.0180 (.0143)
ΔFDI_{it}	.2071 [*] (.1221)
$\Delta REMIT_{it}$	.4516 ^{***} (.0678)
$CRISIS_{it}$	-5.066 ^{***} (1.508)
Constant	-.0158 (.0330)
Wald Chi-squared	606.42
No. of Obs.	257

Note: (1) Robust standard errors in parentheses; (2) *** statistically significant at 1 per cent level; and (3) * statistically significant at 10 per cent level.