



## **Do Business Cycles in the Home and Host Countries Affect Remittances?**

A CLOSER LOOK AT THE REMITTANCE INFLOWS TO THE PHILIPPINES DURING THE GLOBAL FINANCIAL CRISIS

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## List of Acronyms

ADF	Augmented Dickey Fuller
BLES	Bureau of Labour and Employment Statistics
BPO	Business Process Outsourcing
BSP	Bangko Sentral ng Pilipinas
CEE	Central and Eastern Europe
CFO	Commission on Filipino Overseas
CIS	Confederation of Independent States
CV	Coefficient Variation
DF	Dickey Fuller
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFC	Global Financial Crisis
HP	Howard Prescott
ODA	Official Development Assistance
ILO	International Labour Organization
IMF	International Monetary Fund
MPO	Marginal Productivity of Capital
NSCB	National Statistics Coordination Board
NEDA	National Economic Development Authority
NIE	Newly Industrialized Economies
PBS	Point Based System
SSA	Sub-Saharan Africa
TARP	Troubled Assets Relief Programme
TFR	Total Fertility Rate
TFP	Total Factor Productivity
UAE	United Arab Emirates
UK	United Kingdom
UN	United Nations
US	United States
WB	World Bank
WEO	World Economic Outlook



## **Abstract**

This paper examined the impact of the global financial crisis (2007 to 2009) on the level of remittance flows in the Philippines and find that remittances did not decrease, albeit growing at a slower pace at the aggregate level. This suggests that remittances during the crisis have been procyclical. The stock of migrants, nature of work (service sector), and the policy response (Canada) are some of the factors identified which have contributed in the resiliency of remittances during the crisis. Following that, I focused on the nine major countries to check per if remittances inflows from these countries decreased during the crisis. At the host country level, remittance appears to be countercyclical with all the host countries, except USA, Hongkong and Italy, as reflected by the decline in remittances during the recession in these countries. Next, the cyclical relationship of remittances and output in the home and host countries were measured from 1989 to 2012 using first-difference correlation and ECM model. The results of the first-difference correlation suggested a procyclical relationship of remittances and output of Saudi Arabia and Italy. On the other hand, the ECM results showed that remittances have long-run, positive relationships with Saudi Arabia and Canada. It is worthy to note that the level of output in the home country and in the other host countries do not have any impact on the level of remittances in the long-run. This suggests that remittances are stable sources of external financing even during periods of economic hardships.

## **Relevance to Development Studies**

The literature on the cyclicity of remittances with respect to the level of output in the home country and those of the host countries are inconclusive. This paper seeks to contribute to the discussion by embarking on a two-step inquiry: (1) the impact of the global financial crisis on the level of remittance flows (short- run) at the aggregate level and at per host country's level; and (2) association (correlation) and long-run relationship (cointegration) between remittances and output of the home country and of the host countries.

## **Keywords**

Remittances, domestic work, GDP, GFC

## Chapter 1 Introduction

During the past three decades, there has been a surge in national and international interest in remittances and their economic consequences, especially to developing countries (Aguinas 2006, Chami et al. 2008). In the microeconomic literature, most studies have highlighted their welfare benefits: poverty alleviation and easier access to education and health care. They also provided shocks against income risks and other calamities of foreign exchange earnings, covering for deficits in current account. In the macroeconomic perspective, remittances have often been cited as a major source of foreign exchange inflows. (Aguinas 2006; Chami et al 2008; Ratha 2003:164; Singer 2010). Moreover, recent research have implied the positive impacts of remittances on debt sustainability and public revenues (Abdih et al 2009; Chami et al. 2008) On the other hand, ill-effects associated with remittances are causing the exchange rate to increase leading to reduction of international competitiveness of domestic production (Dutch Disease), inflation, and non-contribution to growth, among others. It is also often pointed out in the literature that most of remittances are spent on consumption by the families of the migrants, rather than invested productively, but they can generate multiplier effects. Overall, the general tone of their economic benefit for developing counties has been positive (Abdih et al. 2010:3, Singer 2010; Aguinas 2006).

Remittances sent by migrants and overseas workers have experienced robust growth since the early 1970s, with only reported receipts of US\$6billion, which increased to US\$114 billion in 2003, and further grew to \$401 billion in 2012 (Chami et al 2008; World Bank 2012). Barajas et al. (2010:6) noted that remittances comprised about 5.30% of GDP for 134 countries for the period 2001-2010, higher than 4.50% for 1970-2007. Moreover, he also noted that remittances to developing countries dwarfed other external financial flows for the same period, with remittances about 20.3 times than Official Development Assistance (ODA), 18.5 times than capital flows, 2.7 times than private capital flows and about 40% of exports. By region, Barajas et al. (2010) observed that remittances are higher in developing Asia than Africa and the rest of the world. High-income countries are the main sources of remittances, with the United States having recorded US\$49 billion outflows, followed by Saudi Arabia (US\$26 billion) and Switzerland (US\$19.6 billion) in 2010. In terms of amount, China (US\$), the Philippines (US\$) are the biggest recipients of remittances, while in terms of share of Gross Domestic Product (GDP) (Migration and Remittance Factbook of 2011).

The increasing trend in remittances has been due to the consequences of increased globalization (Barajas et al. 2010:3; Wickramesekara 2011:82-83). The 'second wave of globalization' during the late 20<sup>th</sup> century was marked by high levels of capital mobility and international trade, yet international migration was constrained for unskilled labor. In contrast, the 21<sup>st</sup> century, while cross-border movement of people remains restricted due to complex immigration policies, the international mobility of workers with high level of human and financial capital increased. This is further reinforced by the demographic transition that had taken place in North America, Europe and Asian destination countries of migrants, where ageing of the population resulted to shortages in labor (Wickramesekara 2011:83).

Aside from the magnitude of remittances compared to other resource flows to recipient economies, there are other distinct features of remittances from the latter (Abdih 2009; Chami et al. 2008, Singer 2010:307). The literature cites remittances as “unrequited”: they do not end up as claims on assets, debt service obligations or other contractual obligations. Remittances, unlike portfolio flows, cannot be withdrawn or repatriated from a country, ex-post. Remittances are also often mentioned as less volatile and stable, hence a reliable source of funding for developing countries (Sayan 2006:3).

Remittances in the Philippines account for 15% of the GDP since 2009, and the analysis using coefficient of variation for the period 1996 to 2012 shows that remittances are less volatile than foreign direct investment, portfolio flows and external borrowings. Bayangos and Jansen (2009) found that remittances are procyclical with the level of output in the Philippines and some of its home countries- United States, Hongkong , and Japan, while remittances are observed to be countercyclical with the level of output of Italy, United Kingdom and Canada from 1994 to 2007. This paper seeks to investigate if such pattern holds true given the effects of the Global Financial Crisis (GFC) on the level of remittances. The time period covered by the study is from 1989 to 2012, using nominal terms of remittances and GDP of the Philippines and its host countries.

## 1.1 Research Questions

This research paper intends to answer the following questions:

- What has been the impact of the Global Financial Crisis to remittance inflows to the Philippines?
- What are the factors that have lead to the increase/decrease of remittances during the GFC?
- What is the cyclical nature of remittances with respect to output of the Philippines and its major host countries? Do changes in business cycles in the home and host countries affect remittance flows?

## 1.2 Limitations of the Paper

For purposes of the inquiry, this paper utilized the quarterly remittances and quarterly Gross Domestic Product of the Philippines and those of the nine host countries, namely; United States, Saudi Arabia, Canada, Japan, United Kindgom, Italy, Singapore, and Germany. It covers the 23 year period, from 1989 up to 2012. The data were obtained from the International Finance Statistics of the International Monetary Fund. These remittances do not cover transfer and flows from informal sources. It could have been more desirable if they are in constant US\$ terms to control effects of inflation, but they are not available in the International Monetary Fund International Finance Statistics website for all countries. This could explain the difference in the correlation findings of this study with the results of that of Bayangos and Jansen’s (2009).

The data of real quarterly Gross Domestic Product for all nine countries under study are not available. And because of this limitation the research was constrained to utilize nominal terms of the remittances and Gross Domestic Product of the Philippines and the nine host countries. This methodology is a big departure from the approach utilized by Bayangos and Jansen (2009). De-

spite this difference, this inquiry maintains that it will still provide a valuable insight in understanding the cyclical properties of remittances with respect to the level of output of both home country and host countries from the period of 1989 to 2012. Despite these limitations, this research is significant since it covers the time period from 1989 to 2012 and was able to include the period of the global financial crisis.

### **1.3 Structure of the Paper**

This research paper is divided into six Chapters, starting with the Introduction which briefly states the problem statement at hand and identifies the questions which this research endeavor attempts to shed light on. Chapter 2 will lay down the conceptual framework and a comprehensive review of literature about global financial crisis, and its impact on developing countries such as the Philippines and the remittance channels. This Chapter will look into the unemployment situation in the world, as well as relevant migration policies of both destination and home countries and how those affect the stability and cyclicity of remittances. The methodology and different kinds of data employed in this research are the focus of Chapter 3. Chapters 4 and 5 will provide an in depth discussion on the context of migration in the Philippines. Specifically on Chapter 4, different variables such as growth trends, demographic, unemployment, poverty and income inequalities will be tackled and analyzed in order to support a discussion on the different factors, both national and global levels, which contributed to the rise of international migration as a key feature of the Philippine economy. Chapter 5 presents the findings and discusses the impact of global financial crisis on the remittance flows of the Philippines. Chapter 6 wraps up and concludes this research paper with some final thoughts and reflections.

## **Chapter 2      Conceptual Framework and Review of Related Literature**

### **2.1 Globalization and Business Synchronization**

Globalization, which pertains to ‘rising trade and financial integration of world economy’, has reached new heights in the recent decades. Since the 1960s, world trade grew at a faster pace than world output. Furthermore, there has been a tremendous increase in cross capital flows, not only between industrial economies but also between industrial and emerging markets (Kose et al. 2003:1, Kose et al. 2007:7).

Business cycle is the ‘the behaviour of many national economies exhibiting an alternating phase of upward and downward movements which may vary in length (duration) and amplitude (intensity) and is more often asymmetric or not proportional.’ ‘Downward movements’ in the business cycle refers to period of stagnation/contraction in the economy, while ‘upward movements’ signifies periods of expansions/booms in the economy. Period of ‘downward movements’ in business cycle are generally accompanied by symptoms of ‘economic crisis: ‘business slowdown and bankruptcies, bank runs, devaluation, and spread of social unrest, unemployment and poverty’. Due to the huge costs associated with economic contraction, analysis and monitoring of business cycle is vital for government and private organizations alike. In this way, they will be informed promptly of any slowdown in economic activities and they can take appropriate actions to offset further contractions in the economy (Bascos-Deveza 2006:7).

The neoclassical theory gives no definite outcome of the impact of ‘increased trade and financial linkages’ on the co-movement of business cycles between/among countries. In the case of trade linkages, the ‘demand and supply spillovers’ can generate correlations of business cycles among countries. This is uncertain, as we have to consider the ‘industry-specific shocks and inter-industry specialization.’ In the case of financial liberalization, it can be hypothesized that there can be greater co-movement of business cycles as they produce ‘demand side effects,’ e.g. collapse in single stock market where consumers from different countries have portions of investments could result to decrease in demand in goods and investments in different countries. In addition, financial channels can transmit ‘contagion effects’ that could spill over macroeconomic volatility to other countries (Kose et al. 2003:1-2).

### **2.2 Global Financial Crisis and Its Impact on Developing Countries and Remittance Channel**

The recent global financial crisis (GFC) which originated in the United States, has been the deepest recession since the Great Depression. The boom and bust in the housing market which led to the crash in the financial market in the US, has spilled over to real and financial sectors of the global economy. There are two views on the cause of the crisis. One view is that it was caused by the loose monetary policy implemented by the Federal Reserve in 2002 to 2004

when it cut low rates to avoid recession of the technology stock bubble and the September 2001 bombings. On the other hand, others point out that the seeds of the crisis were the global factors- ‘the global savings glut’ which has caused interest rates to decrease. This has raised question in assessing the benefits and costs of financial globalization, as well as the role of independent monetary and fiscal policies, and the state’s role in regulating the financial market (Allen and Carletti 2010:3,5-8; Almunia et al 2010:222; Sen 2011:399).

Almunia et al. (2010:224-229) made a comparison of the Great Depression and GFC in terms of decline in global industrial output, composition of trade and changes in global equity markets. Both episodes had US as the epicentre of the crisis, yet their effects had been heterogenous as countries had varying level of integration in the global economy and they responded with different monetary and fiscal policies. In terms of decline in output, the earlier episode had slower recovery as most of industrial production is located in North America and Europe, where output and employment were severely affected. However, the decline in volume of trade was larger during the GFC, as the share of manufactured goods became larger relative to primary goods and services. Like in the Great Depression, terms of trade worsened, which led a decline in income for commodity producing countries, and global equity markets registered a greater decline in the first year of the aftermath of the GFC. Moreover, based on growth estimates in 2009, they explained that coefficient of variation of growth rates across countries was almost twice in the Great Depression, and this has been due to the rising trade and financial globalization that has rapidly taken place in the world.

While developing countries were also adversely affected by the global economy through trade (declining terms of trade) and financial channels (lower foreign direct investment (FDI), portfolio, aid flows), they have been more integrated in the recent decades through the remittance channel because of increased labor mobility and migration. The remittance channel has primarily transmitted ‘global shocks’ to the developing countries (Barajas et al. 2012:3).

Awad (2009) explained that the economic condition and employment situation in the host countries, changes in the demand for migrant labor and possible return to countries of origin, and policies that host countries have put in place to deal with the crisis’ are the factors that had impact on emigrants and temporary overseas workers, and they reinforce each other. This will have repercussions on the volume of remittances

### ***2.2.1 Economic Performance***

Note that the GFC has produced varied response in economic activities across and within regions due to trade and financial channels (Sen 2011:404). As shown in Table 2-1, the world output contracted by 0.7% in 2009 year-on-year from a 2.8% growth in 2008. In 2009, volume of world trade contracted by 11.2% from 2.4% growth in 2008. The decline in demand in advanced countries was reflected in their decline of imports in 2009 (-13.1%), which also explains the drop in exports of emerging countries by -8.1% in 2009 (Ibid, IMF 2013:163). This fall in aggregate demand was also reflected in the fall in level of investment. FDI flows declined in 2008, not only in developed economies, but also significantly in other regions, particularly in Confederation of Independent States (CIS) (200%), Central and Eastern Europe (CEE) by more than 50%, and Developing Asia by more than 25%. In terms of portfolio flows, there has

been a surge in developing countries in 2009, except in CIS and Sub-Saharan Africa (SSA) (ILO 2011:57, IMF 2013:170). This has been a result of weak financial markets, in addition to monetary easing in US and Japan which kept interest rates at very low levels, impeded credit growth in advanced countries, resulting to excessive liquidity in financial markets. This has led to an increase in investor appetite for developing and emerging markets, especially in Asia and Latin America (UN 2011:73-74).

In terms of real output across regions, the advanced countries' real output dropped by 3.7%y-o-y in 2009. Within the advanced countries, the rate of decline of output was larger in the European Union (EU) than the United States in 2009. Both advanced and emerging countries in Europe registered negative growth rates in 2009. CEE's economic activity sharply dropped to -3.6% in 2009 from a positive 3.1% growth in 2008. This has been due to the constraints in external financing halted the expansion of output. The reversal of booms in the construction and credit, fiscal and current account imbalances are some of the causes for the contraction of output in advanced countries in Europe (IMF 2010:53). CIS saw the steepest decline in real output in 2009 (-6.4%) from a growth rate of 5.5% in 2007, and Sen (2011:404) attributed this to the large drop in the region's term of trade (21.1%). This has also been the case for Middle East and North Africa (MENA), oil-producing region like the CIS, which still posted a low, yet positive growth of 2.9% in 2009, despite the drop in the region's term of trade by 18.1% (Ibid). While the GFC dampened demand for primary commodities, the sharp decline in their international prices in the middle of 2008 was exacerbated by their 'excessive financialization' that started in 2005. This has been a reversal from a strong and sustained growth in primary commodity prices from 2002 to 2008, especially from 2007 to 2008 as financial investors stocked their excessive liquidity in commodity future exchange that disrupted the traditional forces of supply and demand (Te Velde et al. 2010; UNCTAD 2009).

**Table 2-1. % Change in Real GDP, Different Regions and Selected Countries, 2007-2010**

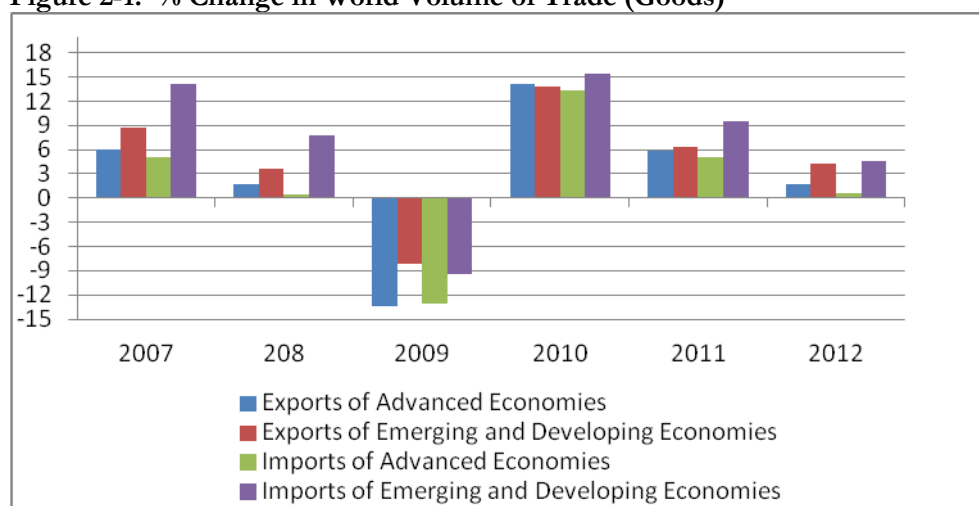
	2007	2008	2009	2010
<b>World GDP</b>	5.4	2.8	-0.7	5.1
Advanced Countries	2.8	0.1	-3.7	3.1
USA	1.9	-0.3	-3.5	3
European Union	3	0.4	-4.3	31.8
Other Advanced economies	4	1.1	-2.3	4.3
Central and Eastern Europe	5.5	3.1	-3.6	4.5
Commonwealth of Independent States	8.9	5.3	-6.4	4.6
Developing Asia	11.5	7.7	7.2	9.5
China	13	9.6	9.1	
India	9.4	6.4	5.7	
Latin America	5.8	4.3	-1.7	6.1
Middle East and North Africa	6.7	4.6	2.6	4.4
Sub-Saharan Africa	7.1	5.6	2.8	5.4

*Source: IMF 2013*

Latin America's output contracted by 1.7% in 2009, after slowing down to 4.3% in 2008 from 5.8% in 2007. Mexico experienced the biggest contraction in real output, due to its close economic ties with the US economy (IMF October 2009).

Export-oriented countries like Japan, China, Newly Industrialized Countries (NIE), and countries in Developing Asia were affected in the lower demand for their consumer durables in advanced countries. However, note that economic activity decelerated but remained robust in China, as well as India, as their export sectors account small shares in their respective economies compared to other Asian countries (Felipe 2010:5). Lastly, economic growth in Sub-Saharan Africa slowed down to 2.8% in 2009 from 5.6% in 2010. While the region was less integrated in the global financial market, Te Velde et al. (2010:5-6) explained that several countries (Democratic Republic of Congo, Uganda, and Sudan) saw significant drop in FDI flows.

**Figure 2-1. % Change in World Volume of Trade (Goods)**



Source: IMF 2011

### 2.2.2 Employment

Note that there is also disparity in terms of impact of GFC in employment across regions (Table 2-2). The aggregate unemployment rate increased 0.6 percentage points from 2008 to 2009 as reflected by the decline in output and level of investment across regions. As the CIS, CEE and advanced countries registered the largest decline in output in 2009, this is mirrored in the big jump in unemployment in these regions. ILO (2011) reported that the aftermath of the crisis left manufacturing and construction severely affected, explaining the drop in employment in the industry sector of 9.5 million between 2007 and 2009 in advanced economies. CIS, CEE, Latin America and the Caribbean were also noted to have significant contractions in the industry sector. The report also stated that since SSA was not affected by the crisis, unemployment almost remained constant. The Middle East entered the crisis with high unemployment rate, yet it barely increased as reflected by the region's sustained high growth in 2009.



**Table 2-2. Unemployment Rate, World And Regions, 2005-2011**

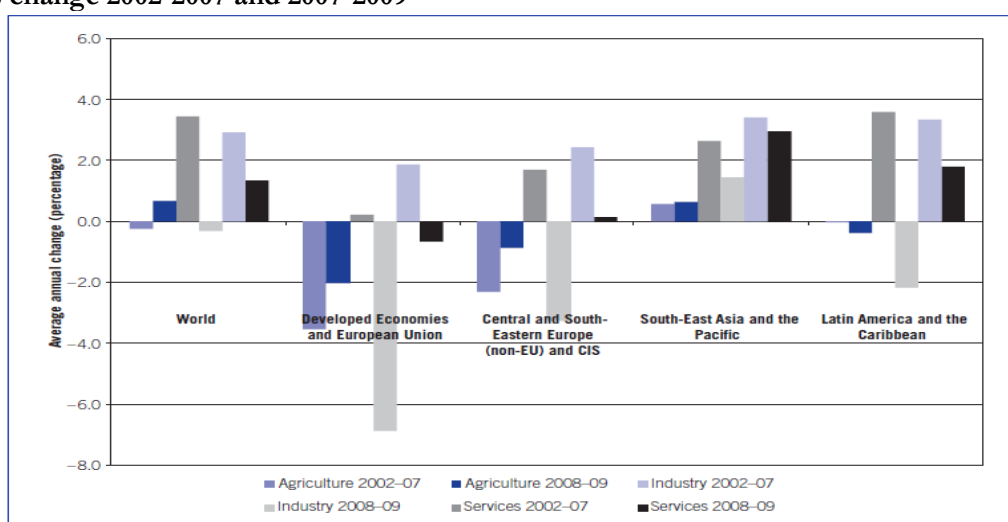
Both Sexes	2005	2006	2007	2008	2009	2010	2011
World	6.2	5.8	5.4	5.6	6.2	6.1	5.9
Developed Economies and EU	6.9	6.3	5.8	6.1	8.4	8.8	8.4
CEE and CIS	9.2	9.1	8.3	8.3	10.1	9.4	8.7
East Asia	4.1	3.9	3.8	4.3	4.4	4.2	4.3
Southeast Asia and the Pacific	6.4	6.1	5.5	5.3	5.2	4.7	4.4
Latin America and Caribbean	7.9	7.6	7.0	6.6	7.8	6.8	6.5
Middle East	11.2	10.9	10.3	10.5	10.7	11.2	11.1
North Africa	11.5	10.5	9.6	9.1	9.1	8.9	10.0

Source: 2005-2006: ILO 2012

2007-2012: ILO 2013

In terms of employment by sector, the report also noted that there has been an increasing trend in the services sector across all regions. It expanded its employment share from 39.1% in 1999 to 42% in 2007 to 43.2% in 2009. In the case of agriculture sector, its share in total employment across the regions declined except in SSA, but the number of people hired in the sector increased, on average from 1999 to 2009 (Figure 2-2). Furthermore, Awad (2009:5) stated that employment in hotels and restaurants (hospitality) were also affected, while employment in education, health care and domestic work grew.

**Figure 2-2. Employment by sector, World and selected regions, average annual % change 2002-2007 and 2007-2009**



Source: ILO 2011

### ***2.2.3 Policies of Destination and Home Countries***

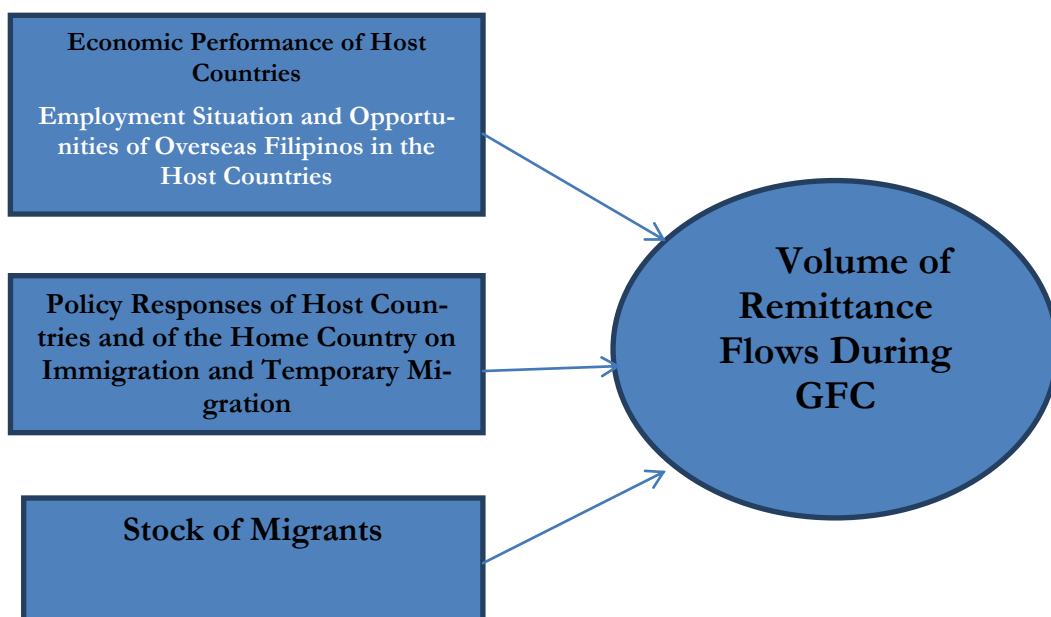
Another factor that could affect the migrants' employment situation and opportunities in the destination countries are the policies that the latter put in place in response to the challenges they faced: slower economic growth, lower labor demand, and high unemployment that their domestic workers faced during the crisis (Awad 2009:45, Fix et al. 2009:56).

Note that there had also been a varied policy response among the topmost destination countries in their immigration laws and employment/hiring of existing and prospective migrant workers. In the United States, the government placed restrictive measures in entry of foreign high skilled temporary workers. In particular, Section 1161 of American Recovery and Reinvestment Act of 2009 stipulated that financial institutions that received bail-outs from the government, through the Troubled Assets Relief Programme (TARP) should prioritize US citizens over highly skilled migrants. It is observed that the number of temporary work permits (H1B visas) filed by companies/employers dropped from 163,000 applications in 2008 to 45,000 in 2009, as a result of the recession, and the government restriction. On the other hand, the entry of permanent immigrants to the United States has been fairly stable in the US as they are mostly family-based reunification, and the petitioners have to wait for a specified time period to bring their family members to the United States (Fix et al. 2009: 26,69; Awad 2009:49).

In Canada, the government 'went against the tide'. Amidst the rising unemployment and negative economic outlook, the government decided to maintain its permanent immigration levels of 250,000 new permanent residents in 2009. Likewise, the Canadian government did not limit entry of temporary workers, resulting to a 26% increase in stock of temporary workers in 2008 (Fix et al. 2009: 27; 63 - 64).

In the United Kingdom, the government curbed the entry of non-EU skilled workers by modifying the Point-Based-System (PBS) in hiring them. For tier 1 skilled workers, they had to pass tougher labor market tests, while tier 2 skilled applicants must be paid higher salary and must have Master's Degree as new minimum educational requirement. Moreover, the government also postponed the hiring of low-skilled temporary migrant workers. Meanwhile, as Italy faced serious economic hardships, the government limited entry of foreign migrants, and proposed the 'restriction of possibilities for economic and social integration of permanent migrant workers'. Moreover, proposals were made in stepping up measures against irregular migration, and limiting the possibilities of 'family reunification', and increasing resident permit fees for regular migrant workers (Awad 2009:47-48).

Lastly, Spain, Japan and Czech Republic are some of the countries that adopted 'pay-to-go schemes' in encouraging unemployed migrants and temporary workers to go back to their countries of origin, by providing 'paid one-way ticket home, and a lump sum payment for the migrants and/or their families' (Fix et al. 2009: 64-69).



**Figure 2-1. Factors that Affected Level of Remittances During the GFC**

### **2.3 Stability of Remittances**

Ratha (2003:163) noted that as remittances are less volatile and more stable, they are a stable source of external financing for developing countries. Several studies have already confirmed this finding. The study by Buch and Kuchulenz (2010) using a panel of 87 developing countries found that remittances are less volatile than private and official flows.

At the country level, Lueth and Ruiz-Arranz (2007:5) found that remittances inflows to Turkey are less volatile than Official Development Assistance and private flows. Bayangos and Jansen (2009) using coefficient of variation, found that remittances are less volatile than Foreign Direct Investment, external borrowings and portfolio flows in the Philippines from 2004 to 2012.

### **2.4 Driving Forces and Cyclicity of Remittances**

While capital flows have ‘push and pull’ factors to explain their movements (Bayangos 2009:6), there is no current ‘universally accepted framework’ that can explain remittance flows determination as scholars find it hard to differentiate theoretically and empirically among several theories explaining what factors drive remittance flows in the future. Chami et al. (2008:21) explains there are at least 2 reasons why it is important to understand the motivation of the migrant worker behind sending remittances in analyzing their economic impacts to the receiving country. First, the amount of remittances and the timing of sending them to the family members in the receiving country, as determined by the migrant workers’ motivation in remitting said funds, both affect the magnitude of the remittances’ economic impact in the recipient coun-

tries. Second, the intended use of the remittances determines how they will be spent, which also affects their economic impact on the workers' home countries.

The literature on remittances refers to family/family ties as the main driving force, with altruism as the primary reason (Bougha-Hagbe 2004; Chami et al. 2008:22; Bayangos 2009:7 and Singer 2010:310). In the case of pure altruism, the migrant worker derives his/her utility from the utility of recipient family or for their consumption, which is largely dependent on remittances received (Bayangos 2009:7; Chami et al. 2008). Moreover, remittance transfers could also be caused by self-interest. For instance, Bougha-Hagbe's (2004:15) model of an 'altruistic migrant worker with some degree of attachment' is an example of self-interest motive. Here the migrant worker divides income among 'consumption of family back home, consumption in the host country, and acquisition of financial and non-financial assets in the country of origin'. In this case, the 'degree of attachment to the home country' which translates to 'willingness to maintain ties in the home country through a non-financial asset such as the real estate' sheds light on migrant workers' purchase of houses and other real estate properties in their countries of origin.

The study by Yang (2007 as cited in Bayangos and Jansen 2009) and Amuedo-Dorantes and Pozo (2006 as cited in Chami et al. 2008:23) model the family as insurance provider to its members. Chami et al (2008:23) introduced the notion 'merit goods' as what the migrant worker purchase from the recipient/family. Moreover, they also include of 'action that the recipient takes that directly enhances the recipients' income and welfare without necessarily providing services or goods to other family including the remitter.' They noted that since it pure altruism can coexist with other motivations that revolve around family ties, they can be considered as 'compensatory in nature' (Ibid).

In this case, remittances exhibit the role of capital flows in theory: 'smoothing short-term income disturbances, diversification, finance high return investment opportunities in low capital/labor ratio countries and institutions in the recipient country' (Frankel 2011:2) In this case, remittances are countercyclical-they increase during periods of economic hardships in the home country. To sum up, remittances which are compensatory in nature should be negatively correlated with the output of the home country.

On the other hand, another reason behind remittance transfers is investment motive which is 'opportunistic in nature'. In this case, remittances behave like capital flows in the real world and can be studied as another type of capital flows influenced by 'pull and push factors' in both host and home countries. They respond positively to interest rate differentials, exchange rates and other positive investment indicators in either of the countries. Furthermore, these remittances that are profit-driven are complex in nature. If the migrant worker sees himself working for a short time abroad, then he might send all his savings back home. If he also sees himself working for a long period in the host country and is aware of the positive economic developments in his country, he will take advantage of these opportunities and send more money home (Chami et al. 2008: 25; Bayangos and Jansen 2009:7). In this case, remittances are negatively correlated with the home country's output. In other words, remittance inflows increase during periods of economic booms in the home country.

It is also possible that remittances are acyclical with respect to home country's output. For instance, Poirere (1997 as cited in Chami et al. 2008:23) models remittances as loan repayments of emigrants to family who financed their migration is one reason.

Findings about the correlation of remittances with the home country's output are mixed. Bougha-Hagbe (2004) utilized a Vector Error Correction (VEC) model and found that remittances are countercyclical with the output of Morocco. Lueth and Ruiz-Arranz (2007) employed the same technique and observed that remittances are procyclical with real GDP of Sri Lanka and other macroeconomic variables. Bayangos and Jansen (2009) employed correlation between cyclical components of remittances and GDP of the Philippines and found a strong procyclical relationship.

Moreover, several studies have also shown that macroeconomic determinants in the host countries can affect remittances. Sayan (2006) found that at the aggregate level, remittances are countercyclical with the aggregate output of the host countries. Bayangos and Jansen (2009) observed that remittances are procyclical with US, while Vargas-Silva and Huang (2005 as cited by Roache and Gradzka 2007) observed that remittances are more sensitive to changes in macroeconomic conditions of the host country than the macroeconomic conditions in the home country. On the other hand, Roache and Gradzka (2007) observed that remittance inflows to Latin America and Caribbean from 1990 to 2007 do not respond to changes in the fluctuations in the business cycle.

## **Chapter 3      Data and Methodology**

### **3.1 On the Impact of the Global Financial Crisis on the Volume of Remittances**

Volume of annual remittances flows at the aggregate level and at a per country level (host country) were assessed to check if remittances flows increased or decreased during the recession.

Growth rates of host countries and their unemployment rates were obtained from International Monetary Fund (IMF) World Economic Outlook (WEO) website. Given the dearth of information on the employment situation and opportunities of Filipino migrants and overseas workers during the recession in the host economies (2007-2009), 3 factors were analysed to understand why the volume of remittances at the aggregate and country levels increased or decreased: stock of migrants, change in the demand for overseas Filipino labor from 1994 to 2010, and the policy responses of the host countries and those of the Philippine government during the crisis. The volume of stock of migrants was sourced from the Commission on Overseas Filipino (CFO) website. Other information was drawn from reports from agencies and academic research.

### **3.2 On the Stability and Cyclicity of Remittances**

Remittances include transfers by both emigrants and overseas workers. Given that the quarterly data for remittance inflows to the Philippines are only available in the Bangko Sentral ng Pilipinas (BSP) database after 1989, I chose the time period 1989Q1 to 2012Q4 for the study. It could have been more desirable if remittances and the countries' GDP can be expressed in constant US\$ terms, but only several countries have available real output data for the same period.

Nominal quarterly Gross Domestic Product of the Philippines and its major host countries- United States, Canada, Saudi Arabia, United Kingdom, Hongkong and Italy expressed in their national currency terms were obtained from the IMF International Financial Statistics Website. The countries' average quarterly exchange rate (national currency per US dollar) were also sourced from International Monetary Fund International Financial Statistics and were used to scale the countries' GDP to US dollars. Initially, UAE and Singapore were identified as 2 of the major sources of remittances, but data for UAE was not available, and Singapore had few observations (2003 to 2012).

#### ***3.2.1 Stability of Remittances***

Bayangos and Jansen (2009) previously employed coefficient of variation as a method of analysing volatility of remittances relative to other in the Philippines from 1996 to 2007. Same technique will be used in evaluating stability of remittance inflows from 1996 to 2012.

Coefficient of variation is computed as:

$$CV = (\text{Standard deviation}/\text{mean}) * 100$$

### ***3.2.2 Cyclicalilty of Remittances***

In this study, 2 data sets were used. One is untrended data, and the other is trended data (cyclical components) using HP filter. The remittances and GDP of the Philippines and its major host countries were not converted to their log-level form as they were found to be non-stationary.

Economies demonstrate varied business cycles over time, which vary in duration and amplitude. A business cycle can ‘vary from 1 to 12 years, and comprise boom and a recession.’ It is therefore important to identify the cyclical component of a macroeconomic series by the use of a filtering technique (Deveza 2006:7; Bayangos and Jansen 2009:16)

Howard-Prescott (HP) filter is the most common filtering technique in the business cycle literature. It segregates a time series into cyclical and growth components:  $y(t) = g(t) + c(t)$  where  $y(t)$  is the natural logarithm of the series,  $g(t)$  as the growth component, and  $c(t)$  is the cyclical component (Cogley and Nason 1995:256). This technique was used to estimate cyclical components of the nominal remittances and output of the home and host countries.

#### **Correlation**

Cross correlation was employed to check the degree of association between untrended and cyclical components of remittances and of Philippine GDP and output of the major host countries, up to a lag of 3 quarters. The correlation coefficients were very strong (almost equal to 1) which suggested a very strong procyclical relationship between remittances and the Philippine output and between remittances and the major host economies and this could be spurious correlations.

Following Roache and Gradzka (2007:6-7), untrended remittances and output of the aforesaid countries were ‘first-differenced’ before the contemporaneous and lagged cross correlations were estimated. This procedure yielded different results and lower correlation coefficients. The results are given in Chapter 5.

#### **Bivariate Enger-Granger Analysis**

In order to check if there exist long-run relationships between aggregate remittance flows and level of output in the Philippines and GDP of host countries, Bivariate Enger-Granger analysis was employed.

Macroeconomic time-series data is not always stationary and this might lead to a spurious regression (Guijarati 2004). First, I checked if the time series of the 2 sets of variables- untrended and trended remittances and output of the Philippines and those of the host countries were stationary or non-stationary through Augmented Dickey Fuller (ADF) and correlogram first. Then, I checked for the presence of a unit root through the Dickey Fuller (DF) and ADF test. I found that all the time series are non-stationary and are of I(1) process.

Next, I performed a total of 16 cointegration regression, with remittance as the dependent variable and nominal Gross Domestic Product of the home and host countries as independent variables. Here, the residuals of the cointe-

grating regression were checked for the presence of unit roots. They are first plotted to visually check for the presence of unit roots. They were subjected to ADF and DF tests using three model specifications: (1) pure random walk, (2) random walk with drift, and (3) random walk with drift and deterministic trend, from no (0) lag to 4 lags. Annexes 12 to 19 show the results of these tests. Out of the 16 cointegration tests, only the residuals of remittances and GDP of Saudi Arabia (untrended) and those of remittances and Gross Domestic Product of Canada (untrended and trended) were found to be stationary. In particular, residuals of untrended and cyclical components of remittances and Gross Domestic Product of Canada for both pure random walk and random walk with drift models are both found stationary from 0 to 4 lags. In the case of remittances and untrended Gross Domestic Product of Saudi Arabia, cointegrating residuals with pure random walk model and drift are found to be non-stationary for all numbers of lags.

Lastly, I estimated the long-run/equilibrium relationship that exists between the aforesaid series as Error Correction Models through the two-step Engel-Granger method.

First, the cointegrating regression is given by the following equation:

$$Y = b_0 + b_1X + e$$

Where: X= dependent variable

Y= independent variable

b1= long-run impact on changes of Y on long-run changes in X

Then, the estimated ECM model is given by the following equation (Guijarati 2004:84, Mehboob 2012:50)::

$$\Delta Y = \gamma + \delta \Delta X + \varphi X(t-1) + \varepsilon$$

Where:

$\delta$  = short run changes in independent variables that can have positive or negative impact in short run changes in the dependent variable (remittances)

$\Delta$  = first-difference operator

$\varphi X(t-1)$  = 'speed of adjustment', where 'dependent variable adjust to changes in the independent variable at the same period



## Chapter 4 The Philippines as a Major Country of Origin of International Migrants and Temporary Workers

This chapter will tackle the confluence of economic, social and institutional factors that paved the way for the Philippines to be one of the top sources of not only labor, but of permanent immigrants around the world.

### 4.1 Growth Trends

In terms of economic development, the Philippines grew at a slower pace compared with its Southeast Asian peers which experienced impressive economic performance from 1970 until 2000. In the 1950s and 1960s, Usui (2011:1) noted that the Philippines was an ‘early leader in a relatively advanced manufacturing and sector and well-developed human capital’. From 1970 to 1980, its growth was at par with its neighbors; albeit 1.5 lower than their average. Both the country’s real Gross Domestic Product and real per capita Gross Domestic Product expanded during this decade, with the former reaching its peak of more than 8% in 1974 and 1977 as a result of the shift to an export economy. However, the divergence in growth started in 1980 when the Philippine economy only grew by 1%, in contrast with the 6.4% aggregate average growth of its neighbors. During this period, Japan, Hongkong, Taiwan and Singapore experienced rapid growth as a result of their successful export-driven economies, dubbed as the ‘Asian Miracle’ (Bayangos 1997:18-19; Country Migration Report 2013:23-25; Llanto 2012:3).

**Table 4-1. Average GDP growth in Southeast Asia, 1970-2012 (Annual percentage change)**

Country	1970-1980	1980-1990	1990-2000	2001-2012
Indonesia	7.6	6.1	4	5.4
Malaysia	7.8	5.3	4.4	4.7
Philippines	6.3	1	4.2	4.9
Singapore	8.5	6.6	2.8	5.3
Thailand	7.2	7.6	5.1	4.2

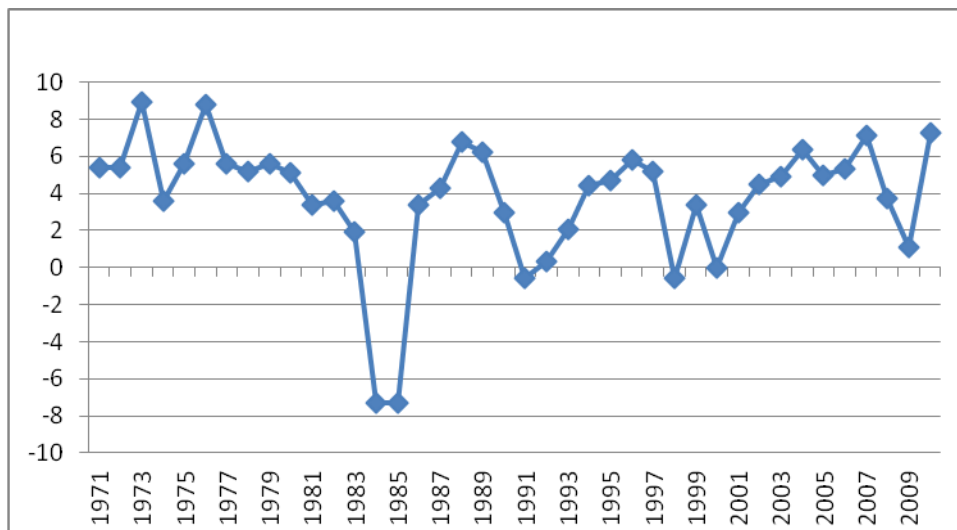
*Source: 1970-2000 : Bayangos 2007:19*

*2001-2012: WEO Database 2012 as cited by Barajas et al.*

Three explanations have been provided for the unimpressive economic growth picture of the country. First is the series of ‘boom and bust cycles’ that characterized the country attributed to the economic, political environmental shocks during the past 40 years. The ‘boom and bust cycle’ (1970-1974) reflected the success of the export sector, resulting to increased foreign earnings and expansion of output. However, things turned around during the 1980s, when the country fell into a deep economic recession. Real output contracted sharply by about 7% during 1984 and 1985, and real per capita Gross Domestic Prod-

uct dropped by 9.5% during the same period as a result of economic and political shocks. The global interest hikes during the early 1980s aggravated the debt and balance payment crisis from 1983 to 1985. When Ferdinand Marcos proclaimed in 1972, political unrest propagated in the country despite its upliftment in 1981, when Benigno Aquino was assassinated and deposed Marcos in 1986. However, the economic recovery was short-lived during Corazon Aquino's administration due to the following shocks: the coup attempt in 1989, major earthquake in 1990, the Mt Pinatubo eruption in 1991, and oil price shocks due to the Gulf War. In 1991, real Gross Domestic Product registered at low level of -0.6%. During 1994 growth picked up until 1997 as a result of policy and institutional reforms that were put in place starting in the late 1980s. However, real output contracted again in 1998 as a result of the El Nino drought and the Asian Financial crisis. The boom and bust cycles continued in the 2000s, with the disruption in growth in 2009 as a result of the GFC. Overall, the last decade saw the economy experience growth, albeit low, as the country began to 'reap the dividends of the economic reforms put in place since the Aquino administration in the 1980s', which includes 'liberalization in trade, oil, telecommunications, and domestic shipping; opening up to foreign direct investment, privatizing government assets, and strengthening central bank's independence' (Bayangos 1997: 20-21; Country Migration Report 2013:25; Llanto 2012:2; Bocchi:2008: 8).

**Figure 4-1. % Change, Real GDP, Philippines, 1971-2010**



*Source: Philippine Institute of Development Studies database*

Another cause of slow and unsustained growth in the Philippine economy is the low Total Factor Productivity (TFP) growth and the sluggish pace of capital formation compared with its neighbors (Bayangos 2007:21-23; Llanto 2012: 2-3; Usui 2011:5). Llanto (2012) noted that productivity growth had been the main engine of growth in East Asian countries, especially during 1985 to 1995 when it contributed to about 30% of economic growth. In the Philippines, growth has been fuelled by consumption, as it accounted for more than 70% of Gross Domestic Product for the last 10 years (Balisacan et al. 2010).

Bocchi (2008:5-6) gave three reasons as to why domestic investments did not grow at the same pace with the high economic growth since 2002, amidst the country's openness to international trade and financial markets. First, the growth of public investments has been slower than the pace of real GDP growth as a result of 'weak' revenue performance, high debt servicing costs and high input costs. Secondly, 'capital-intensive sectors' are reluctant to expand their investments, mirrored by the declining trend of marginal productivity of capital (MPK) (computed in the corporate sector as market value/asset value) since the 1990s and after the Asian Financial Crisis. This low returns on investment, according to Bocchi (2008) is reflected by inadequate investments in the public sector which provides less incentive for private sector investments, and the high cost of inputs due to 'elite capture' of traditional sectors ,e.g. agriculture, sea and air transport, power, among others. Thirdly, economic growth has been fuelled by the expansion of the service sector, which is notably less capital-intensive than manufacturing. Usui (2011:16) stated that the Philippines now ranks as the 3<sup>rd</sup> top destination of BPO companies in the world, with voice services accounting for 50% of total exports, and the remaining 50% comprised by 'higher value services such as software development, finance, animation, engineering, medical transcription and architectural services. However, it was not able to provide enough jobs for the fast-growing labor force.

## 4.2 Demographic, Unemployment, Poverty and Income Inequality Trends

The Philippine population stood at 92.3 million as of 2010, increasing at a fast pace of 2.48% per year, with a median age of 23 and is considered a one of the highest growth rates in Asia. The labor force (15-64) expanded at an average of 2.8% per annum, and accounts for more than half of the total population for the last 40 years (Tables 4-2 and 4-3).

**Table 4-2. Total Population, Average Annual Growth Rate, TFR and Median Age, 1960-2010**

Year	Population (in Million)	Ave. Annual Growth Rate	TFR*	Median Age
1960	27.09	2.89	7.2	17
1970	36.86	3.08	6.3	17
1980	48.1	2.75	5.1	18
1990	60.7		4.3	19
1995	68.62	2.32	-	20
2000	76.51	2.34	3.8	21
2007	88.55	2.04	-	-
2010	92.34	1.9	3.1	23
1960-2010		2.48		

*TFR denotes Total Fertility Rate.*

*Source: Country Migration Report 2013*

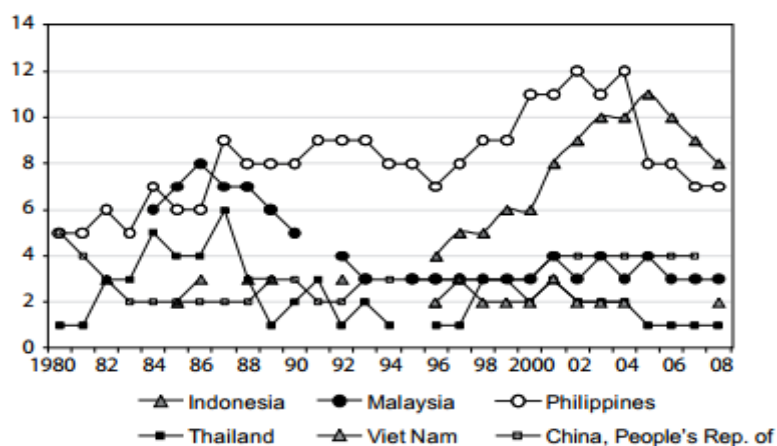
**Table 4-3. Percent Distribution by Age Group from 1970-2010**

Age Group	1970	1975	1980	1990	1995	2000	2007	2010	Growth Rate (1970-2010)
0-14	45.7	44	42	39.6	38.3	37	35.5	33.4	1.5
15-64	51.4	53.1	54.6	57	58.2	59.2	60.4	62.3	2.8
65 over	2.9	2.9	3.4	3.4	3.5	3.8	4.1	4.3	3.4
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>7.7</b>

*Source: Albert et al. (2012)*

However, domestic labor market cannot accommodate the fast growing labor force, and unemployment has been a chronic problem. The Philippines' unemployment rates are considerably higher with its Southeast Asian neighbors and have remained high during periods of economic growth (Table 4-2). In addition, the Bureau of Labor and Employment Statistics (BLES) (Country Migration Report 2013:31) stated that youth unemployment (15-24) is higher than adult unemployment, and a large share of unemployed finished tertiary education, with degrees in 'nursing, maritime, business and teacher education'. Furthermore, the double-digit underemployment rates since 1974 shows how unemployment rates underestimate the current plight of the domestic labor conditions in the country (Country Migration Report 2013:32).

**Figure 4-2. Unemployment Rate (% of labor force), Selected Asian Countries, 1980-2008**



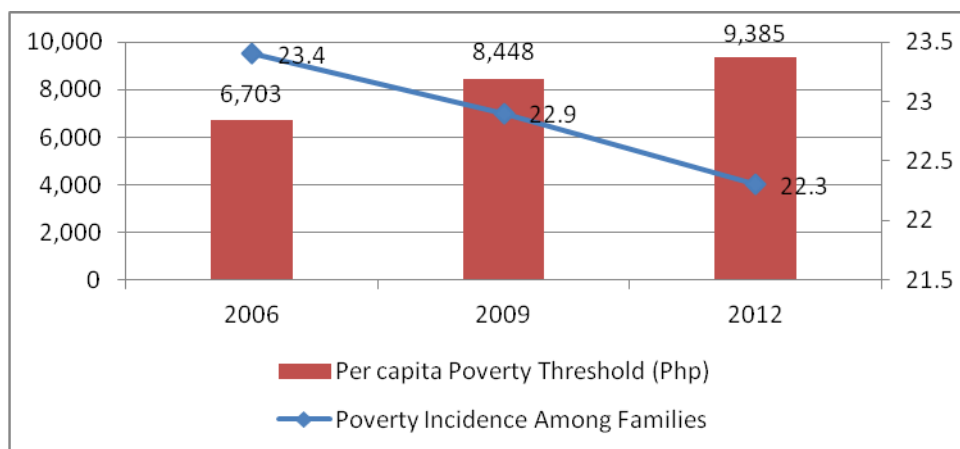
*Source: Usui 2011*

In addition to high unemployment rates, poverty incidence remains high (Usui 2011:2). The reported 1.1% drop in poverty incidence from 2006 to 2012 is statistically insignificant, which shows that it remained constant during the last 6 years (NSCB 2013). Furthermore, income inequality of the Philippines is relatively higher than its Southeast Asian peers, albeit a slight im-

provement in Gini coefficient to 0.4580 in 2006 from 0.4680 in 1991 (NEDA 2010:53).

The literature has strongly associated the stagnation of the manufacturing sector to high unemployment and high poverty incidence in the country (Aldaba et al. 2013: 53-54; Usui 2011). While growth in the recent years in the Philippines has been service-led due to the expansion of the BPO sector, it was not able to provide enough jobs (Usui 2011: 16; Aldaba et al. 2013) explain that developing the manufacturing sector is a good strategy to promote inclusive growth – ‘a broad based growth with the encompassing benefits that can reach the marginalized and disadvantaged such as the poor in developing countries’.

**Figure 4-3. Per Capita Poverty Threshold and Poverty Incidence Among Families, 2006, 2009 and 2012**



Source: NSCB 2013

### 4.3 Key Factors that Led to the Rise of the Philippines as a Major Country of Migration

#### 4.3.1 Historical Context

The Philippines is dubbed to have a ‘culture of migration’, due to the large number of Filipino migrants and workers located around the world. It started in the early 1900s when the Philippines was a colony of the United States, and Filipino single men were recruited to work in Hawaii, California, Washington and Oregon. About 120,000 Filipinos arrived in Hawaii as plantation workers from 1906 to 1934. Prior to 1934, flows of temporary workers were unhampered until the Tydings-McDuffie law was enacted, and the the Filipinos were subjected to immigration quotas. Due to labor shortages in Hawaii, the flow of Filipino migrants continued, but slowed down until World War II. The passing of 1965 Immigration and Nationality Act in the US became a turning point of this intensified migration. Beginning in the 1960s, women migrants accounted for more than 60% of total emigrants, and were employed in the health sector. Moreover, other countries like Canada, Australia and New Zealand followed suit in liberalizing their pro-European immigration policies in the 1960s and 1970s ‘under the family or skilled based provision’. As political

and economic environment in the Philippines worsened during this period, these destination countries became attractive to prospective migrants and the Philippines became a major sender of permanent migrants to these countries (Asis 2006; Asis 2007; Tyner 1999:676-679).

Other countries which are not traditional migration destinations include Japan, where Filipino migrants started to arrive in the country in the early 1900s as professional musical entertainers (Suzuki 2008:69), and Germany where Filipinos settled 'through marriage and work-related migration' (Asis 2006).

### ***4.3.2 Domestic Factors***

Asis (2007:192-194) identified these three factors inherent in the Philippines: 'persisting economic push factors, the institutionalization of migration and the development of a culture of migration'.

As previously discussed, the Philippines has suffered a series of economic, social and political shocks, in the 1970s until the 1980s. This made the Philippines a less conducive environment for investments, which is vital for job creation. Moreover, the rate of unemployment has not been able to provide sufficient jobs for the young and fast-growing labor force.

The Philippine government has been proactive in 'securing a niche in the global market'. Several government offices have been created since the 1980s to cater to needs of the overseas Filipinos. One of these is the Commission on the Filipino Overseas (CFO) which is primarily responsible for permanent migrants and residents, and Filipino spouses of foreign nationals. OWWA, POEA, DOLE and the DFA are the offices responsible for overseas Filipino workers.

### ***4.3.3 Global Factors***

The following global processes that took place in the last few decades led to the rise of the Philippines as a major labor exporter in the world: (1) Oil crisis of the 1970s in the Middle East, (2) Rise of the Newly Industrialized Economies in Asia in the 1980s, (3) Ageing problem in the rich and advanced economies and (4) larger demand for skilled and professional workers in the 1990s (Asis 2007; Country Migration Report 2013: 35-36; IOM 2009:32; Tyner 1999).

The oil price hikes during the 1970s increased the revenues of the countries in the Middle East that prompted them to embark on massive infrastructure programs and recruited male workers in the production and construction sectors from the Philippines and other Asian countries. Moreover, domestic worker migration to the Middle East ensued after completion of major infrastructure projects in the 1980s (Battistella and Asis 2011:9; Tyner 1999:680).

Meanwhile, the rapid economic growth in the East and Southeast Asian countries in the 1980s made these countries as new attractive destinations for factory workers and domestic helpers. The hiring of domestic workers was brought about by the entry of local women in the workforce, unlike in the Middle East which is motivated by 'status symbol' for women (Battistella and Asis 2011:9; Tyner 1999:683).

The Philippines is also the major provider of nurses and healthcare workers in the world. Traditionally, the major destinations for nurses and doctors are the US and Saudi Arabia. In the recent decade, United Kingdom, Ireland and the Netherlands opened their labor market for Philippine nurses (Lorenzo et al. 2007:1406; IOM 2009:57).

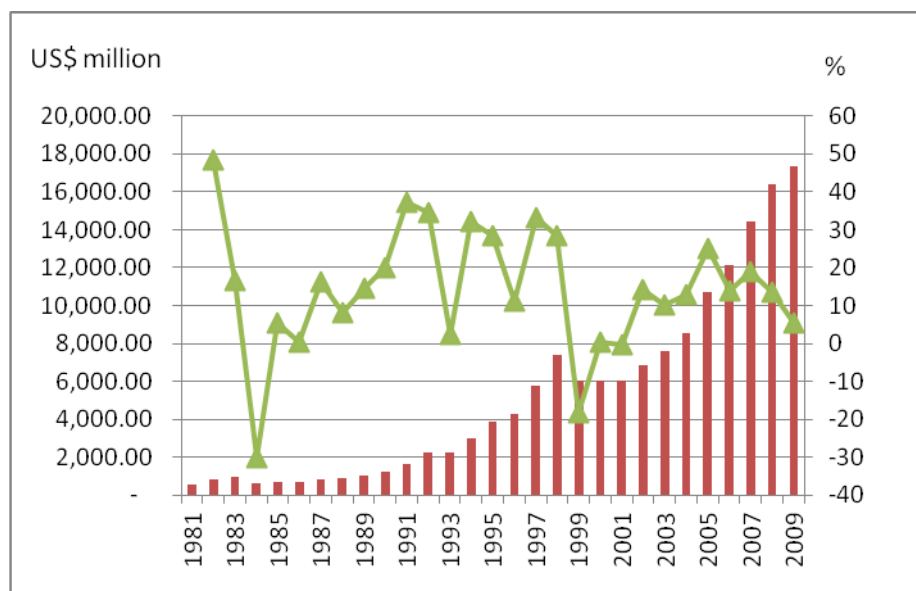
## Chapter 5 Results and Discussion

### 5.1 Trends in Remittance and Migration Flows in the Philippines

#### 5.1.1 Increased Remittances Flows

Remittances to the Philippines sent by emigrants abroad and overseas workers have become a lifeblood for the Philippine economy. Figure 5-1 shows the levels of remittances and their growth rates from 1981-2012. They grew rapidly on a yearly basis on average at 13.1% over the last 30 years. In 2012, remittances totalled US\$21.3 billion, from US\$ 545.9 million in 1981. Remittances surged during 1990-1997, when they increased by 25.3% on average, during the period. However, remittance receipts fell in 1999 as a result of the Asian Financial crisis. Beginning 2008, remittances' growth decelerated owing to the global financial crisis and the weak global economy, but in absolute terms, they still increased. While there have been volatilities remittance inflows during the Asian financial crisis and the GFC, the latter has been less pronounced. As shown in Table 5-1, remittances as percentage of nominal GDP equalled to 8.18%, on average for the period 1996 to 2004. Starting in 2009, remittance flows equalled to 15% of real GDP.

Figure 5-1 Remittance Inflows, 1981-2012



Source: *Bangko Sentral ng Pilipinas (BSP)*

#### 5.1.2 Remittances as Major Source of Foreign Exchange Flows

Table 5-1 shows the magnitude of remittance flows relative to other major sources of foreign exchange in the Philippine economy. Remittance inflows have only been outperformed by receipts from exports of goods and service



between 1996 to 2012. Remittances as percentage of GDP equalled to 8.18%, on average from 1996 to 2004. For the same period, FDI inflows accounted for 1.9% of GDP, portfolio investments at 2.7% and external borrowings at 7.2%. By 2009, remittances equalled to 15% of real GDP. In 2011, they accounted for 15% of GDP compared to 4.01% in external borrowings, 3.08% of GDP in portfolio investments, and only 1.39% of GDP in FDI.

**Table 5-1 Magnitude and Stability of Remittances relative to other financial flows in the Philippines, 1996-2012\***

Year	OFW Remittances		Exports of Goods and Services		External Borrowings		Foreign Direct Investment		Portfolio Investments	
	Level (US\$B)	% of GDP	Level (US\$B)	% of GDP	Level (US\$B)	% of GDP	Level (US\$B)	% of GDP	Level (US\$B)	% of GDP
1996	4.31	6	39.55	54.94	2.89	4.02	3.6 2	5.03	4.15	5.77
1997	5.74	7.6	48.06	63.47	3.47	4.58	0.84	1.11	3.07	4.05
1998	7.37	12.4	43.41	73.21	4.83	8.15	2.02	3.41	3.31	5.58
1999	6.02	7.8	37.71	48.6	6.24	8.04	1.25	1.61	3.92	5.05
2000	6.05	7.5	40.72	50.26	6.85	8.45	2.24	2.76	0.26	0.32
2001	6.03	7.2	34.39	41.24	7.98	9.57	0.2	0.23	1.08	1.3
2002	6.89	8	37.83	43.78	7.22	8.36	1.54	1.78	1.37	1.59
2003	7.58	8.4	38.73	42.7	7.21	7.95	0.49	0.54	1.38	1.52
2004	8.55	8.8	42.84	44.26	5.47	5.65	0.69	0.71	-0.8	-0.83
2005	10.69	10.5	44.79	44.17	4.07	4.01	1.85	1.83	3.62	3.57
2006	12.76	12	52.97	49.63	1.05	0.98	2.92	2.74	4.61	4.32
2007	14.45	12.7	59.28	52.1	0.79	5.65	2.92	2.56	3.79	3.33
2008	16.43	13.9	57.97	48.92	1.2	4.01	1.54	1.3	-4.42	-3.73
2009	17.35	14.5	48.62	40.57	2.56	0.98	1.96	1.64	2.09	1.74
2010	18.76	14.5	64.84	50.26	3.5	5.65	1.3	1.01	7.24	5.61
2011	20.12	15	64.1	47.94	0.43	4.01	1.85	1.39	4.11	3.08
2012	21.39	15	69.72	48.82			2.03	1.42	4.73	3.31
<b>Ave</b>	<b>11.2</b>	<b>10.7</b>	<b>48.56</b>	<b>49.65</b>	<b>4.11</b>	<b>5.63</b>	<b>1.72</b>	<b>1.83</b>	<b>2.56</b>	<b>2.68</b>
<b>SD</b>	<b>5.75</b>		<b>10.97</b>		<b>2.53</b>		<b>0.91</b>		<b>2.64</b>	
<b>CV</b>	<b>51.35</b>		<b>22.58</b>		<b>61.47</b>		<b>52.72</b>		<b>103.13</b>	

\*Data from 1996-2007 were taken from Bayangos and Jansen (2009). Data for 2008-2012 were taken from the Bangko Setral ng Pilipinas. External borrowings are computed by deducting out-standing external debt from each year

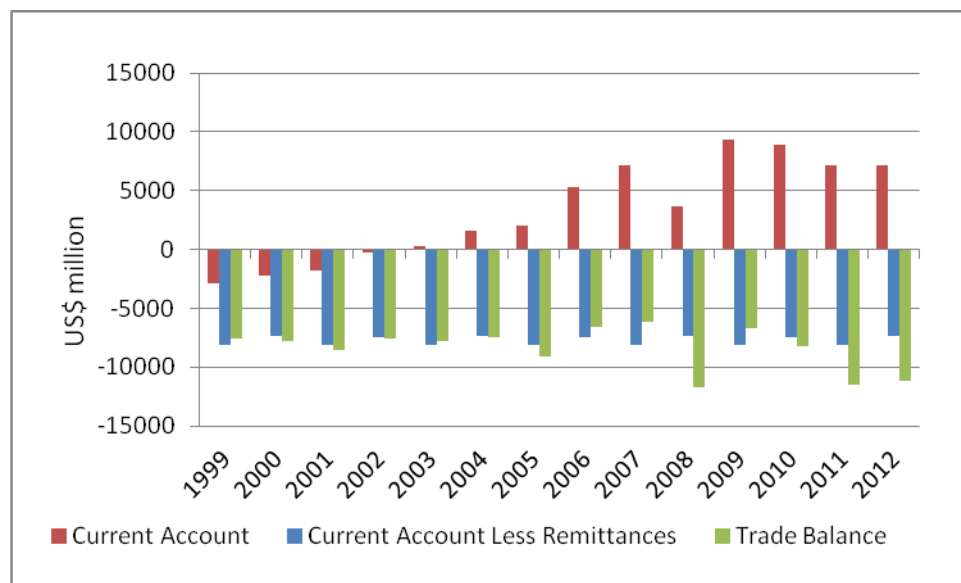
### 5.1.3 Stability of Remittance Flows

Using the coefficient of variation as a measure of volatility, the results confirm that remittance flows tend to be a more stable source of foreign exchange earnings for the Philippines than FDI, portfolio investments and external borrowings (Table 5-1). This verifies the earlier findings of Bayangos and Jansen (2009) in the case of the Philippines, as well as those in the literature. The coefficient of variation (CV) from 1996-2012 of remittances is 51.35, followed by

FDI at 52.72, external borrowings at 61.47 and portfolio flows at 10313. Compared with receipts from exports of goods and services, remittances are more volatile. In this case, the relative stability of remittances could be explained by several factors like altruism, or as remittances as ‘fixed loan payments to family members by emigrants’ (Poirene 1997 cited in Chami et al.2008), among others.

Furthermore, the stability and sustained growth of remittances has played a major role in keeping the current account in surplus since 2003 as shown in Figure 5-2. Note that the average current account less remittances from 1999 to 2012 is negative US\$7.1 billion, in contrast with surplus of U\$3.6 billion with remittances for the same period. Despite the persistent trade balance deficits, current account rose steadily during 2003-2007. During the global economic crisis in 2008, current account surplus narrowed by half to US\$3.6 billion from US\$7.1 billion in 2007, owing to the sharp decline in merchandise exports due to lacklustre performance of global trade . The current account surplus widened to an average of US\$9.1 billion for the years 2009 to 2010. Note that the situation could have been much worse during 2008 to 2010, if not for remittances inflows which have averaged US\$17.5 billion for the same period.

**Figure 5-2. Current Account with and without Remittances, 1999-2012**



*Source: Balance of Payment Statistics, Bangko Sentral ng Pilipinas*

#### **5.1.4 Sources of Remittance Flows Reflect Diverse Migration Flows**

Burgess and Haksar (2005:5) and Bayangos and Jansen (2009) pointed out that the sources of remittances have become ‘geographically diverse’ which mirrors the increasing pattern of migration flows throughout the years, as Filipino emigrants and overseas workers are located around the four corners of the globe.

**Table 5-2. Regions and Country Shares in Remittance Flows to the Philippines, 1985-2012**

Region/Country	Average % Share						
	1985-1989	1990-1999	2000-2007	2008	2009	2010	2008-2012
<b>TOTAL*</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>ASIA</b>	5.4	8.6	12.9	<b>11.5</b>	<b>12.0</b>	<b>12.6</b>	<b>12.6</b>
of which:							
Japan	2.7	2.9	4.7	3.5	4.5	4.7	4.4
Hongkong	1.2	3.3	3.3	2.5	2.0	1.9	2.0
Singapore	1.1	1.6	2.3	3.2	3.7	3.9	3.8
<b>AMERICAS</b>	<b>41.8</b>	<b>69.1</b>	<b>58.0</b>	<b>56.1</b>	<b>53.7</b>	<b>53.2</b>	<b>53.5</b>
of which:							
USA	41.5	68.7	55.7	47.6	42.2	41.9	43.2
Canada	0.3	0.3	1.7	8.0	11.0	10.8	9.9
<b>OCEANIA</b>	<b>0.8</b>	<b>1.0</b>	<b>0.5</b>	<b>0.9</b>	<b>1.2</b>	<b>1.3</b>	<b>1.3</b>
of which:							
Australia	0.8	0.9	0.4	<b>0.8</b>	<b>1.0</b>	<b>1.1</b>	<b>1.1</b>
<b>EUROPE</b>	<b>5.2</b>	<b>7.7</b>	<b>12.9</b>	<b>16.2</b>	<b>17.6</b>	<b>17.0</b>	<b>16.7</b>
of which:							
Italy	0.1	1.1	3.9	4.1	3.0	2.9	2.9
Germany	0.9	2.2	1.1	1.9	2.5	2.4	2.3
United Kingdom	1.6	2.6	3.2	4.7	5.0	4.7	4.8
<b>MIDDLE EAST</b>	<b>32.5</b>	<b>3.5</b>	<b>14.1</b>	<b>15.2</b>	<b>15.4</b>	<b>15.8</b>	<b>15.8</b>
of which:							
Saudi Arabia	30.5	3.5	9.9	8.3	8.5	8.2	8.2
United Arab Emirates	0.0	0.1	2.2	3.8	3.7	4.1	4.1
<b>AFRICA</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.11</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>
<b>OTHERS</b>	<b>14.3</b>	<b>9.5</b>	<b>1.5</b>	<b>0.01</b>	<b>0.0</b>	<b>-</b>	<b>0.0</b>

Source : 1985-2007: *Bayangos and Jansen (2009)*  
2009-2012: *Bangko Sentral ng Pilipinas*

Table 5-2 shows that 12% of remittance flows from 2000 to 2012 came from Asia, with largest shares from Japan, Hongkong and Singapore. North America provided more than half of total remittances, with US as the largest single country source- more than 40% of total remittances from 2008-2012, down from 55.7% average share from 2000-2007. Canada' share in total remittance flows showed an uptrend, with a steep increase to 9.9% in 2008-2012, a compared to 1.7% from 2000-2007, on average. Moreover, Canada is the second largest country source of remittance flows for the past five years on average, surpassing Saudi Arabia. Europe's share in remittance flows to the Philip-

Philippines has also increased from 1985 to 2012, with United Kingdom and Italy as having the most important shares. The Middle East generated about 15.8% of remittances from 2008-2012. Note a sharp drop in the share of Saudi Arabia in total remittances from an average of 30.5% from 1985 to 1989 to an average of 3.5% from 1990-1999. This could be explained by the rise of the NIEs as new attractive destination for migrant workers during the period. From 2000 to 2007, Saudi Arabia's share climbed to an average of 9.9%, and the country has been the third largest source of remittance flows from the past 5 years. UAE's share in total remittance flows showed an uptrend throughout the years.

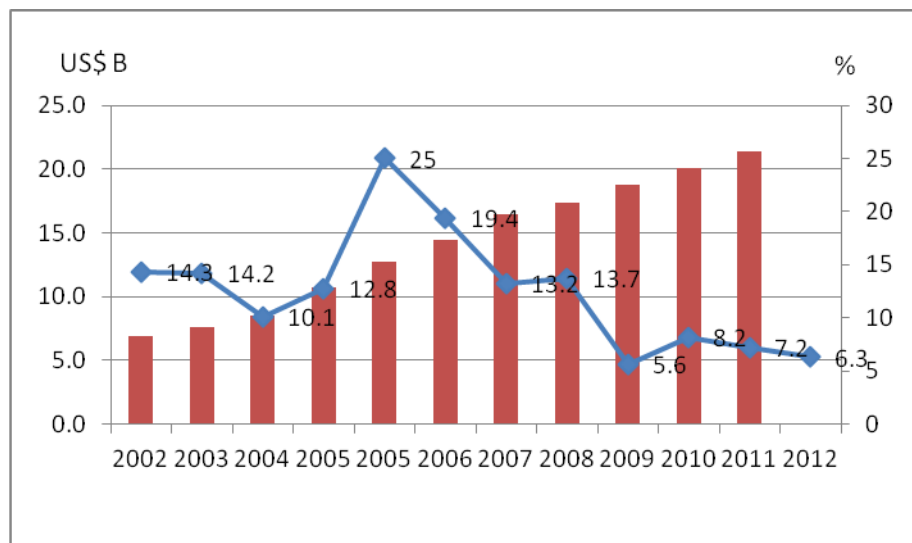
## **5.2 Impact of the Global Financial Crisis on Remittance Flows to the Philippines**

It is worthy to note that the major destination countries of overseas Filipinos, with the exception of Saudi Arabia and United Arab States are all advanced economies which are highly integrated into the global trade and financial system. Note that the global financial crisis which originated in the US in the late 2007 spilled over to real sector of the global economy, and advanced economies mostly suffered the brunt of the crisis, especially the United States and EU. As discussed earlier, there has been a variation in the effect of the crisis on output across and within regions in the world. Earlier estimates on the level of remittances for 2008 and 2009 predicted a downtrend or a decline in remittances, as employment situation and opportunities of migrant workers would be adversely affected by the crisis.

The volume of total remittances consistently increased year-on-year from 2007 to 2009, albeit at a slower pace as shown in Figure 5-3. Remittances reached US\$ 18.8 billion in 2009, higher than its 2008 level of US\$ 17.3 billion. Remittances' growth eased from an average of 16.3% from 2003 to 2006 to 10.3% from 2007 to 2009. The steepest year-on-year deceleration was seen in 2009 - 5.6% growth from 13.7% growth in 2008.

In 2010, remittances increased by 8.7%, higher than the 5.6% growth in 2009, when the host economies saw a steep expansion of their real output (Table 5-3). In 2011 and 2012, growth of flows eased moderated slightly to 7.2% and 6.2% in 2011, which could be attributed to a still fragile global economy and the European debt crisis.

**Figure 5-3. Remittance Flows and Growth Rates, 2002-2012**



Source of data: *Bangko Sentral ng Pilipinas (BSP)*

Flows from all host countries increased on average from 2007 to 2009 compared to their levels from 2004 to 2006. Flows from Canada observed the steepest rise in remittance flows, a more than 28-fold increase from US\$ 67.3 million in 2004 to US\$ 1.31 billion in 2009. In addition, volume of flows from Singapore and UAE registered about 3.5-fold increase from US\$182.6 million and US\$183.4 million in 2004, respectively to US\$ 649.9 million and US\$644.8 million in 2009, respectively. Flows from Japan more than doubled from 2004 to 2009, from US\$ 308.1 million to US\$773.6 million.

On the other hand, remittance flows slowed down from the host countries during the recession (2007-2009), except for Singapore and Japan. In 2007, flows from Hongkong dropped by 7.4% to US\$338.2 million, from US\$413.7 million in 2006. Meanwhile, flows from Canada posted the largest slowdown in growth from 404% in 2006 to 0.8% in 2007, but recovery bounced back quickly the following year (54.5% growth).

Year-on-year 2008 growth rates of remittances were lowest for USA and Singapore, while flows from Saudi Arabia and Hongkong posted higher rates. In 2009, flows from USA (-6.4%) and Italy (-23.2%) dropped from their 2008 levels, while flows from other countries still increased in absolute term, albeit at a slower pace, except for Japan. Flows from Saudi Arabia decelerated for the first time (11.7%) since 2007 and flows from Canada slowed down by 9.2% after observing higher year-on-year growth in 2008.

In 2010, remittances from USA and Italy increased in absolute terms. Remittances from Saudi Arabia eased slightly to 5% from 6% growth in 2009, while flows from UAE posted higher year-on-year growth. Flows from the other countries decelerated but still increased compared to their 2009 levels.

**Table 5-3. Remittance Flows from Major Host Countries in US\$ million, 2004-2012**

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
USA	4904.3	6424.8	6526.4	7564.9	7825.6	7323.7	7862.2	8481.2	9116.8
Saudi Arabia	877.2	949.4	111.79	1141.3	1387.1	1470.6	1544.3	1613.2	1728.6
Canada	67.3	117.1	590.6	595.1	1308.7	1901	2022.6	2071.5	1972.9
UK	300.7	561.7	561.7	684	776.4	859.6	889	956.6	1071.6
Japan	308.1	356.7	453.4	401.6	575.8	773.6	883	913.5	1009.6
UAE	183.4	257.4	427.3	530	621.2	644.8	775.2	878	961
Hongkong	273.1	338.9	413.7	383.2	406.1	339.6	362.5	367.9	420.2
Singapore	182.6	240.1	285.1	396.4	524	649.9	734.1	789.2	865.5
Italy	449.3	430.1	574.6	635.9	678.5	521.3	550.2	550.7	427.3

Source: *Bangko Sentral ng Pilipinas (BSP)*

**Table 5-4. Growth Rates of Remittance Flows from Major Host Countries in US\$ million, 2004-2012**

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012
USA	12.3	31	1.6	15.9	3.3	-6.4	7.4	7.9	7.5
Saudi Arabia	5.8	8.2	17.7	2.1	17.7	6	5	4.5	7.2
Canada	59.8	74	404.4	0.8	54.5	45.3	6.4	2.4	-4.8
UK	9.9	0	86.8	21.8	11.9	10.7	3.4	7.6	12
Japan	-12.3	15.8	27.1	11.4	30.3	34.4	14.1	3.5	10.5
UAE	12.3	40.3	66	24	14.7	3.8	20.2	13.3	9.5
Hongkong	12.8	24.1	22.1	-7.4	5.6	16.4	6.7	1.5	14.2
Singapore	24.9	31.5	18.7	39	24.4	24	13	7.5	9.7
Italy	31	-4.3	33.6	10.7	6.3	-23.2	5.5	0.1	22.4

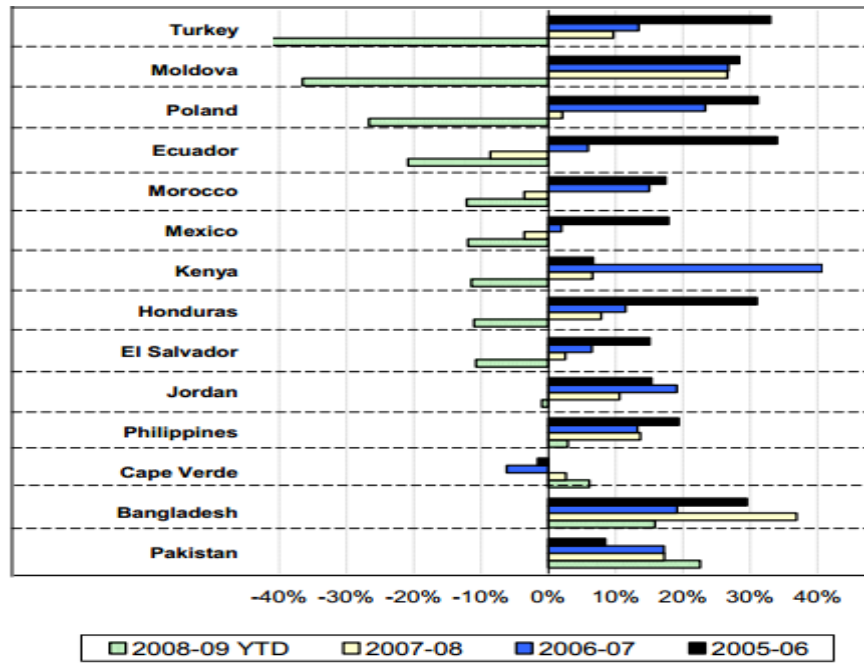
Source: *Own computations*

In 2011, flows from USA and UK observed higher growth while flows from Saudi Arabia eased slightly from the previous year. While remittances from the other countries decelerated but still grew in absolute terms than the previous year, level of remittances in Italy barely changed. This anemic growth in remittances from Italy could be attributed to the lingering effects of the European debt and fiscal crisis. In 2012, flows from all countries grew in absolute terms, except for flows from Canada which dropped by 4.8% for the first time in the last 8 years.

Another important note on the resilience of remittance flows to the Philippines during the global financial crisis relative to other remittance-receiving countries: while there has been a general slowdown in inflow of remittances to Latin America and the Caribbean, Western Europe and Asia, the Philippines is noted to be only one of the four countries which had increased volume of remittance flows from 2008 to 2009 due to the impact of the crisis (Fix et al, 2009:12). As pointed out earlier, the diversified location of migrants and work-

ers contribute largely to this observation (Burgess and Haksar 2005, Bayangos and Jansen 2009). While overseas Filipinos are located in almost all regions of the world, some remittance-dependent countries like Mexico and Honduras, with their migrants were mainly situated in the US (Ibid).

Figure 5-4. Change in Remittance Inflows to Selected Countries, 2005-2009



Source: Fix et al 2009:8

### 5.2.1 Economic Performance and Employment Opportunities in Host Countries

Table 5-4 presents the growth rates of real output and unemployment rates of the host countries from 2007 to 2012. As previously discussed in the earlier chapter, there is a variation in the rate of economic slowdown during the crisis. Note that the US, which is observed to be the epicentre of the crisis, had experienced anemic growth in 2007 and 2008, and sharp contraction in real output in the next two years. The crash in its housing and financial sectors had spawned a global crisis which had varying degree of impacts to the financial and trade segment of the global economy. US has also witnessed a sharp rise in unemployment in 2009 and has not yet come back to its pre-crisis level. The most affected sectors were construction, manufacturing, and hospitality sectors (Awad 2009:14). Turning to Canada which has strong economic linkages with the US, output contracted by -2.8% in 2010. However, it is in a more sound financial and fiscal position than the US (IMF 2012:59), and slowdown in growth and rise in unemployment rate has been less steep than in the US.

Note that while the Middle East region has been affected by fall in price of oil during the crisis (IMF 2009:91), Saudi Arabia only experienced a slowdown in economic growth in 2010, but has registered positive and high growth rates during 2007 to 2009. On the other hand, UAE saw a contraction in real output in 2010 and observed anaemic growth in 2011. This has been due to the

vulnerability of the financial sector and property sector of the latter to the financial crisis (IMF 2010:68; ILO 2010:29). While pre-crisis unemployment is high in Saudi Arabia, it has even dropped in 2009 and 2010.

The EU has been one of the most hardest hit regions of the crisis, with its heavy exposure to US debt and equity markets, which spilled over into its financial and real sectors in 2008 (IMF 2009:75-76). The UK's booming housing and financial sector became vulnerable to the crisis. Note that its real output contracted in 2009 and 2010, and UK's unemployment rates increased by 1.2 percentage in 2009 and jumped to 9.3% the following year, with large job losses in the hospitality sector (hotels, restaurants) and in the manufacturing sector (Awad 2009:15). In addition, economic recovery is still slow, owing to the effect of the Euro crisis. The same trend in economic slowdown and unemployment rate is observed in Italy.

In the case of advanced Asian countries (Singapore, Hongkong), the collapse in the global trade hurt their export sectors (consumer trade and capital goods) (IMF 2009:71). Hongkong's real output contracted in 2009, but it staged a quick recovery the following year following the normalization in global trade and good macroeconomic fundamentals in the Asian region prior to the crisis (IMF 2010:48). Recovery rebounded at a fast pace in Singapore, after experiencing a small contraction in real output in 2010. There has also no significant increase in unemployment in Hongkong and Singapore during the crisis, compared to the other host countries. On the other hand, Japan experienced larger contraction in real output in 2009 and in 2010, but note that the rise in its unemployment rates in 2009 and 2010 is not as steep compared to US and the EU countries.

While there is a dearth of information on the employment situation of the Filipino migrants and overseas worker in the host economies, the following factors were looked into to explain the relative resiliency of remittances during the global financial crisis: stock of migrants, the changing pattern of demand and temporary labor from the Philippines in the recent decades, and policy responses by the Philippines and the host countries during the crisis.

**Table 5-5. Percent Change in Real GDP and Unemployment Rates in Major Host Countries, 2007-2012**

Country	2007	2008	2009	2010	2011	2012
<b>Real GDP (% Change)</b>						
United States	2.7	1.9	-0.3	-3.1	2.4	1.8
Saudi Arabia	5.6	6	8.4	1.8	7.4	8.5
Canada	2.7	2.1	1.1	-2.8	3.2	2.6
United Kingdom	2.6	3.6	-1	-4	1.8	0.9
Japan	1.7	2.2	-1	-5.5	4.7	-0.6
United Arab Emirates	8.8	6.6	5.3	-4.8	1.3	5.2
Hongkong	6.5	2.1	-2.5	6.5	4.9	1.4
Singapore	8.6	9	1.7	-0.8	14.8	5.2
Italy	2.2	1.7	-1.2	-5.5	1.7	0.4
<b>Unemployment (% of Total Labor Force)*</b>						



United States	4.6	4.6	5.8	9.3	9.6	8.9
Saudi Arabia	12	11.2	10	10.5	10	12.4
Canada	6.3	6.1	6.2	8.3	8	7.5
United Kingdom	4.6	4.6	5.8	9.3	9.6	8.9
Japan	4.1	3.8	4	5.1	5.1	4.6
Hongkong	4	3.5	5.3	4.3	3.4	3.3
Singapore	2.7	2.1	2.2	3	2.2	2
Italy	6.8	6.1	6.8	7.8	8.4	8.4

\*Unemployment rates for UAE unavailable

Source: World Economic Outlook Database 2013

## ***5.2.2 Factors that Contributed to the Resilience of Remittance Inflows to the Philippines during the Global Financial Crisis***

### ***Stock of Migrants***

Annex 1 charts the total number of emigrants and overseas Filipino workers from 2002-2012, which grew at an average of 3.2% on a yearly basis. There has been a slight slowdown in year-on-year growth of emigrants in 2008 and 2009, yet the number of total emigrants still rose in absolute terms. Likewise, the rate of increase in the number of overseas workers also slowed down in 2008 and 2009, but the level of overseas Filipinos during the recession has still increased.

Among the host economies, US and Canada had the largest number of emigrants (Annexes 2 and 3). The US has the bulk of emigrants -4.33 million or 41% of total in 2011. During the recession, there has been a slowdown in movements of emigrants to the US, but it still grew in absolute terms. In Canada, there has been a sharp rise in the level of emigrants in 2007 by 27% and in 2008 by 40%, year on year. The Philippines has been the second largest source of emigrants for 2006 to 2011 (Statistics Canada 2013). The third largest emigrant population is found Japan, which has recorded a sharp rise since 2005 (Annex 6), and this could be attributed to the ‘phenomenon of Filipino-Japanese marriages’ (Country Migration Report 2013:53). Note that this has offset the drastic decline in the volume of hired temporary workers employed in the entertainment industry since 2005 (Ibid). In Italy, there has also been a noted uptrend in number of emigrants in Italy since 2005 as shown in Annex 10. The early migrants in Italy who started as irregular workers as domestic helpers were able to secure regular position and started to bring their family with them (Ibid). Meanwhile, there has been a noted decline in number of temporary workers in Italy during the recession, which mirrors the decline in remittances in 2009.

In the case of Hongkong where most of workers are employed in the service sector as domestic workers (IOM 2009; Asis 2007), there has been an increase in 2007-2009 on average compared to their level in 2004 to 2006(Annex 8). In Singapore, there was a decline in number of temporary workers also primarily hired in the services sector in 2007, but it recovered quickly the following year (Annex 9).

Saudi Arabia employs the largest number of Filipino migrant workers working in the following sectors – business, industry, health and service sectors

(Annex 11). Saudi Arabia on average, hired about 31% of total migrant workers from 2002-2011 (Annex 4). However, there is a noticeable decline in total number of workers in 2009 by 16% year-on-year. On the other hand, it sharply increased in 2010 by 65%. In UAE, the total number of hired workers showed an uptrend despite being the worst country in the Middle East the recession as shown in Annex 7.

### ***Change in the Demand for Overseas Filipino Temporary Labor***

Table 5-5 provides the annual deployment of overseas temporary workers according to skill category from 1994 to 2011. Note that in 1997, 23.3% of deployed workers were professional, medical and technical workers, 34.6% were service workers and 38.7% were production, transport workers and laborers. In 2001, the share of professional workers deployed overseas climbed to 38.1%, and the share of service workers slightly increased to 36.1%, while the share of production and transport workers dropped to 25.3%. This trend changed in 2006 when professionals only accounted for 13.4% of the total deployed workers, compared to 47% share of service workers, and 33.6% of total workers deployed as production and transport workers. This same observation was also noted by Zosa and Orbeta (2009) in their study.

**Table 5-6. Annual Deployment of Newly Hired Temporary Workers, by Skill Category, 1994-2012**

Year	Administrative and Managerial	Professionals Medical Technical	Clerks	Sales Workers	Service Workers	Production, Transport, Laborers	Agricultural Workers	Others
1994	0.1%	28.6%	1.4%	0.9%	35.0%	33.5%	0.5%	0.0%
1995	0.2%	20.5%	1.6%	0.9%	37.8%	38.5%	0.5%	0.0%
1996	0.2%	17.9%	1.6%	1.0%	41.2%	37.8%	0.4%	0.0%
1997	0.3%	23.3%	1.6%	1.2%	34.6%	38.7%	0.2%	0.0%
1998	0.2%	25.4%	1.4%	1.2%	36.7%	34.7%	0.2%	0.0%
1999	0.1%	26.3%	1.1%	0.9%	35.6%	33.5%	0.2%	0.2%
2000	0.1%	32.7%	1.0%	0.9%	37.9%	24.0%	0.2%	2.3%
2001	0.2%	38.1%	1.3%	1.2%	36.1%	22.0%	0.2%	3.2%
2002	0.1%	36.3%	1.5%	1.1%	35.4%	25.3%	0.2%	0.6%
2003	0.2%	33.7%	1.8%	1.1%	35.6%	27.5%	0.2%	0.0%
2004	0.2%	33.2%	2.4%	1.4%	40.2%	22.4%	0.2%	0.0%
2005	0.2%	22.5%	2.3%	1.5%	47.1%	25.3%	0.1%	1.1%
2006	0.3%	13.4%	2.6%	1.8%	47.0%	33.6%	0.3%	1.3%
2007	0.4%	14.1%	4.5%	2.6%	35.0%	39.7%	0.3%	3.5%
2008	0.4%	14.7%	5.4%	3.4%	36.5%	39.1%	0.4%	0.1%
2009	0.4%	14.4%	4.6%	2.5%	41.7%	35.5%	0.4%	0.5%
2010	0.4%	12.3%	3.1%	2.1%	45.4%	35.5%	0.3%	0.8%
2011	1.1%	14.1%	3.2%	2.0%	46.0%	32.3%	0.4%	0.8%
2012	1.0%	12.0%	3.0%	2.0%	48.0%	32.0%	0.3%	0.2%

*Source: 1994- 2005: Zosa and Orbeta (2009)*

*2006-2012: Country Migration Report 2013*

Moreover, note that there has been a steady increase in the number of deployed workers annually from 2000 to 2012 (Table 5-6). It is also worthy to

note that the percentage of rehired workers during the recession (2007-2009) on average (62%), was higher than the average rate from 2004 to 2006 (58%).

Note that as previously discussed, most of recorded job losses in the host countries, with the exception in the Middle East were largest in construction, manufacturing and hospitality sectors. The services sector, particularly domestic work was not affected by the crisis. Most of temporary workers in Hongkong, Singapore, and Italy are employed as domestic workers. Meanwhile, temporary workers mostly deployed to UK are nurses and caregivers (Zosa and Orbeta 2009:8, Lorenzo et al 2007:1406). Annex 11 shows the annual deployment in Saudi Arabia, the employer of temporary workers, from 2006 to 2010. The uptrend in number of workers deployed as production workers, professional workers especially engineers, nurses, and service workers was also noted.

**Table 5-7. Annual Deployment of Filipinos overseas, in thousands, 2000-2012**

Year	Total	Growth Rate	Landbased	Seabased	Rehires*
2000	841.6	0.6%	643.3	198.3	398.9
2001	866.6	3.0%	661.6	205.0	390.6
2002	891.9	2.9%	682.3	209.6	393.6
2003	867.9	-2.7%	651.9	216.0	372.4
2004	933.6	7.6%	704.6	229.0	414.7
2005	988.6	5.9%	740.6	248.0	450.7
2006	1,062.6	7.5%	788.1	274.5	470.4
2007	1,077.7	1.4%	811.1	266.6	497.8
2008	1,236.0	14.7%	974.4	261.6	597.4
2009	1,422.6	15.1%	1,092.2	330.4	742.4
2010	1,470.8	3.4%	1,123.7	347.2	781.7
2011	1,687.8	14.8%	1,318.7	369.1	881.0
2012	1,802.1	6.8%	1,435.2	366.9	976.6

\*Based on land-based only

Source: Country Migration Report 2013

### ***Immigration Policies in the Home and Host Countries During the Crisis***

As noted in earlier chapter, the US' immigration policies have been permanently stable during the crisis, and this did not hamper flows of migrants. Moreover, Canada's policies were favourable to both immigrants and temporary workers and maintained its immigration quota and did not limit entry of foreign workers during the recession (Fix et al. 2009:26,69; Awad 2009:49). This mirrors the uptrend in number of migrants and remittance inflows from Canada from 2008 and 2009. Meanwhile, the quota on foreign workers by the Italian government mirrored the slowdown in the flows of Filipino migrant workers to the country and the decline in the remittance level in 2009. Moreover, the stricter point-based-system (PBS) imposed in new foreign workers the UK in the entry reflects the decline in the number of Filipino workers, and the deceleration of remittance flows during the period.

### 5.3 Cyclicalities of Remittances

The summary statistics for both untrended and trended (using HP filter) nominal remittances and nominal GDP of the Philippines and the major destination countries are presented in Annex 11. Note that during the crisis (short-run) remittances are countercyclical, with respect to the output of the host economies, at the aggregate level. At the country level, remittance flows from US, Italy, and Hongkong exhibit procyclical relationship with the economic activities of these countries. In this section, original (non-detrended) and detrended nominal remittances, and nominal GDP of the Philippines and its major host countries are used.

#### 5.3.1 Correlations

Table 5-7 presents the cross-correlation and lagged (up to three quarters) between (non-detrended) remittances and (non-detrended) output of the Philippines and those of the host countries. Note that remittances are positively correlated with both output of the Philippines of the host economies. Moreover, business cycle correlations between remittances and Philippine GDP, and between remittances and host countries' GDP in Table 5-8 shows stronger procyclical relationships. This implies that remittances increase during period of economic booms in the Philippines, and also during periods of higher economic activity in the host countries. This confirms the earlier study of Bayangos and Jansen (2009) which observed the procyclicality of remittances with Philippine GDP and with several of its host countries. However, correlation coefficients are almost equal to 1, and these could be spurious correlations.

**Table 5-8. Cross Correlations of Nominal Remittances (US\$ million) and Nominal GDP of Home and Host Countries, non-detrended, 1989Q1 to 2012Q4**

Country	No Lag	Lag of One Quarter	Lag of Two Quarters	Lag of Three Quarters
Philippines	0.957 */	0.949 */	0.955 */	0.945 */
USA	0.95 */	0.948 */	0.945 */	0.943 */
Saudi Arabia	0.967 */	0.965 */	0.962 */	0.963 */
Canada	0.967 */	0.964 */	0.959 */	0.955 */
UK	0.888 */	0.882 */	0.871 */	0.863 */
Japan	0.712 */	0.706 */	0.7 */	0.705 */
Hongkong	0.913 */	0.916 */	0.917 */	0.912 */
Italy	0.862 */	0.85 */	0.836 */	0.819 */

*\*/ refers to 5% level of significance*

**Table 5-9. Cross Correlations of Nominal Remittances (US\$ million) and Nominal GDP of Home and Host Countries, detrended, 1989Q1 to 2012Q4**

Country	No Lag	Lag of One Quarter	Lag of Two Quarters	Lag of Three Quarters
Philippines	0.978 */	0.979 */	0.979 */	0.979 */
USA	0.962 */	0.961 */	0.959 */	0.958 */
Saudi Arabia	0.987 */	0.988 */	0.987 */	0.987 */
Canada	0.986 */	0.985 */	0.984 */	0.983 */
UK	0.925 */	0.921 */	0.916 */	0.911 */
Japan	0.833 */	0.837 */	0.841 */	0.845 */
Hongkong	0.937 */	0.948 */	0.945 */	0.948 */
Italy	0.905 */	0.897 */	0.890 */	0.881 */

*\*/refers to 5% level of significance*

As shown in Table 5-9, the coefficients of the first-differenced non-detrended data were smaller and gave different results. There is no clear correlation between remittances and Philippine GDP positive and negative coefficients that are both statistically significant. In addition, remittance flows from Italy and Saudi Arabia show to be positively correlated with Philippine output, but their timing is different. This supports the investment motive of overseas Filipinos from these countries. Emigrants and workers from Italy appear to send more remittances to the Philippines quickly during periods of higher economic activity in Italy and send less during periods of economic hardships/crisis in the said host country. In the case of overseas Filipinos in Saudi Arabia, they have to watch the economic developments in the host country (three quarters) before they increase their remittances. This might suggest that because of period of higher economic activity in these host countries, they have better job opportunities which can give them higher income/salaries, so that they can send more. It is also possible that overseas Filipinos are not planning to stay permanently for a long period of time in these host countries so they want to shift their remittances to the Philippines while the economy is booming.

**Table 5-10 .Cross Correlations of First-Differenced Nominal Remittances (US\$ million) and Nominal GDP of Home and Host Countries, non-detrended, 1989Q1 to 2012Q4**

Country	No Lag	Lag of One Quarter	Lag of Two Quarters	Lag of Three Quarters
Philippines	0.3724 */	-0.2916 */	0.4162 */	-0.4099 */
USA	0.0971	-0.0139	0.0188	0.0454
Saudi Arabia	0.1775	0.1596	-0.1096	0.2004 **/
Canada	0.1042	0.0942	-0.0835	0.0086
UK	0.0571	0.0813	-0.0998	0.0696
Japan	-0.0163	0.0086	-0.1792	0.1035
Hongkong	-0.0626	0.0724	0.1478	-0.0086
Italy	<b>0.2297</b> **	-0.0068	-0.014	-0.1333

*\*/refers to 5% level of significance, \*\*/refers to 10% level of significance*

### 5.3.2 Cointegrating Long-Run Relationships

As stated in the earlier chapter, out of the 18 cointegrating regressions, remittances is only found to be cointegrated with output of Canada (both nontrended and detrended) and Saudi Arabia (detrended).

Here, we note that in the case of both nondtrended and detrended data, the long run impact of a change in Canadian GDP on remittances is positive and statistically significant. On the other hand, the short-run impact of a change in Canadian GDP on remittances is statistically insignificant for untrended time series. Moreover, the speed of adjustment is negative (-0.265) and statistically significant for both original and detrended data. This suggests that business cycles in Canada influence the level of remittances sent by overseas Filipinos from this country procyclically.

**Table 5-11. Cointegrating Regression Results of Remittances and Canada (nontrended)**

Independent Variable: Canada GDP, untrended (OLS Results 1989Q1-2012Q4)					
Dependent Variable	n	Coefficient	F-value	R-squared	Constant
Remittances (untrended)	96	0.004*	1368.26*	0.9357	-1275.01

**Table 5-12. Regression Results of Remittances and Canada GDP, nontrended**

Independent Variable: Canada GDP, untrended (ECM Results 1989Q1-2012Q4)						
Dependent Variable	n	Coefficient	F-value	R-squared	Constant	Speed of Adjustment
Remittances (untrended)	95	0.0009	8.12*	44.948	44.95	-0.265*

*\*significant at 5% level of significance*

**Table 5-13. Cointegrating Regression Results of Remittances and Canada (detrended)**

Independent Variable: Canada GDP, trended (OLS Results 1989Q1-2012Q4)					
Dependent Variable	n	Coefficient	F-value	R-squared	Constant
Remittances (trended)	96	0.0037*	3357.22*	0.9728	-1353.21

*\*significant at 5% level*

**Table 5-14. Regression Results of Remittances and Canada GDP (detrended)**

Independent Variable: Canada GDP, untrended (ECM Results 1989Q1-2012Q4)						
Dependent Variable	n	Coefficient	F-value	R-squared	Constant	Speed of Adjustment
Remittances (trended)	95	0.0029*	112.67*	0.7101	18.063	-0.012*

*\*coefficient at 5% level of significance*

The long-run impact of a change in the GDP of Saudi Arabia is positive and significant, while its short-run impact is negative but insignificant. Again its speed of adjustment is negative and significant. Here, we affirm the correlation results that remittances are procyclical with output of Saudi Arabia.

**Table 5-15 Cointegrating Regression Results of Remittances and Saudi Arabia, Non-detrended**

Independent Variable: Saudi Arabia GDP, untrended (OLS Results 1989Q1-2012Q4)					
Dependent Variable	n	Coefficient	F-value	R-squared	Constant
Remittances (untrended)	96	0.0087*	1280.50*	0.9316	-241.66

**Table 5-16 Regression Results of Remittances and Saudi GDP, Non-detrended**

Independent Variable: Canada GDP, untrended (ECM Results 1989Q1-2012Q4)						
Dependent Variable	n	Coefficient	F-value	R-squared	Constant	Speed of Adjustment
Remittances (untrended)	95	-0.0007	8.96*	0.163	63.74	-0.259*

*\*significant at 5% level*

## Chapter 6 Conclusion

Globalization has been cited in the literature to have increased co-movements of business cycles of developed countries over the years through trade and finance channels, and this has been evident in the effects of the recent global financial crisis. Developing countries like the Philippines have become more integrated in the global economy through the years, through the remittance channel. As of 2011, there is an estimated 10.5 million overseas Filipinos all around the world.

Remittance inflows to the Philippines have experienced an accelerated annual growth of 13.1% in the last 3 decades, and accounts for about 15% of GDP in the last 4 years. Remittances have become a major source of external financing in the country. In terms of magnitude, they have dwarfed foreign direct investment (FDI), portfolio investment and external borrowings. In addition, remittances have been found to be less volatile than the aforesaid financial flows, making them a stable source of external financing. These attributes of remittances have bolstered the current account since 2003, despite the persistent trade balance deficits.

The sources of remittances since the 1980s have shown the diversified pattern of migration over the years. US, Canada and Saudi Arabia are the top three sources of remittances, which also host the largest number of Filipino migrants and overseas temporary workers. The other major sources of remittances are UK, Japan, UAE, Hongkong, Singapore and Italy.

The recent global financial crisis had spilled over into financial and real sector of the global economy. At the aggregate level, remittances in the Philippines still managed to grow during the recession (2007-2009). This is despite the fact that the Philippines' major host countries are mainly advanced countries, which experienced sharp slowdown/contraction in output, especially US, Italy, and UK, Saudi Arabia was the only host country that remained unscathed by the ill-effects of the recession in terms of output. Construction, manufacturing and hospitality sectors suffered the largest job losses in the host countries. However, remittances from all the host countries increased during the recession, except for drop in remittance levels in 2007 for Hongkong, and in 2009 for US and Italy. This has been due to the following factors which remained insensitive to the changes in business cycles in these countries: stock of migrants, nature of work (large share of temporary workers in the service sectors) and immigration policy (Canada).

During the crisis (short run), remittances have been countercyclical with respect to output of the host countries, except for US, and Italy which provided less remittances in 2009 and Hongkong in 2008.

The first difference correlation results only suggest that remittances have positive linkage with output of Italy and Saudi Arabia. The cointegration regressions only showed that remittances have long-run, and in this case, positive relationship with output of Canada (non-detrended and detrended) and Saudi Arabia (non-detrended) GDP. On the other hand, no bivariate relationship exist between remittances and the level of output of the host country, nor a relationship between remittances and the level of GDP of largest country re-



mittance source- US . This can be explained by the some of the unobserved factors previously identified as relatively unresponsive to changes in output – number of migrants, nature of work (service sector) and immigration policy in Canada.

This corroborates with the findings of Roache and Gradzka (2007), that as remittances are insensitive to business cycles in the Philippines, and to those of other major host countries especially US, except in Canada and Saudi Arabia, they are reliable sources of external financing, in both periods of economic hardships and booms.

Lastly, Bayangos and Jansen (2009) used constant remittances and GDP, while I employed the nominal terms in this study. This might explain the difference in the correlation results between the two study.

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## Annex 1

### Stock estimates of Filipino Migrants, in thousands, 2002-2011

Year	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	2,807.4	37.0%	3,168.0	41.8%	1,607.2	21.2%	7,582.5
2003	2685.4	35.4%	3385.0	44.6%	1512.8	19.9%	7583.2
2004	3,204.3	44.9%	2,899.6	40.6%	1,039.2	14.5%	7,143.1
2005	3408.0	48.8%	2943.2	42.2%	626.4	9.0%	6977.6
2006	3,568.4	49.0%	3,093.9	42.5%	621.7	8.5%	7,284.0
2007	3693.1	47.6%	3413.1	44.0%	648.2	8.4%	7754.4
2008	3,907.8	47.7%	3626.3	44.3%	653.6	8.0%	8,187.7
2009	4056.9	47.3%	3864.1	45.0%	658.4	7.7%	8579.4
2010	4,423.7	46.8%	4,324.4	45.7%	704.9	7.5%	9,453.0
2011	4867.6	46.6%	4513.2	43.2%	1075	10.3%	10455.8

Source: CFO

## Annex 2

### Stock Estimates of Filipino Migrants in the US, in thousands, 2002-2011

Year	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	1,946.5	76.2%	98.6	3.9%	510.0	20.0%	2,555.0
2003	1979.4	76.4%	99.8	3.9%	510	19.7%	2589.2
2004	2,271.9	83.4%	101.2	3.7%	350.0	12.9%	2,723.1
2005	2326.7	89.6%	111.8	4.3%	158	6.1%	2596.5
2006	2,443.3	89.6%	128.4	4.7%	156.5	5.7%	2,728.2
2007	2517.8	89.8%	128.9	4.6%	155.8	5.6%	2802.5
2008	2,552.0	90.0%	128.6	4.5%	155.8	5.5%	2,836.4
2009	2592.6	90.1%	129.2	4.5%	155.8	5.4%	2877.6
2010	2,882.4	91.0%	128.1	4.0%	156.0	4.9%	3,166.5
2011	3057.5	89.1%	113	3.3%	260.3	7.6%	3430.8

Source: CFO

## Annex 3

### Stock Estimates of Filipino migrants and workers in Canada, in thousands, 2002-2011

Year	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	349.6	91.5%	28.1	7.4%	4.2	1.1%	381.9
2003	359.1	91.6%	30	7.7%	3	0.8%	392.1
2004	369.2	91.2%	32.7	8.1%	3.0	0.0%	404.9
2005	382.8	91.1%	34.4	8.2%	3	0.7%	420.2
2006	396.1	90.4%	38.9	8.9%	3.0	0.7%	438.0
2007	410.6	88.7%	49.3	10.7%	3	0.6%	462.9
2008	533.8	87.0%	73.6	12.0%	6.1	1.0%	613.5
2009	553.8	86.6%	79.8	12.5%	6.1	1.0%	639.7

2010	581.1	87.0%	80.4	12.0%	6.1	0.9%	667.6
2011	735.4	87.3%	102	12.1%	5.3	0.6%	842.7

Source: CFO

#### Annex 4

##### Stock Estimates of Filipino migrants and workers in Saudi Arabia, in thousands, 2002-2011

YEAR	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	0.2	0.0%	897.0	98.0%	18.0	2.0%	915.2
2003	0.2	0.0%	948.3	98.1%	18	1.9%	966.5
2004	0.2	0.0%	976.1	98.2%	18.0	1.8%	994.3
2005	0.2	0.0%	976.4	98.2%	18	1.8%	994.6
2006	0.2	0.0%	1001.3	98.2%	18.0	1.8%	1,019.5
2007	0.4	0.0%	1046.1	98.1%	20	1.9%	1066.5
2008	0.4	0.0%	1072.5	98.1%	20.0	1.8%	1,092.9
2009	0.2	0.0%	897	98.0%	18	2.0%	915.2
2010	0.4	0.0%	1482.2	98.0%	30.0	2.0%	1,512.2
2011	0.4	0.0%	1530.2	98.7%	20	1.3%	1550.6

Source: CFO

#### Annex 5

##### Stock Estimates of Filipino migrants and workers in United Kingdom, in thousands, 2002-2011

	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	46.2	51.2%	35.8	39.6%	8.3	9.2%	90.3
2003	46.2	50.4%	38.3	41.8%	7.1	7.8%	91.6
2004	52.5	45.1%	56.3	48.4%	7.5	6.4%	116.3
2005	53	39.8%	72.6	54.5%	7.5	5.6%	133.1
2006	62.1	37.6%	93.4	56.6%	9.6	5.8%	165.1
2007	90.7	44.7%	102.4	50.4%	10	4.9%	203.1
2008	91.2	44.8%	102.3	50.3%	10.0	4.9%	203.5
2009	91.9	45.7%	99.1	49.3%	10	5.0%	201
2010	92.7	47.1%	94.1	47.8%	10.0	5.1%	196.8
2011	160	72.7%	35	15.9%	25	11.4%	220

Source: CFO

#### Annex 6

##### Stock Estimates of Filipino migrants and workers in Japan, in thousands, 2002-2011

Year	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	71.4	24.9%	138.5	48.4%	76.6	26.7%	286.5
2003	77.3	25.4%	197.3	64.8%	30.1	9.9%	304.7
2004	83.3	23.6%	238.5	67.5%	31.4	8.9%	353.2
2005	115	40.3%	139.8	49.0%	30.6	10.7%	285.4
2006	124.7	48.1%	103.6	40.0%	30.7	11.9%	259.0
2007	133.5	65.9%	38.3	18.9%	30.7	15.2%	202.5
2008	141.2	60.9%	60.0	25.9%	30.7	13.2%	231.9



2009	146.5	69.5%	29.6	14.0%	34.6	16.4%	210.7
2010	150.3	51.8%	127.3	43.8%	12.8	4.4%	290.4
2011	154.2	69.8%	57.3	26.0%	9.3	4.2%	220.8

Source: CFO

### Annex 7

#### Stock Estimates of Filipino migrants and workers in UAE, in thousands, 2002-2011

Year	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	0.4	0.2%	172.8	89.4%	20	10.4%	193.2
2003	0.4	0.2%	185.6	90.1%	20.0	9.7%	206.0
2004	0.4	0.2%	231.8	91.9%	20	7.9%	252.2
2005	0.4	0.1%	291.4	93.5%	20.0	6.4%	311.8
2006	0.4	0.1%	291.4	93.5%	20.0	6.4%	311.8
2007	0.7	0.1%	493.4	93.3%	35	6.6%	529.1
2008	0.7	0.1%	541.7	94.3%	32.0	5.6%	574.4
2009	1.7	0.3%	576	94.5%	32	5.2%	609.7
2010	1.7	0.3%	606.4	95.3%	28.0	4.4%	636.1
2011	1.7	0.3%	658.3	96.8%	19.8	2.9%	679.8

Source: CFO

### Annex 8

#### Stock Estimates of Filipino migrants and workers in Hongkong, in thousands, 2002-2011

YEAR	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	0.4	0.2%	171.5	98.6%	2.0	1.2%	173.9
2003	0.4	0.2%	185.5	98.5%	2.5	1.3%	188.4
2004	0.4	0.2%	194.2	98.4%	2.7	1.4%	197.3
2005	11.6	6.4%	166.4	91.9%	3	1.7%	181
2006	11.5	8.4%	121.6	89.3%	3.0	2.2%	136.1
2007	11.5	8.8%	116.1	88.9%	3	2.3%	130.6
2008	23.5	15.1%	125.8	81.0%	6.0	3.9%	155.3
2009	23.5	13.9%	140	83.1%	5	3.0%	168.5
2010	23.5	13.8%	141.2	83.2%	5.0	2.9%	169.7
2011	13.3	7.6%	156.6	89.5%	5	2.9%	174.9

Source: CFO

### Annex 9

#### Stock Estimates of Filipino migrants and workers in Singapore, in thousands, 2002-2011

YEAR	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	0.2	0.1%	56.4	43.9%	71.9	56.0%	128.5
2003	0.2	0.2%	58.2	44.7%	71.9	55.2%	130.3
2004	0.2	0.1%	64.3	47.1%	72.0	52.7%	136.5
2005	26	19.7%	68.7	51.9%	37.6	28.4%	132.3
2006	11.5	8.4%	121.6	89.3%	3.0	2.2%	136.1
2007	11.5	8.8%	116.1	88.9%	3	2.3%	130.6
2008	23.5	15.1%	125.8	81.0%	6.0	3.9%	155.3

2009	23.5	13.9%	140	83.1%	5	3.0%	168.5
2010	23.5	13.8%	141.2	83.2%	5.0	2.9%	169.7
2011	13.3	7.6%	156.6	89.5%	5	2.9%	174.9

*Source: CFO*

## **Annex 10**

### **Stock Estimates of Filipino migrants and workers in Italy, thousands, 2002-2011**

YEAR	Permanent	% of Total	Temporary	% of Total	Irregular	% of Total	Total
2002	3.4	2.3%	70.0	46.2%	78.0	51.5%	151.4
2003	4.1	3.3%	70.1	56.4%	50	40.3%	124.2
2004	4.9	3.5%	85.53	61.8%	48.0	34.7%	138.4
2005	22.2	18.0%	81.2	65.8%	20	16.2%	123.4
2006	23.1	18.0%	85	66.4%	20.0	15.6%	128.1
2007	24.6	20.5%	82.5	68.7%	13	10.8%	120.1
2008	27.0	23.1%	77.1	65.8%	13.0	11.1%	117.1
2009	29.7	24.9%	76.8	64.3%	13	10.9%	119.5
2010	33.1	26.8%	77.1	62.5%	13.2	10.7%	123.4
2011	50	27.1%	99.8	54.1%	34.8	18.9%	184.6

*Source: CFO*

## Annex 11

### Annual Deployment of Temporary Workers (New Hires), Saudi Arabia 2005-2010

	2005	2006	2007	2008	2009	2010
<b>All Occupations- Total</b>	<b>64663</b>	<b>89777</b>	<b>96880</b>	<b>111801</b>	<b>123048</b>	<b>119275</b>
Administrative and Managerial	85	112	140	210	247	228
Agricultural	250	479		514	622	576
Clerical and Related Workers	843	1681	4062	3947	4376	2603
Production and Related Workers Transport	24016	38751	48510	52937	51934	54238
Professional Technical and Related Workers	11558	15481	20124	24504	27583	23568
Medical, Dental, Veterinary	550	721	890	1133		
Engineers	1260	2022	2129	2189	1997	2927
Nurses, Professional	4625	5640	6315	7955	9623	8513
Sales Workers	378	1348	995	1562	1311	1738
Service Workers	27,205	30456	18915	27960	36335	35080
Domestic and Household	9225	11896	2581	3079	6954	11582
Caretakers Building	4705	4449	2019	2820	2681	2303
Waiters, bartenders	2722	2968	2627	4963	4548	2766
Charworkers, Cleaner	3576	3973	3183	6684	6867	6869
Others not specified	706	2,817	4,134	167	640	1244

*Source: Philippine Overseas and Employment Administration (POEA)*

## Annex 12

### Summary Statistics for Untrended time series (1989Q1-2012Q4)

Summary Statistics (1989 Q1 -2012Q4)					
Variables	Observations	Mean	Std. Dev.	Min	Max
Remittances	96	2152.193	1603.63	211.78	5941.415
Philippines GDP	96	26719.4	14328.82	10594.85	71910.16
U.S. GDP	96	10600000	3405599	5360300	16400000
Saudi Arabia GDP	96	274807.8	177685.9	95022	7110
Canada GDP	96	952270.3	431018.7	539575.5	1853284
Japan GDP	96	4489089	766761.2	2841631	6134108
UK GDP	96	432148.7	155230.5	211674.3	744036

Hongkong GDP	96	41773.04	12733.75	15442.29	71898.33
Italy GDP	56	436806.1	106501.8	265509.6	615990.1

### Annex 13

#### Summary Statistics of Cyclical Components of time series (1989Q1-2012Q4)

Summary Statistics (1989 Q1 -2012Q4)					
Variables	Observations	Mean	Std. Dev.	Min	Max
Remittances	96	2152.193	1583.602	174.5356	5626.121
Philippines GDP	96	26719.4	14016.82	10578.14	64534.34
U.S. GDP	96	1.06E+07	3397721	5322122	1.62E+07
Saudi Arabia GDP	96	274807.7	174957.6	99266.24	722242.3
Canada GDP	96	952270.3	424298.9	564656.2	1857854
Japan GDP	96	4489089	676881.5	2742670	6153427
UK GDP	96	432148.7	148841	225494.1	637709.8
Hongkong GDP	96	432148.7	148841	225494.1	637709.8
Italy GDP	56	436806.1	99556.58	264877.1	537975.2

### Annex 14

#### Cointegration Tests for Remittances and Philippine GDP 1/

Lags	Model 2/	n	PHILUF 3/			PHILHP 4/		
			Z(t)	p-value	Reject Ho	Z(t)	p-value	Reject Ho
0	1	95	3.637 */	0.051	Yes	1.977	0.9986	No
	2	95	<b>3.637</b> */	0.0002	Yes	1.977	0.9745	No
	3	95	3.722 */	0.029	Yes	7.869	1.0000	Yes
1	1	94	2.467	0.1237	No	<b>10.88</b> */	0.0000	Yes
	2	94	<b>2.467</b> */	0.0077	Yes	<b>10.88</b> */	0.0000	Yes
	3	94	2.320	0.4230	No	<b>7.266</b> */	0.0000	Yes
2	1	93	2.111	0.1237	No	0.898	0.1789	No
	2	93	2.111 **/	0.0188	Yes	0.019	0.1858	No
	3	93	1.858	0.6720	No	0.226	0.9959	No
3	1	92	1.272	0.6418	No	<b>4.217</b> */	0.0006	Yes
	2	92	1.272	0.1034	No	<b>4.217</b> */	0.0000	Yes
	3	92	0.480	0.9842	No	2.900	0.1622	No
4	1	91	1.984	0.2652	No	<b>3.333</b> */	0.0135	Yes
	2	91	1.984	0.7900	No	<b>3.333</b> */	0.0006	Yes
	3	91	1.606	0.7900	No	2.272	0.4495	No

1/ Null hypothesis is that remittances and Philippine GDP is not cointegrated

2/ Model 1 is pure random walk, Model 2 is pure random walk with drift, and Model 3 is pure random walk with deterministic trend

3/ Dependent variable is Nominal Remittances (untrended)

4/Dependent Variable is Nominal Remittances (trended)

\* denotes rejection at 5% significance level, \*\* denotes rejection at 10% level

PHILUF refers to untrended Philippine nominal GDP

PHILHP refers to cyclical component of HP filtered nominal GDP

### Annex 15

#### Cointegration Test for Remittances and USA GDP1/

Lags	Model 2/	n	USUF 3/			USHP 4/		
			Z(t)	p-value	Reject Ho	Z(t)	p-value	Reject Ho
0	1	95	-2.514	0.1121	No	2.371	0.9990	No
	2	95	<b>-2.514</b> */	0.0068	Yes	2.371	0.9901	No
	3	95	-2.480	0.3379	No	4.075	1.0000	No
1	1	94	-1.161	0.6903	No	- <b>10.654</b> */	0.0000	Yes
	2	94	-1.161	0.1244	No	- <b>10.654</b> */	0.0000	Yes
	3	94	1.104	0.9284	No	- <b>10.772</b> */	0.0000	Yes
2	1	94	-1.144	0.6972	No	1.313	1.0000	No
	2	93	-1.144	0.1279	No	1.313	0.9038	No
	3	93	-1.071	0.9338	No	5.570	1.0000	No
3	1	93	-0.627	0.8649	No	-2.135	0.2308	No
	2	92	-0.627	0.2663	No	<b>-2.135</b> */	0.0178	No
	3	92	-0.523	0.9825	No	-1.185	0.9135	No
4	1	91	-0.680	0.8818	No	-2.050	0.2651	No
	2	91	-0.680	0.2491	No	<b>-2.050</b> */	0.0217	No
	3	91	-0.549	0.9812	No	-0.964	0.9188	No

1/Null hypothesis is that remittances and US' GDP is not cointegrated

2/Model 1 is pure random walk, Model 2 is pure random walk with drift, and

Model 3 is pure random walk with deterministic trend

3/Dependent variable is Nominal Remittances (untrended)

4/Dependent Variable is Nominal Remittances (trended)

\* denotes rejection at 5% significance level

## Annex 16

### Cointegration Test for Remittances and Japan GDP1/

Lags	Model 2/	n	JAPUF 3/			JAPHP 4/		
			Z(t)	p-value	Reject Ho	Z(t)	p-value	Reject Ho
0	1	95	1.638	0.4631	No	-1.893	0.3356	No
	2	95	<b>1.638</b> */	0.0524	Yes	-1.893	0.0308	No
	3	95	-2.84	0.2427	No	<b>-5.477</b> *	0.0000	Yes
1	1	94	1.313	0.6230	No	<b>-10.786</b> */	0.0000	Yes
	2	94	<b>-1.313</b> **/	0.0962	Yes	<b>-10.786</b> */	0.0000	Yes
	3	94	2.356	0.3101	No	<b>-9.590</b> */	0.0000	Yes
2	1	93	1.353	0.6047	No	-1.433	0.5664	No
	2	93	<b>1.353</b> **/	0.0898	Yes	<b>-1.433</b> */	0.0777	Yes
	3	93	2.710	0.2318	No	<b>-3.361</b> */	0.0568	Yes
3	1	92	1.149	0.6953	No	<b>-6.014</b> */	0.0000	Yes
	2	92	1.149	0.1269	No	<b>-6.014</b> */	0.0000	Yes
	3	92	2.535	0.3107	No	<b>-4.002</b> */	0.0077	Yes
4	1	91	1.743	0.4093	No	<b>-3.204</b> */	0.0198	Yes
	2	91	<b>1.743</b> */	0.0425	Yes	<b>-3.204</b> */	0.0010	Yes
	3	91	<b>3.513</b> */	0.0380	Yes	<b>-2.567</b>	0.2952	No

1/ Null hypothesis is that remittances and Japan's GDP is not cointegrated

2/ Model 1 is pure random walk, Model 2 is pure random walk with drift, and

Model 3 is pure random walk with deterministic trend

3/ Dependent variable is Nominal Remittances (untrended)

4/ Dependent Variable is Nominal Remittances (trended)

\* denotes rejection at 5% significance level, \*\* denotes rejection at 10% significance level

Annex 17

Cointegration Test for Remittances and Canada GDP1/

Lags	Model 1/	n	CAUF 3/			CAHP 4/		
			Z(t)	p-value	Reject Ho	Z(t)	p-value	Reject Ho
0	1	95	4.079 */	0.0001	Yes	<b>-3.067</b> */	0.0291	Yes
	2	95	4.079 */	0.0000	Yes	<b>-3.067</b> */	0.0014	Yes
	3	95	4.182 */	0.2877	Yes	-2.378	0.3913	No
1	1	94	<b>2.853</b> */	0.0511	Yes	<b>12.122</b> */	0.0000	Yes
	2	94	<b>2.853</b> */	0.0027	Yes	<b>12.122</b> */	0.0000	Yes
	3	94	2.898	0.1629	No	<b>12.902</b> */	0.0000	Yes
2	1	93	<b>3.214</b> */	0.0192	Yes	<b>-3.547</b> */	0.0000	Yes
	2	93	3.214	0.0009	No	<b>-3.547</b> */	0.0003	Yes
	3	93	<b>3.298</b> **/	0.0717	Yes	-3.034	0.1229	No
3	1	92	<b>2.591</b> **/	0.0948	Yes	<b>-4.442</b> */	0.0003	Yes
	2	92	<b>2.591</b> */	0.0656	Yes	<b>-4.442</b> */	0.0000	Yes
	3	92	2.583	0.2877	No	<b>-4.529</b> */	0.0014	Yes
4	1	91	<b>2.795</b> */	0.0590	Yes	<b>-3.562</b> */	0.0065	Yes
	2	91	<b>2.795</b> */	0.0032	Yes	<b>-3.562</b> */	0.0003	Yes
	3	91	2.583	0.2877	No	<b>-4.529</b> */	0.0014	Yes

1/Null hypothesis is that remittances and Canada's GDP is not cointegrated

2/Model 1 is pure random walk, Model 2 is pure random walk with drift, and Model 3 is pure random walk with deterministic trend

3/Dependent variable is Nominal Remittances (untrended)

4/Dependent Variable is Nominal Remittances (trended)

\* denotes rejection at 5% significance level, \*\* denotes rejection at 10% significance level

**Annex 18**

**Cointegration Test for Remittances and UK GDP 1/**

Lags	Model 2/	n	UKUF 3/			UKHP 4/		
			Z(t)	P-value	Reject Ho	Z(t)	P-value	Reject Ho
0	1	95	-1.535	0.5159	No	5.099	1.0000	No
	2	95	-1.535 */	0.064	Yes	5.099	1.0000	No
	3	95	-1.826	0.692	No	5.478	1.0000	No
1	1	94	-0.719	0.8417	No	<b>14.036</b> */	0.0000	Yes
	2	94	-0.719	0.2369	No	<b>14.036</b> */	0.0000	Yes
	3	94	-1.059	0.9356	No	<b>13.450</b> */	0.0000	Yes
2	1	93	-1.148	0.6956	No	3.661	1.0000	No
	2	93	-1.148	0.1270	No	3.661	0.9998	No
	3	93	-1.444	0.8474	No	5.261	1.0000	No
3	1	92	-0.443	0.3296	No	<b>-4.777</b> */	0.0010	Yes
	2	92	-0.443	0.3296	No	<b>-4.777</b> */	0.0000	Yes
	3	92	-0.774	0.9681	No	<b>-4.337</b> */	0.0028	Yes
4	1	91	-0.937	0.7157	No	-2.363	0.1525	No
	2	91	-0.937	0.1758	No	-2.363 */	0.0102	No
	3	91	-1.181	0.9143	No	-1.578	0.8008	No

1/Null hypothesis is that remittances and UK's GDP is not cointegrated

2/ Model 1 is pure random walk, Model 2 is pure random walk with drift, and Model 3 is pure random walk with deterministic trend

2/ Dependent variable is Nominal Remittances (untrended)

3/ Dependent Variable is Nominal Remittances (trended)

\* denotes rejection at 5% significance level



**Annex 19**

**Cointegration Test for Remittances and HK GDP 1/**

Lags	Model 2/	n	HKUF 3/		Reject Ho	HKHP4/		
			Z(t)	p-value		Z(t)	p-value	Reject Ho
0	1	95	<b>-3.652</b>	0.0048	No	<b>-3.259</b> */	0.0168	Yes
	2	95	-3.652	0.3200	No	<b>-3.259</b> */	0.0008	Yes
	3	95	-3.888	0.0126	No	<b>-8.179</b> */	0.0000	Yes
1	1	94	-3.032	0.3200	No	<b>-16.370</b> */	0.0000	Yes
	2	94	<b>-3.032</b> */	0.0016	Yes	<b>-16.370</b> */	0.0000	Yes
	3	94	<b>-3.337</b> */	0.0610	Yes	<b>-13.614</b> */	0.0000	Yes
2	1	93	-1.984	0.2935	No	0.017	0.9600	No
	2	93	<b>-1.984</b> */	0.0251	Yes	0.017	0.5069	No
	3	93	-2.445	0.3559	No	-0.162	0.9922	No
3	1	92	-1.433	0.5663	No	<b>-5.503</b> */	0.0000	Yes
	2	92	<b>-1.433</b> */	0.0777	Yes	<b>-5.503</b> */	0.0000	Yes
	3	92	-2.394	0.3828	No	<b>-6.162</b> */	0.0000	Yes
4	1	91	-1.662	0.4507	No	-2.435	0.1320	No
	2	91	<b>-1.662</b> */	0.0501	Yes	-2.435 **/	0.0095	Yes
	3	91	-2.474	0.3411	No	<b>-3.470</b> **/	0.0427	Yes

1/Null hypothesis is that remittances and UK's GDP is not cointegrated

2/ Model 1 is pure random walk, Model 2 is pure random walk with drift, and

Model 3 is pure random walk with deterministic trend

3/Dependent variable is Nominal Remittances (untrended)

4/Dependent Variable is Nominal Remittances (trended)

\* denotes rejection at 5% significance level, \*\* denotes rejection at 1% significance level

## Annex 20

Lags	Model 2/	n	SAUF 3/			SAHP 4/		
			Z(t)	p-value	Reject Ho	Z(t)	p- value	Reject Ho
0	1	95	<b>-5.100</b> */	0.0000	Yes	0.438	0.9829	No
	2	95	<b>-5.100</b> */	0.0000	Yes	0.438	0.6489	No
	3	95	<b>-5.347</b> */	0.0000	Yes	6.632	1.0000	No
1	1	94	<b>-2.933</b> */	0.0416	Yes	<b>-5.846</b> */	0.0000	Yes
	2	94	<b>-2.933</b> */	0.0021	Yes	<b>-5.846</b> */	0.0000	Yes
	3	94	-2.942	0.1491	No	<b>-3.791</b> */	0.0170	Yes
2	1	93	-2.930 */	0.0419	Yes	-1.213	0.6678	No
	2	93	-2.930 */	0.0022	Yes	-1.213	0.1141	No
	3	93	-0.143	0.1430	No	3.253	1.0000	No
3	1	92	-2.027	0.2747	No	-1.275	0.6404	No

## Cointegration Test for Remittances and Saudi Arabia GDP/1

	2	92	<b>-2.027</b> */	0.0228	Yes	-1.275	0.1028	No
	3	92	-1.768	0.7198	No	0.688	0.9970	No
4	1	91	-2.494	0.1171	No	-1.109	0.7115	No
	2	91	<b>-2.494</b> **/	0.0073	Yes	-1.109	0.1353	No
	3	91	-2.350	0.4064	No	0.779	1.0000	No

1/Null hypothesis is that remittances and SAUF's GDP is not cointegrated

2/ Model 1 is pure random walk, Model 2 is pure random walk with drift, and Model 3 is pure random walk with deterministic trend

\* denotes rejection at 5% significance level, \*\* denotes rejection at 10% significance level

3/Dependent variable is Nominal Remittances (untrended)

4/Dependent Variable is Nominal Remittances (trended)

## Annex 21

### Cointegration Test for Remittances and Italy GDP 1/

Lags	Model 1/	n	ITUF 2/			ITHP 3/		
			Z(t)	p-value	Reject Ho	Z(t)	p-value	Reject Ho
0	1	55	-0.778	0.8255	No	3.207	1.0000	No
	2	55	-0.778	0.2200	No	3.207	0.9989	No
	3	55	-1.369	0.8697	No	4.477	1.0000	No
1	1	54	-0.097	0.9497	No	<b>-16.37</b> */	0.0000	Yes
	2	54	-0.097	0.4614	No	<b>-16.37</b> */	0.0000	Yes
	3	54	-0.799	0.9657	No	<b>13.164</b> */	0.0000	Yes
2	1	53	-0.582	0.8750	No	0.017	0.9600	No
	2	53	-0.582	0.2817	No	0.017	0.5069	No
	3	53	-1.088	0.9311	No	-0.162	0.9220	No
3	1	52	-0.081	0.9513	No	<b>-5.503</b> */	0.0000	Yes
	2	52	-0.081	0.4677	No	<b>-5.503</b> */	0.0000	Yes
	3	52	0.551	0.9813	No	<b>-6.162</b> */	0.0000	Yes
4	1	51	-0.048	0.9544	No	-2.435	0.1320	No
	2	51	-0.048	0.4811	No	-2.435 */	0.0015	Yes
	3	51	-0.609	0.9785	No	-3.470 */	0.0427	Yes

1/Null hypothesis is that Remittances and Italy's GDP are cointegrated  
 / Model 1 is pure random walk, Model 2 is pure random walk with drift, and  
 Model 3 is pure random walk with deterministic trend

\* denotes rejection at 5% significance level

2/Dependent variable is Nominal Remittances (untrended)

3/Dependent Variable is Nominal Remittances (trended)