

The Macroeconomic Impact of Remittances In The Philippines¹

By

Cayetano W. Paderanga, Jr.

Abstract

Over the past twenty- five years, policy changes in the Philippines and global trends leading to market and financial integration have unleashed forces that are changing the country's economic structure. One of the most important effects is the increasing importance of overseas remittances to the Philippines. This paper looks at the macroeconomic and sectoral impact of remittances and how it has affected the country's ability to manage its finances. What are the dilemmas posed by robust remittance inflows to our policymakers? In what ways can the government harness this valuable resource? More importantly how can the government lessen its impact on rising inequality which may threaten the country's social fabric?

¹ Key tables and figures were updated.

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Introduction

Policy changes in the Philippines and global trends leading to market and financial integration over the last twenty-five years have unleashed forces that are changing the country's economic structure. One of the most important effects is the increasing importance of overseas remittances to the Philippines. This paper looks at the macroeconomic impact of remittances and how it has affected the country's ability to manage its finances.

The Philippines: Increasing Integration

Since the 1970's the Philippines has been undergoing structural reforms in an effort to achieve economic growth in the face of a relatively fast population increase. This effort was interrupted in late 1983 when the Philippines had to declare a debt moratorium. It had been unable to service all of its debts after a serious political crisis hit an economy already weakened by the 1979 oil crisis and the worldwide increase in interest rates. The reform effort was resumed in 1987 after the Aquino administration had taken over the government, although the process

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was slow as political controversies exemplified by several coup attempts hounded the new government.

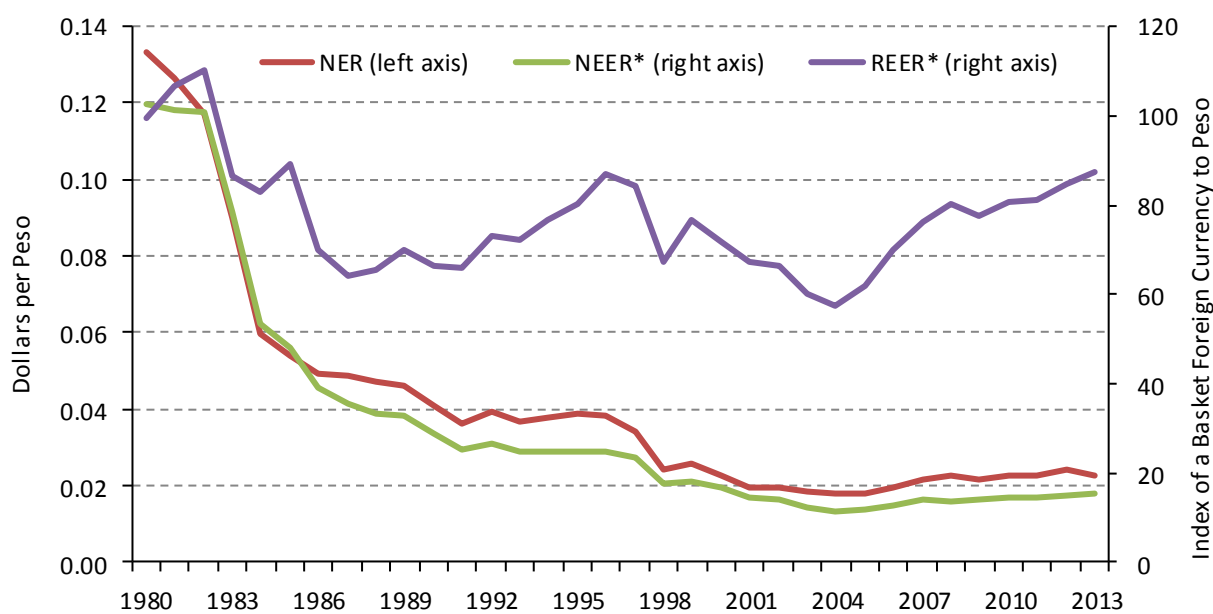
The opening of the economy re-started with the resumption of the trade liberalization policies. Further tariff reforms were also undertaken in 1991 partly in conjunction with negotiations in the ASEAN Free Trade Agreement and the Uruguay Round. Other changes included the liberalization of foreign investments, the facilitation of procurement (through build, operate and transfer (BOT) methods) and tax reform. These structural changes were rounded off with the full liberalization of the Philippine peso starting in November 1991 and ending on September 1992. The change in policy direction was emphasized when the Philippines signed the ASEAN Free Trade Agreement in January 1992.

The Ramos administration, which started in mid-1992, focused on the liberalization of domestic trade and transportation, investment and finance (including the restructuring of the central bank). Further efforts were made to accelerate privatization and deregulation and this commitment to trade reform was signaled by the country's ratification of the World Trade Organization agreement in 1994. This shift in policy direction generally continued in the succeeding Estrada and Arroyo administrations with only a few reversals.

Developments in External Balances and Exchange Rates

Full currency liberalization in 1991-92 and continuing trade liberalization led to increased participation by the country in trade and investment flows. These changes (contrary to the fears of businessmen and the labor sector) resulted in the appreciation of the Philippine peso. See **Figure 1** below.

Figure 1: Nominal Exchange Rate, Nominal and Real Effective Exchange Rate Indices

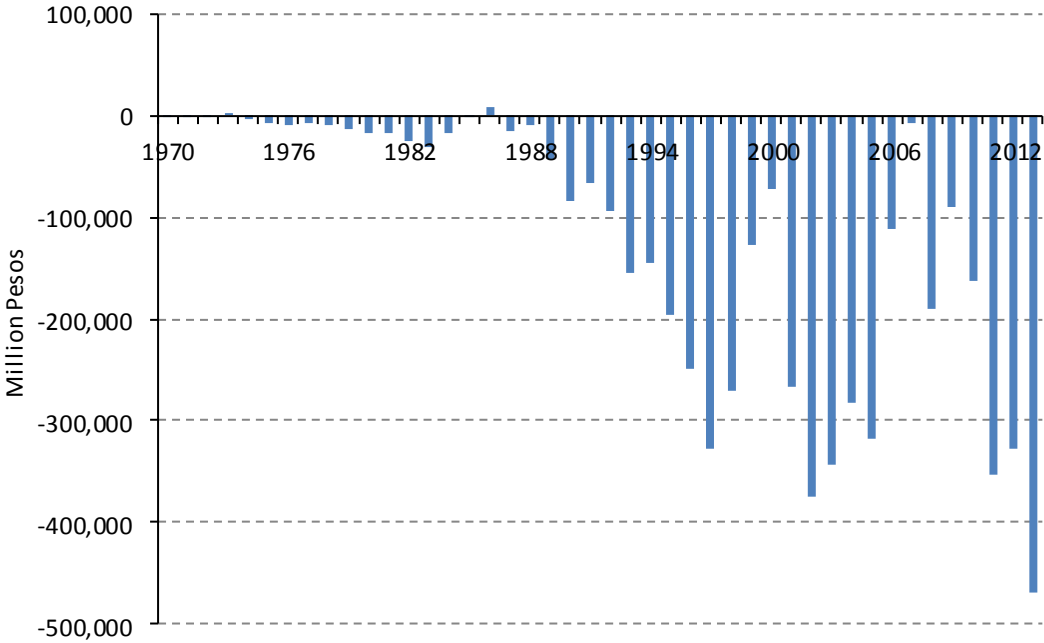


Source of raw data: *Bangko Sentral ng Pilipinas (BSP)*

Between 1980 and 1985 -- when foreign exchange market transactions were highly regulated - we note the steepest drop in nominal exchange rate and in both nominal and real effective exchange rate. The trade balance during this period was negative even though the liberalization program had been suspended. Still both the capital and financial accounts remained positive though at smaller levels due to tight controls. In 1985, quantitative restrictions were removed and tariff protection was rationalized. The reform, however, came at a time when the US economic growth rate slowed down from 7.2% in 1984 to 4.1% in 1985 and to 3.5% in 1986. For the Philippines, there was an initial surplus in the balance of trade as aggregate demand drastically declined with the deep economic recession of 1984-85 when the gross domestic product contracted by 7.32% in 1984 and 7.31% in 1985. With economic recovery starting in 1987 however, the balance of trade shifted to a persistent deficit that has lasted until the present except for two years soon after the Asian financial crisis when the nominal effective

exchange rate drastically depreciated and again in 2007. The real effective exchange rate index has been increasing from 1989 to 1999, at which point trade deficits ensued due to a decline in the country's cost competitiveness. (See bars in **Figure 2.**)

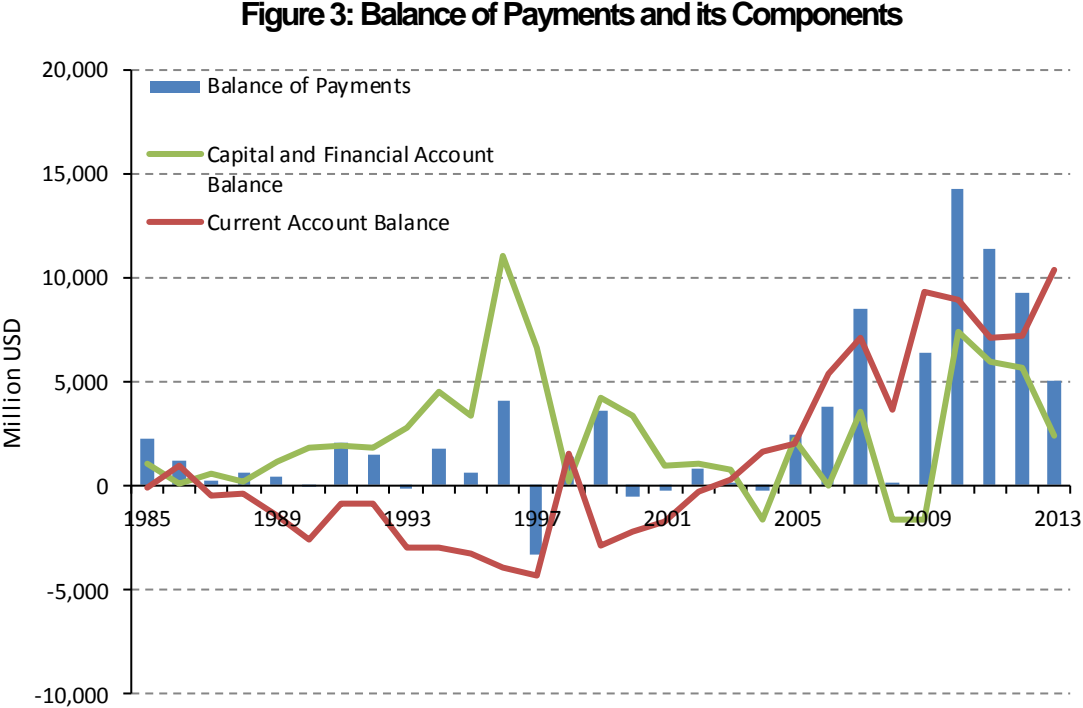
Figure 2: Balance of Trade



Source of raw data: National Statistical Coordination Board (NSCB)

The return of confidence in the Philippine government in 1986 revived the entry of official and private financial and capital flows, allowing the capital and financial balance to turn positive and to rise until the Asian financial crisis in 1997. Elimination of trade barriers in the 1990s, including the liberalization of the foreign exchange market, facilitated the depreciation of the peso against the US dollar. Meanwhile, capital account and foreign currency liberalization resulted in massive inflows of portfolio investment into the financial and real estate sector,

which sparked off an asset price bubble in Manila.³ **Figure 3** shows that capital and financial account balances reached record-high levels in 1996 and 1997.



Source of raw data: NSCB

On the negative side, capital account liberalization provided the means through which billions of dollars fled the country starting 1997. From a surplus of US\$ 6.593 billion (Php 194.3 billion) in 1997, the capital and financial account balance declined to US\$ 904 million (Php 36.97 billion) in 1998, proceeding into deficits since 2000. The balance became positive again in 2006 as portfolio investments returned to the region and to the Philippines.

Three phases of the balance of payments picture can be discerned in the last thirty years

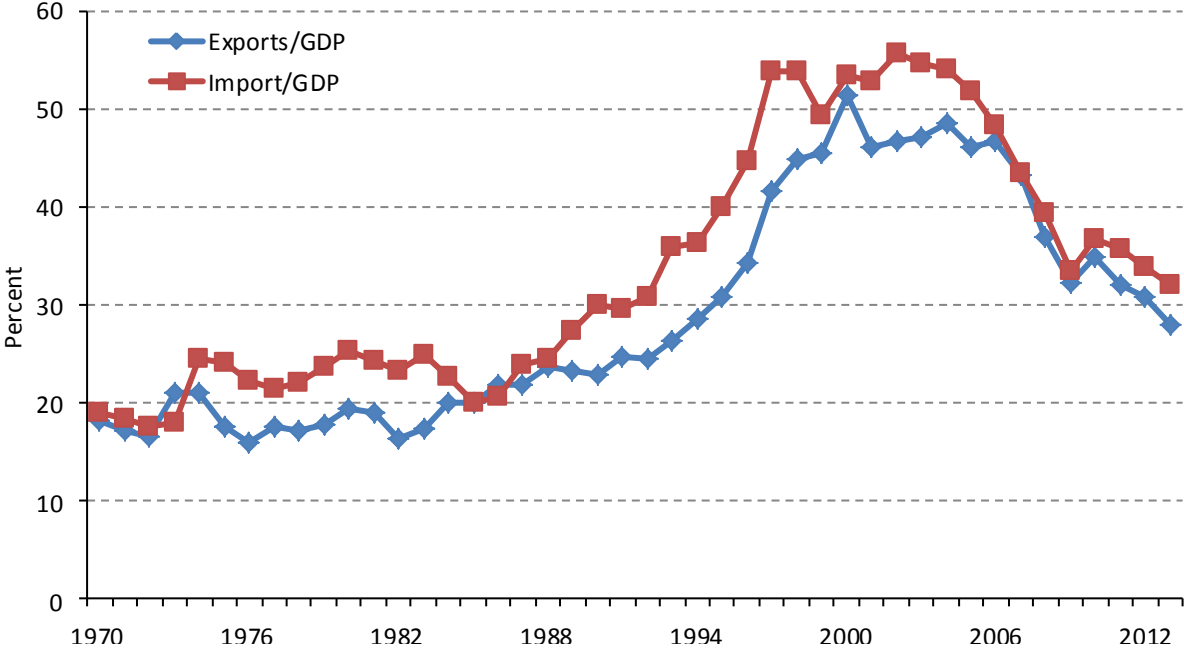
³ Bello, Walden. "Is the 'structural adjustment' approach really and truly dead?" Businessworld. November 8, 1999.

(**Figures 2 and 3**). The first phase, the pre-1986 period, was one of negative current account balance coming from relatively low negative balance of trade and an equally low positive capital and financial inflows. The second phase, 1986-1997, showed very strong growth in capital and financial inflows coupled with an increasingly large negative balance of trade. The balance of payments tended to be positive during this period. The third phase, from 1998 to the present, is characterized by large negative balances in both the balance of trade and in the capital and financial flows. During this last phase however, the current account has been comfortably positive due to strong positive transfers. As a result, the direction and magnitude of the overall balance of payments position in recent years has reflected that of the positive current account balance. The overall balance of payment position is not significantly affected by small movements in the capital and financial account levels and the decreasing rate of growth in gross domestic capital formation from 1996. Due to the Asian financial crisis, negative growth in fixed capital formation and changes in stock were realized in 1998 and 1999. After which, growth in investments has been flat.

An examination of the current account reveals how the Philippines shifted from chronic BOP deficit to an increasing surplus. **Figure 4** shows imports and exports as proportions of GDP. The graph indicates that except for very brief periods, the balance of trade has been negative. Despite this, the current account has shifted to an increasingly positive BOP balance. This positive BOP balance seems to persist in the face of fluctuating capital and financial flows (see **Figure 3**). The rising current account surplus in the face of a negative trade balance and fluctuating capital and financial flows can be traced to the rapidly accelerating inflow of remittances from overseas Filipino workers (OFWs). From 2003 to 2004, the International Monetary Fund (IMF) recorded growth of the current account balance at 465.28%. By this time, OFW remittances have grown by 12.8% to around US\$ 8.55 billion. With the perceived shift in

the nature of services rendered by OFWs to more knowledge-based ones, the growth of the current account surplus is expected to continue.

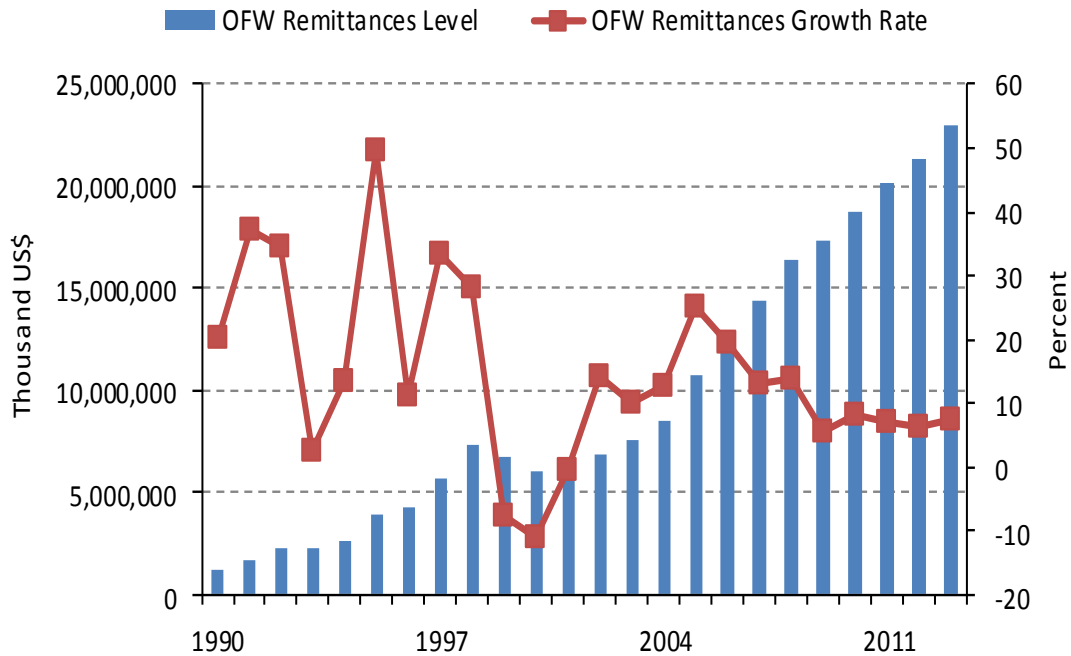
Figure 4: Exports and Imports (as % of Nominal GDP)



Source of raw data: NSCB

Recent observations indicate an outpacing of the annual growth of the number of deployed OFWs by the annual growth in remittances. Year-on-year growth of OFW deployment inched up by only 1.42% in 2007 while growth of OFW remittances reached 13.2%. **Figure 5** shows that the importance of remittances to the economy became apparent in 1998. Except for a break in 1999 (soon after the Asian financial crisis and at the start of political controversies that resulted in the ouster of the Estrada administration in 2001) when it declined absolutely and later on stagnating for two more years in 2000-2001, the growth of OFW remittances began accelerating in 2002.

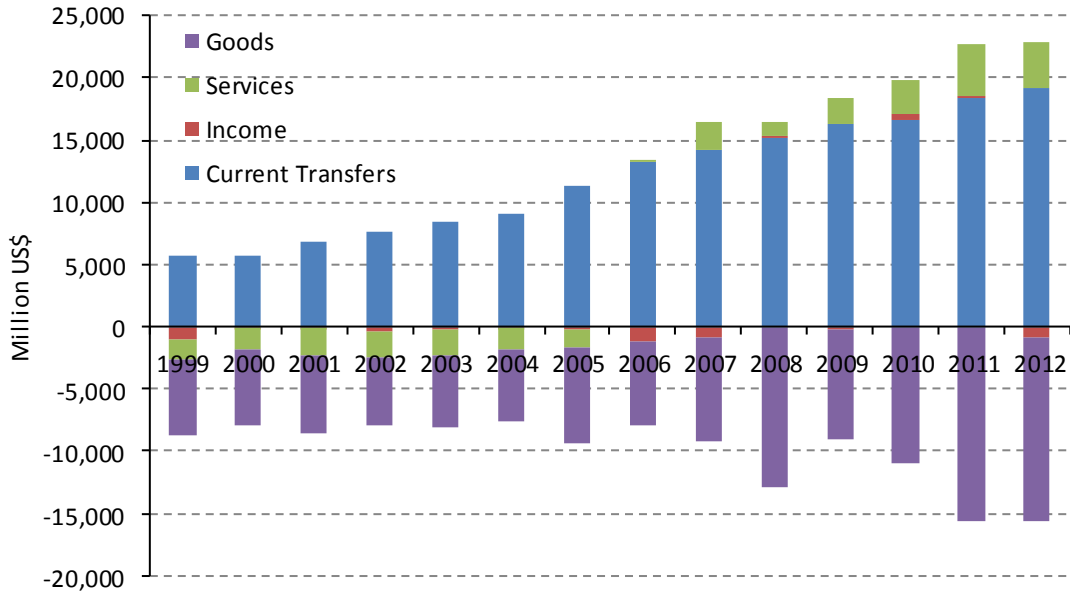
Figure 5: OFW Remittances (Trend and Growth Rate)



Source of raw data: NSCB

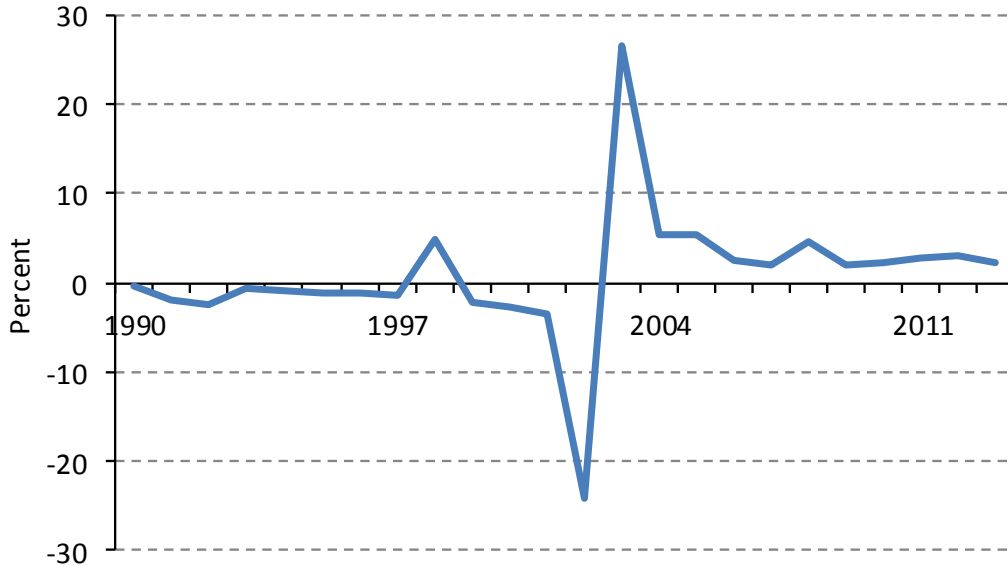
Figure 6 gives the breakdown of the Current Account into its components, where OFW remittances are classified under Current Transfers. OFW remittances account for almost half of the Current Account. The graph palpably indicates the dominance of transfers in the current account balance. **Figure 7** confirms this importance of current transfers. The timing of the remittances growth highlight the critical change introduced by the currency liberalization in 1991-92 which gave foreign exchange earners more leeway in the efficient use of their revenues.

Figure 6: Components of the Current Account



Source of raw data: NSCB

Figure 7: Ratio of OFW Remittances to Current Account Balance



Source of raw data: NSCB

In **Table 1** we examine the determinants of the current account size (as a percentage of GDP) as a function of the exchange rate, the net capital flows (as % of GDP) and GDP growth. The alternative formulation includes the logarithm of OFW remittances as an exogenous variable. The results show remittances to be a robust explanatory factor in the reversal of the current account from deficits to surplus (and the subsequent growth) in recent years.

Table 1: Regression Results for Current Account (% of GDP)

Dependent variable. Current Account as percentage of GDP

Period: 1980-2007

Exogenous Variables	Model (1)	Model (2)
Intercept	-2.912 (-1.806)	-21.774 (-4.835)
Net Capital Flows / GDP	-0.777 (-5.068)	-0.600 (-4.955)
Exchange rate change (%) (previous period)	0.221 (2.896)	0.214 (3.789)
GDP Growth	0.692 (2.485)	0.408 (1.880)
Log of Remittances		1.723 (4.344)
Adjusted R-squared	0.594	0.776
DW	0.934	1.505
AIC	5.404	4.840
SBC	5.598	5.082

Figures in parenthesis are t-statistics.

In **Table 2** we see how important OFW remittances have been to the level of the gross international reserves (GIR) as a percentage of GDP. This equation explains the percent

proportion of GIR to GDP as a function of the exchange rate (for the term on the exchange rate, a positive relationship shows that a depreciated nominal exchange rate increases the GIR level working through the international price-competitiveness of its exports) and OFW remittances. Inclusion of the logarithm of OFW remittances in the equation significantly improves the explanatory power of the model (increased adjusted r-squared from 83.7% to 88.4%) and manifests the very strong positive effect of these remittances.

Table 2: Regression Results for Gross International Reserves (% of GDP)

Dependent variable. Gross International Reserves as percentage of GDP

Period: 1980-2007

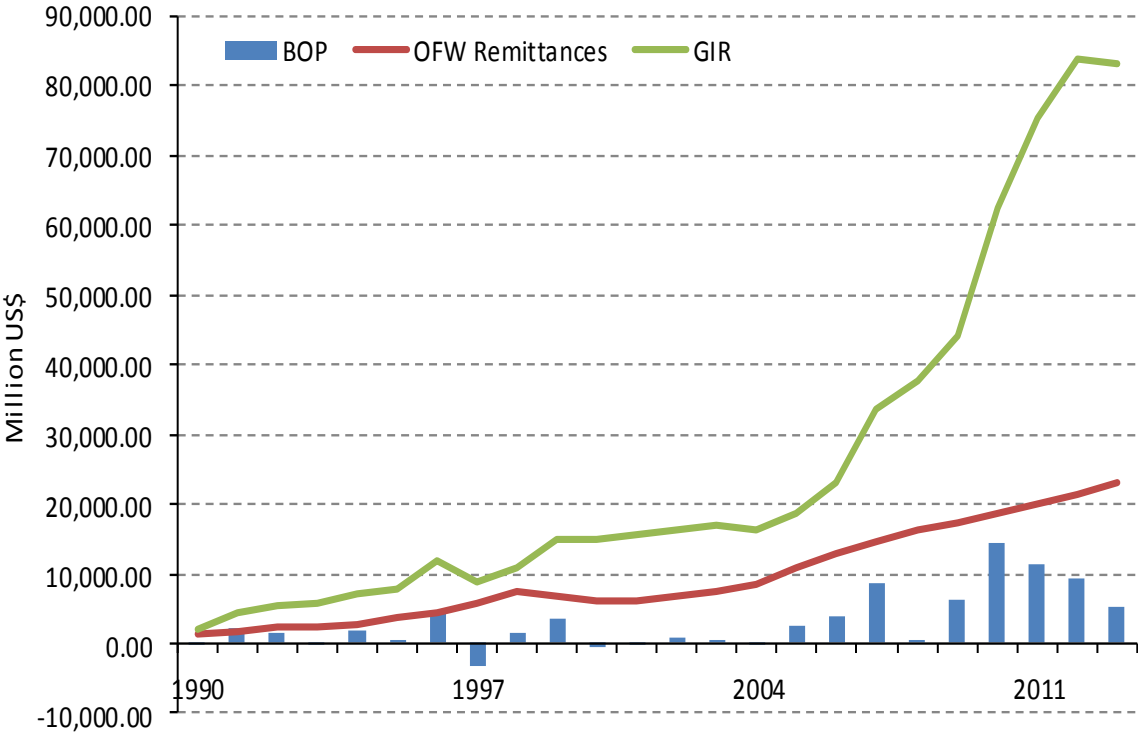
Exogenous Variables	Model (1)	Model (2)
Intercept	-1.977 (-1.259)	-25.461 (-3.395)
Exchange Rate	0.444 (10.549)	0.186 (2.114)
Log (Remittances)		2.800 (3.180)
Adjusted R-squared	0.837	0.884
DW	1.117	1.564
AIC	4.858	4.536
SBC	4.957	4.684

Figures in parenthesis are t-statistics.

Still, the effect of remittances is most visible in the relatively stronger peso. There has been considerable acceleration of the GIR's growth rate starting 2002. Along with the foreign currency deposit units (FCDUs) held by the central bank, the significantly increasing level of reserves inspires confidence in the country's ability to repay its short-term debts. This, in turn, enhances the country's credit rating. **Figure 8** presents the impact of OFW remittances on the

level of GIR and BOP.

Figure 8: OFW Remittances, GIR, BOP



Source of raw data: BSP

In recent years, the accelerating inflow of remittances into the country has perceptibly brought the BOP within much more manageable levels. From an expectation of BOP deficits, the anticipation has now shifted towards surpluses and a buildup of international reserves. **Table 3** shows how the share of net foreign assets to total assets has been increasing over time, particularly for the years after 2000. As a result investors, especially those engaged in portfolio management or balancing, gained confidence in the country's ability to pay its foreign liabilities and in its growth sustainability.

Table 3: Share of Net Foreign Assets to Total Assets, 5-year averages

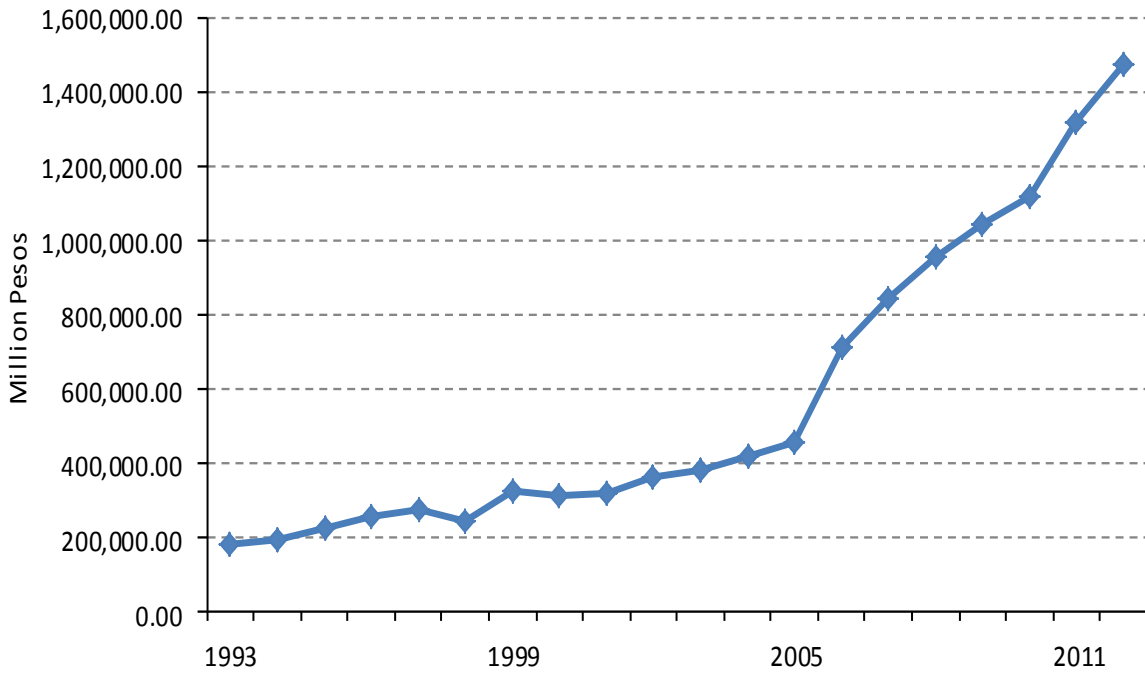
Year	5-Year Averages
1985	-75.3
1990	-57.7
1995	9.1
2000	8.7
2005	21.5
2010	47.83

Source of raw data: BSP

Remittances and the Money Supply

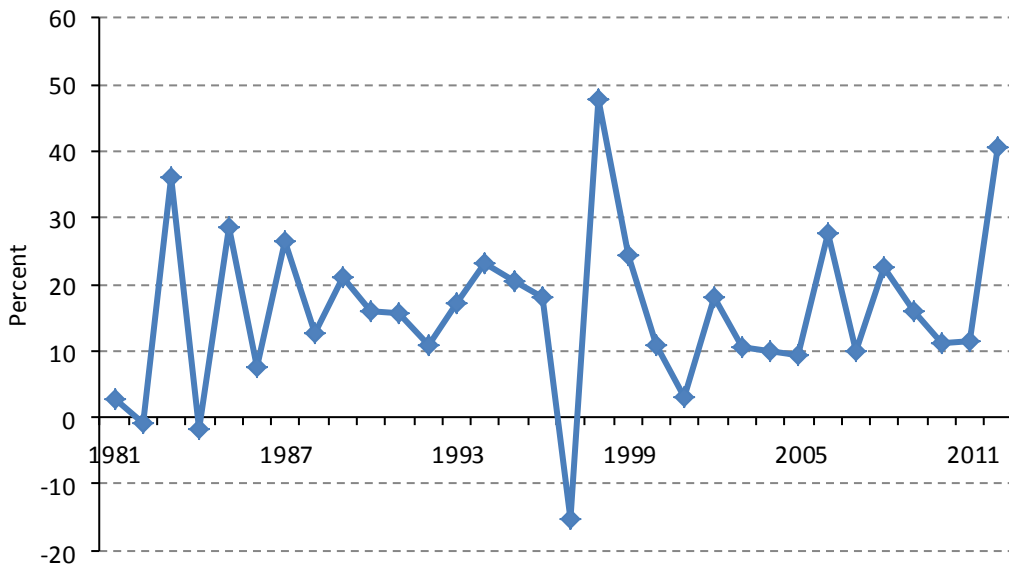
The effect of remittances on domestic monetary policy has been mixed. The inflow of net foreign assets into the country gave way to an inherent rise in the monetary base, complicating the central bank's ability in controlling the money supply. **Figure 9** shows how the monetary base (MB) has expanded in the last two and a half decades while **Figure 10** provides the growth rates for the same period. These graphs indicate that except for lapses in 1999 and 2006, the central bank has been able to contain the injection of liquidity which is indicated by the rising international reserve level. But this has been at considerable difficulty and cost, as we shall soon see.

Figure 9: Monetary Base (in million Pesos)



Source of raw data: BSP

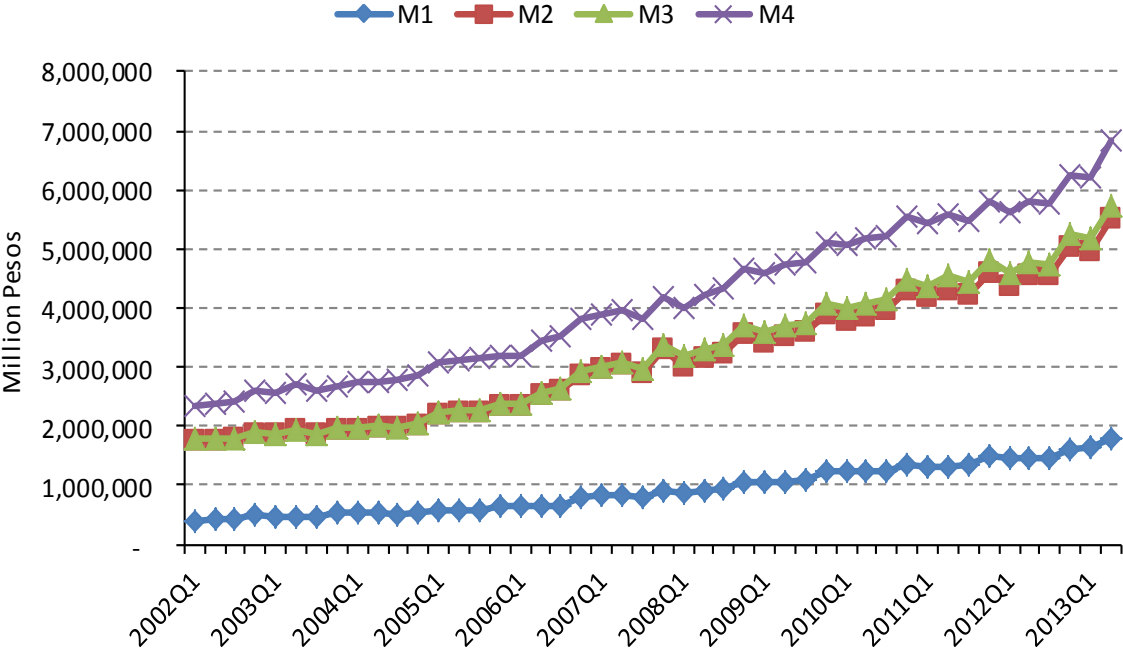
Figure 10: Monetary Base Growth Rate



Source of raw data: BSP

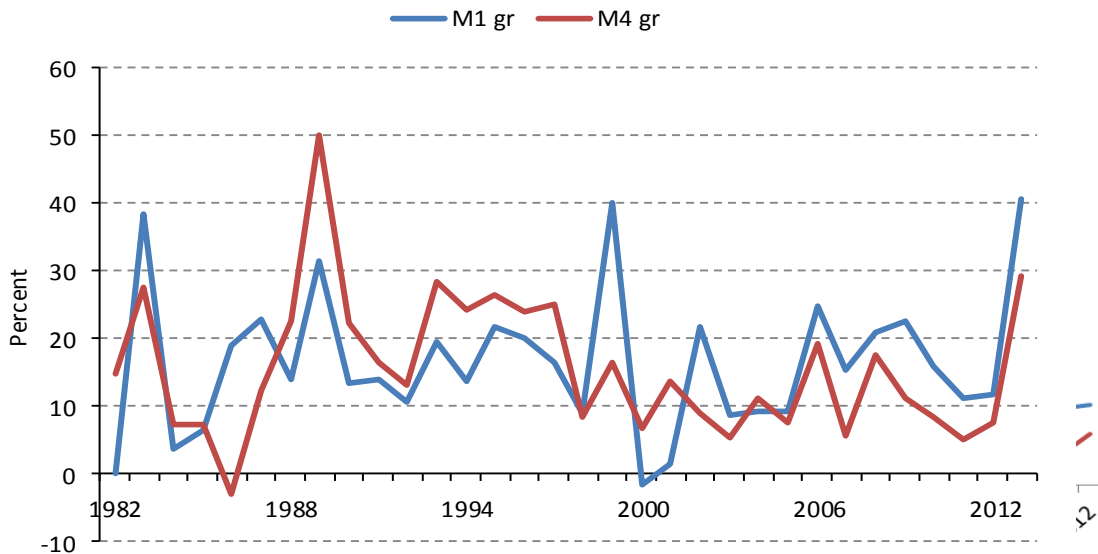
The figure below presents the monthly levels of money supply aggregates while **Figure 12** shows the annual growth rate of narrow money (M1) and broad money (M4). After a M1 growth spike in 1983 --- which probably led to subsequent monetary actions trying to stem 1984's deep recession --- money supply expansion have remained below 25% except in 1999 when M1 grew by around 40%. This coincided with the start of the marked increase in remittances seen for the period. During the last decade, the central bank has had to grapple with an underlying rise in the MB brought about by foreign exchange remittances.

Figure 11: Money Supply Aggregates



Source of raw data: BSP

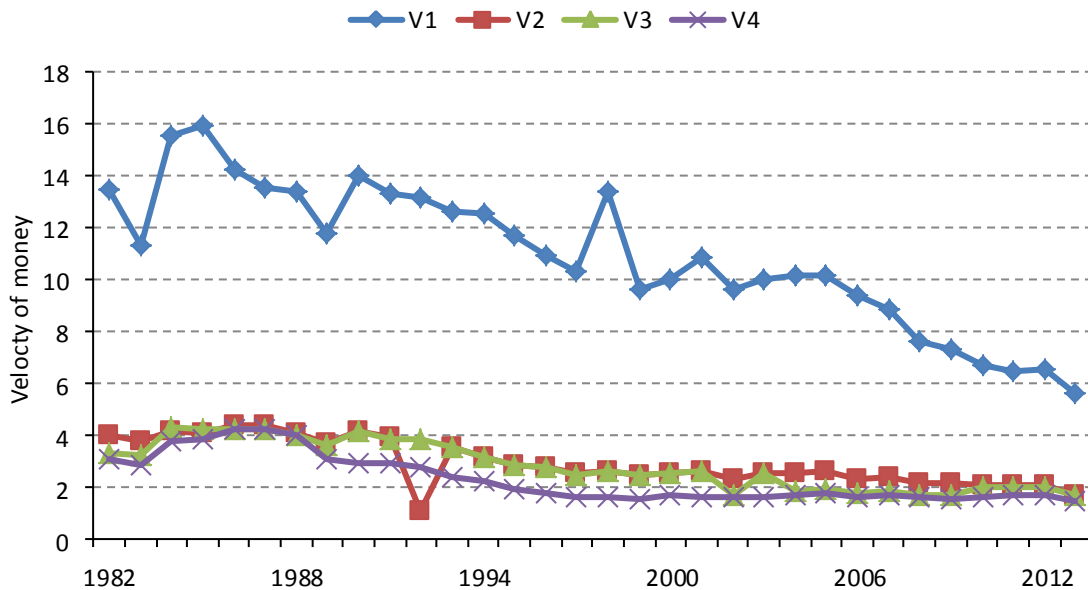
Figure 12: Money Supply Growth



Source of raw data: BSP

The solution was found in special deposit accounts (SDA's) that enlarged the definition of funds which could be deposited to the monetary authorities. The central bank had essentially run out of government securities that it had been using in its open market operations and later had to resort to SDA's to keep in check monetary growth. SDAs eliminated the ceiling on the central bank's ability in siphoning liquidity out of the monetary system. SDA interest rates were then set at a high-enough level, outbidding the private sector for securities up to the volume needed in mopping up liquidity. Since there was an underlying liquidity injection, crowding out was avoided. (In fact, it was in the interest of the public sector to keep interest rates low because of the large fiscal indebtedness). The high level of SDA deposit rates however still kept borrowing rates relatively higher than it would have been without the intervention. The drawback of SDAs comes from the large interest payments that the central bank now had to shoulder. Because of these activities, the velocity of money, especially of M1 which is closer to the MB in composition, has been on a downtrend (see **Figure 13**).

Figure 13: Velocity of Money



Source of raw data: BSP

Exports, Savings, Investments and Remittances

The downside of an appreciating currency however, is the decline in the country's cost competitiveness. This has had two effects on exports and on investments. The decrease in cost-competitiveness has resulted in exports not being much of a significant growth factor for the country in the last few years as indicated by **Figure 2**. The continuing tendency for the peso to strengthen has made the country's cost-competitiveness difficult to maintain.

The other effect has been the decline in the importance of investments. Asian neighbors, viewed as more cost competitive in wages and other inputs, are better havens for investments. This dilemma is shared by the manufacturing and export industries. This disadvantage also shows in the decreasing attractiveness of OFW deployment as the peso equivalent of foreign exchange earnings declines. This, of course, is connected to the general disincentive in

supplying traded goods and services as the domestic currency appreciates; the familiar phenomenon of "Dutch disease" brought about by the strengthening of the Philippine peso due to strong OFW inflows, no different from the disincentive effects on exports due to a propitious discovery of a natural resource endowment (such as oil, for example).

The impact of OFW remittances on the saving-investment (S-I) gap can be decomposed by its impact on both savings and investments. During the recent surge in remittances, we notice a drastic drop in investment simultaneously happening with a more gradual but firm increase in savings. The former may be partly traceable to the "Dutch disease" impact of remittances: as the domestic currency strengthened, the competitive position of domestic production in the Philippines suffered. Producing goods outside the country has become more attractive compared to local production even if labor has to be shipped out to overseas locations (Political turmoil arising from legitimacy issues was also occurring but we are unable to break down the effects into separate components).

The other important effect of remittances is on the saving side of the gap. Remittances have greatly expanded the resources available to the economy: first going into the demand for goods and services and, after that, available for saving by both the workers and by the corporate sector experiencing larger profits due to the higher effective demand for their products. **Table 4** shows the logarithm of savings as a function of the real interest rate and the GDP growth rate initially. In Model 2, we include the logarithm OFW remittances whose positive coefficient indicates the beneficial impact of remittances. The inclusion of the variable significantly improved the adjusted r-squared from 25.1% to 95.3%.

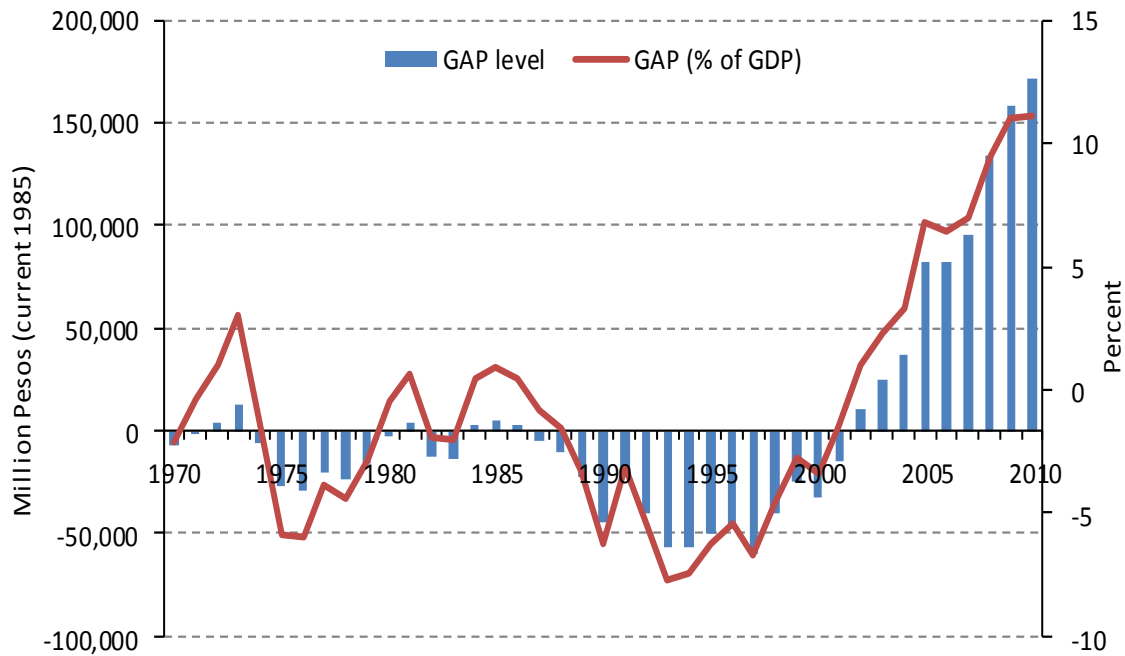
Table 4: Regression Results for LOG(Savings)
 Dependent variable. Logarithm of Savings (LOG(Savings))
 Period: 1980-2007

Exogenous Variables	Model (1)	Model (2)
Intercept	12.326 (63.723)	6.908 (23.720)
Real Interest Rate	-0.051 (-1.884)	-0.022 (-3.208)
GDP Growth	14.267 (3.209)	3.707 (2.963)
Log (Remittances)		0.503 (18.867)
Adjusted R-squared	0.251	0.953
DW	0.346	0.563
AIC	2.388	-0.340
SBC	2.532	-0.148

Figures in parenthesis are t-statistics.

Figure 14 shows the savings-investment gap as percentage of the country's nominal GDP. This has been significantly negative starting 1989 up to 2002, even reaching negative territory at around -5%. The gap has dramatically increased since 2002, reaching its peak at 7% (as percentage of GDP) in 2008, mainly due to the falling investment rate. Unfortunately investment into the country has been on a downtrend since 2001.

Figure 14: Savings-Investment Gap



Source of raw data: NSCB

The ultimate impact of remittances is captured in **Table 5**, showing the proportion of the S-I gap to GDP as a function of the interest rate, the exchange rate, the logarithm of GDP, the logarithm of money supply M3, and OFW remittances (as % of GDP). As in the previous regression results, the significant positive coefficient indicates the beneficial effect of the remittances-to-GDP (for the previous year) ratio.

Table 5: Regression Results for S-I Gap (% of GDP)

Dependent variable. Savings-Investment Gap as percentage of GDP

Period: 1980-2007

Exogenous Variables	Model (1)	Model (2)
Intercept	-484.108 (-6.430)	-448.807 (-6.210)
Log (GDP)	52.394 (7.895)	50.638 (8.135)
Exchange Rate	0.326 (4.620)	0.303 (4.553)
Log (M3)	-17.781 (-11.424)	-18.883 (-12.135)
91-day Treasury Bill	-0.454 (-3.762)	-0.398 (-3.431)
Remittances / GDP (previous year)		0.633 (1.897)
Adjusted R-squared	0.912	0.924
DW	1.777	1.849
AIC	4.119	3.999
SBC	4.368	4.297

Figures in parenthesis are t-statistics.

II. External Adjustment under Integration

Increasing integration's effects on the Philippines has flowed into several channels. On the real side, it has allowed for decent growth in recent years despite various shocks that have hit the economy. While the growth has been consumption-oriented, it provided alternative choices for the direction of growth. Integration has also eased the immediate foreign exchange pressures for adjustments that would otherwise have had to be made under less flexible environments.

Commodity and factor market integration to the outside world coupled with the loosening of foreign exchange controls in 1991 essentially disengaged the production and consumption constraints for the economy. The continued liberalization of the product markets, restarted in 1987, and the tariff reform packages during the same period opened more production and consumption alternatives for the domestic economy. The ensuing openness however also put pressure on mature industries with inefficient technologies that had been protected over the many years after World War II. This led to significant de-industrialization and hollowing out that placed the industrial sector under tremendous pressure. On the other hand, openness provided alternative opportunities for the different factors. Thus, while the returns to land and capital in the traditional industries declined, the mean return to labor (i.e. weighted average between domestic and foreign employment) increased and capital and land flowed to new industries. Unfortunately, the supply elasticity in the new industries was stymied by governance issues and the "Dutch disease" phenomenon mentioned above.

While labor flows had been significant since the 1970's, the relaxation of foreign exchange controls allowed overseas Filipino workers to plan their careers and family finances on the basis of finding work overseas. As a result, the composition of overseas Filipino workers shifted towards higher-skill levels and higher remittances per worker. The strong growth in remittance inflows further increased the attraction of deploying the economy's excess labor abroad. This has proved beneficial to foreign employers even as political uncertainties and governance issues continue to hound the country. Some investment may have been made for servicing the continuing deployment of these overseas workers and minor ancillary industries but it is not of significant volume.

The net result has been the decoupling of the production and consumption sides of the economy. This means that the saving and investments trade-offs are no longer made on the basis of the price ratios of the domestic production-possibility frontier but have essentially been shifted to world price ratios. This has allowed the evolution of the saving-investment picture where saving has increased while investment (as a response to comprehensive rate-of-return calculations incorporating large uncertainty and governance premiums) has remained rather timid. Thus, saving may now be largely based on family saving-consumption factors that do not necessarily respond to the opportunities of domestic investment. Unfortunately, the investment has involved largely home building and consumer durables. It was only recent that banks, insurance companies, investment funds and others have developed investment vehicles mobilizing remittance money.

The OFW phenomenon has had negative effects on employment. The availability of overseas employment opportunities may have raised the reservation wage to a level that makes it difficult attaining full employment. The remedy for this "Dutch disease" effect requires significant improvements in human capital formation and administrative governance.

The brief summary of the real side effects of integration would include improved and stable growth prospects, some easing of the saving-investment gap, and increased saving. However, it would include some negative impact on employment and a wrenching adjustment process that is being manifested in the changing industrial structure of the economy.

Philippine International Finances

The presence of OFW remittances has substantially eased the financial constraints for the Philippines. Accelerating inflow of these remittances has led to the appreciation of the Philippine currency. This has had two effects: first, it has drastically reduced the price competitiveness of domestic products for both export and domestic consumption and, second, brought about a large and persistent balance of trade deficit but an increasing current account surplus. Thus, product market integration has allowed the economy to import both final and intermediate products from other countries and capital market integration, through the liberalized inflow of foreign currency, has allowed the separation of exports and imports without the pressing need for the exchange rate adjustments. A large trade deficit brought about by the disadvantages of export price weakness and the affordability of imports has been financed by a large financial inflow of remittances.

The inflow of remittances also injected significant liquidity in the economy that the authorities have had difficulty in sterilizing. However, the disappearance of exchange rate uncertainty and the increased liquidity have allowed interest rates to remain low. The resulting appreciation of the currency has also helped to keep inflation low (until the recent cost-push shock of high oil and cereal prices).

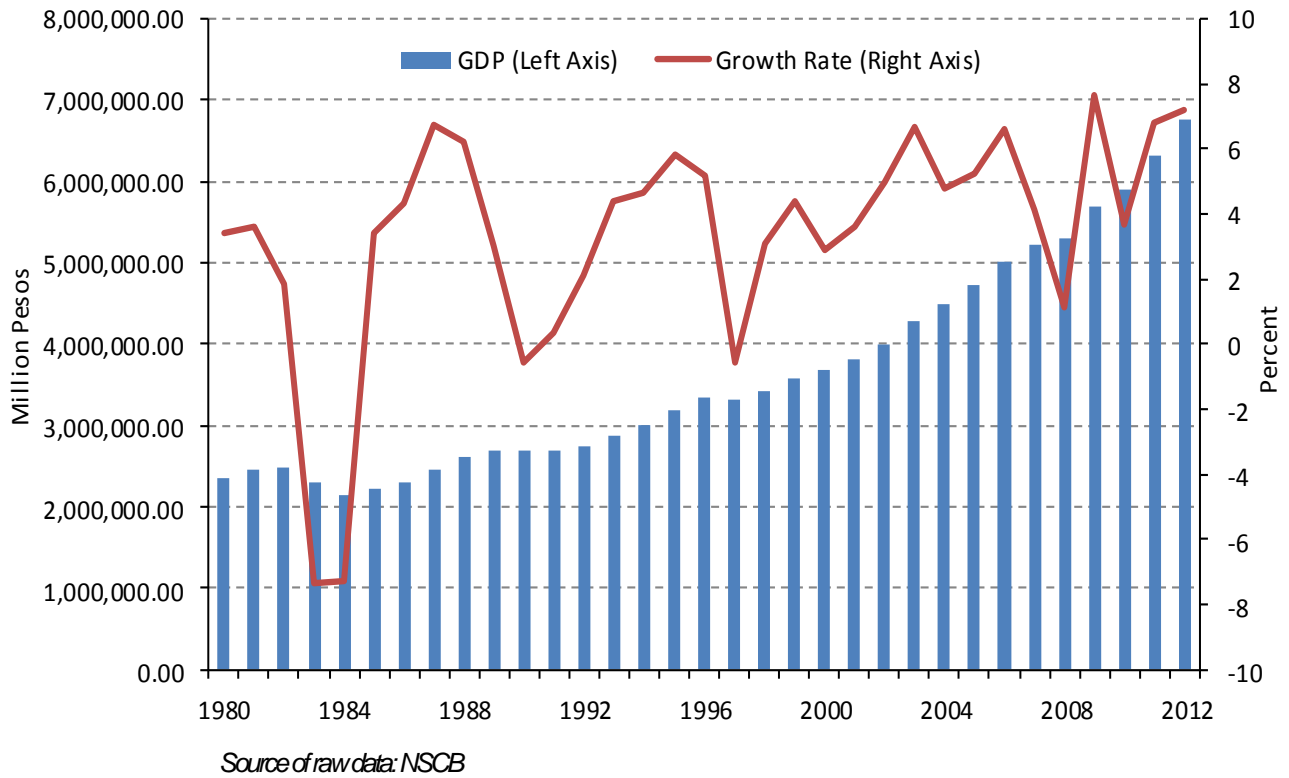
This benign macroeconomic environment has, unfortunately, not resulted in cascading beneficial economic changes. Partly because of weak governance, low confidence and poor infrastructure, investment has been visibly sluggish. Thus, new industries have had difficulty developing. At the same time, old industries have been squeezed by the competitive shock of an open economy and the appreciation of the currency. This pincer movement has caught the economy in vice, unable to grow even with increasingly available investment funds. This has

reduced the multiplier effect that one would have expected from the inflow of OFW remittances. Finally, the increase in reservation wages in the economy coupled with slow industry growth has reduced the potential for employment in a growing economy. The level of unemployment has proven stubbornly difficult to reduce.

III. Sectoral Growth and Composition

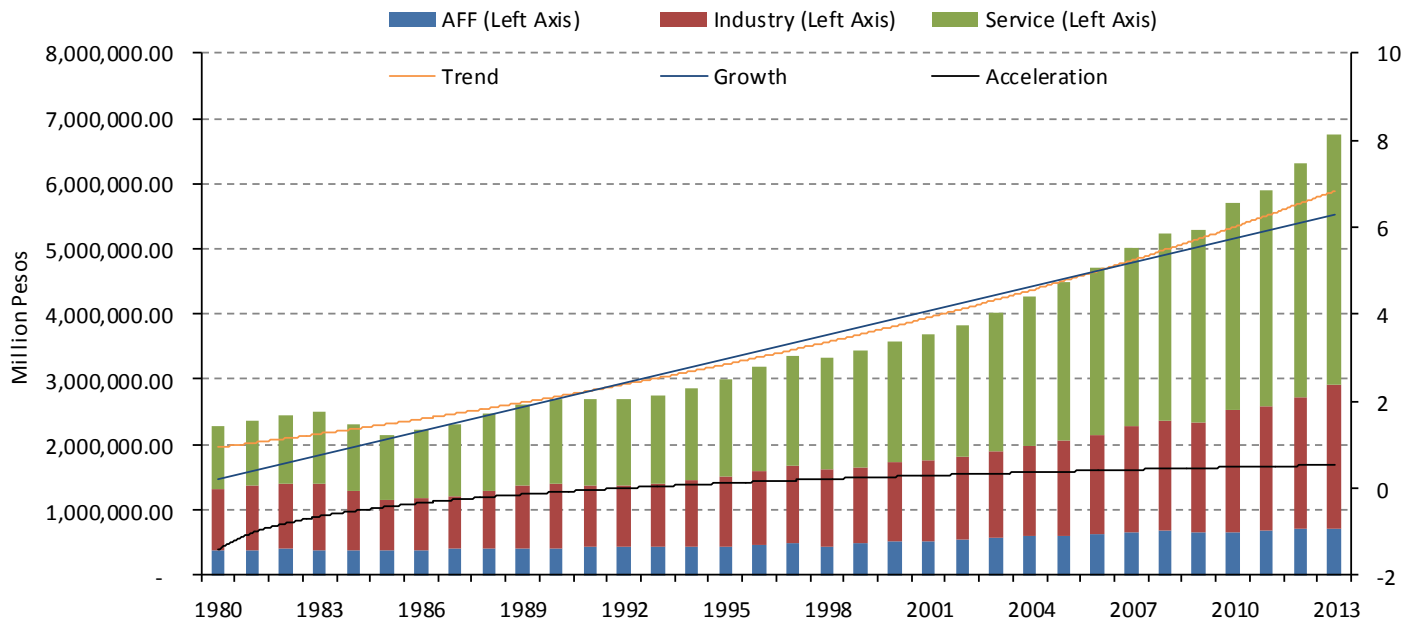
The effect of remittances on the Philippine economy is also reflected in the differential growth of industrial sectors. Various reform efforts have led to changes in sector growth and composition. Continued regulation of the foreign exchange market that stymied access to foreign resources in the early 1980's, followed by structural adjustment focusing on trade liberalization (through the removal of quantitative restrictions and lowering of tariff protection) at the time the country's main market, the United States, was undergoing an economic downturn, resulted in a significant drop in the real GDP growth. This contributed to the economic contraction in 1984 and 1985. **Figure 15** shows how, after an initial dip in the growth rate of the gross domestic product, right after the Asian Financial crisis, the economy has started to grow at an accelerating rate since 2002. In fact, the Philippine growth rate appears to have settled on a stable, higher growth path.

Figure 15: GDP Levels and Growth



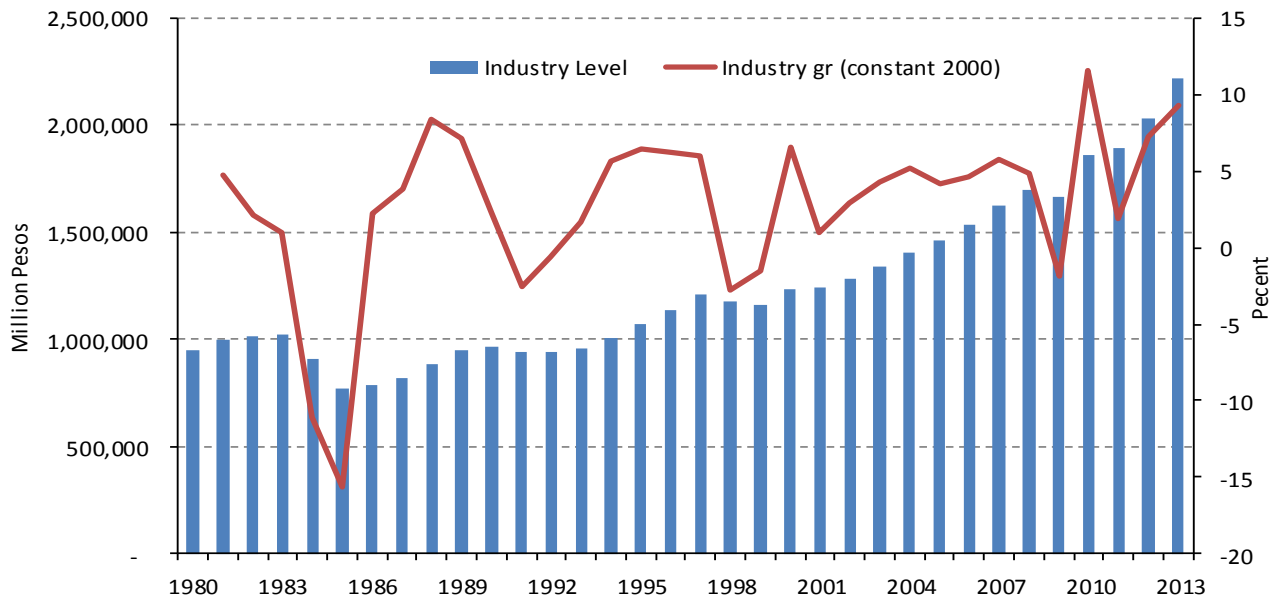
All broad industrial sectors - Agriculture, fishery and forestry, Industry, and Services - have been expanding output levels (See **Figure 16**). In terms of the distribution of the economy's growth, **Figure 16** indicates that the contribution of the Services sector has been increasing over time. Meanwhile **Figures 17 to 19** show the levels and growth rate of the broad sectors.

Figure 16: GDP per Broad Industrial



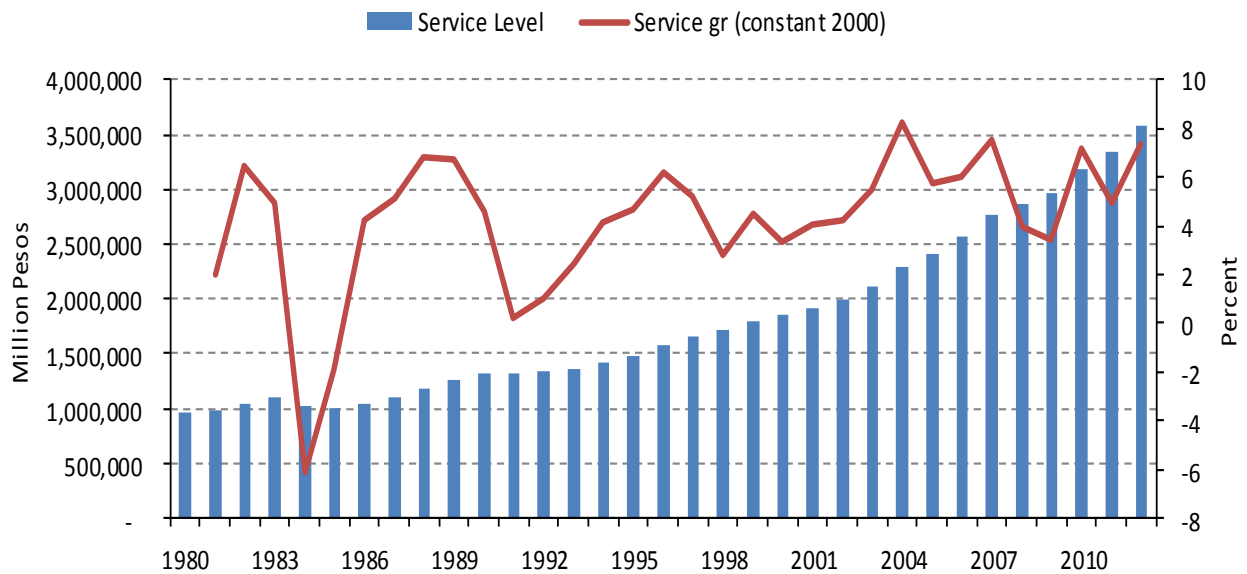
Source of raw data: NSCB

Figure 18. Levels and Growth Rate of Industry Sector



Source of raw data: NSCB

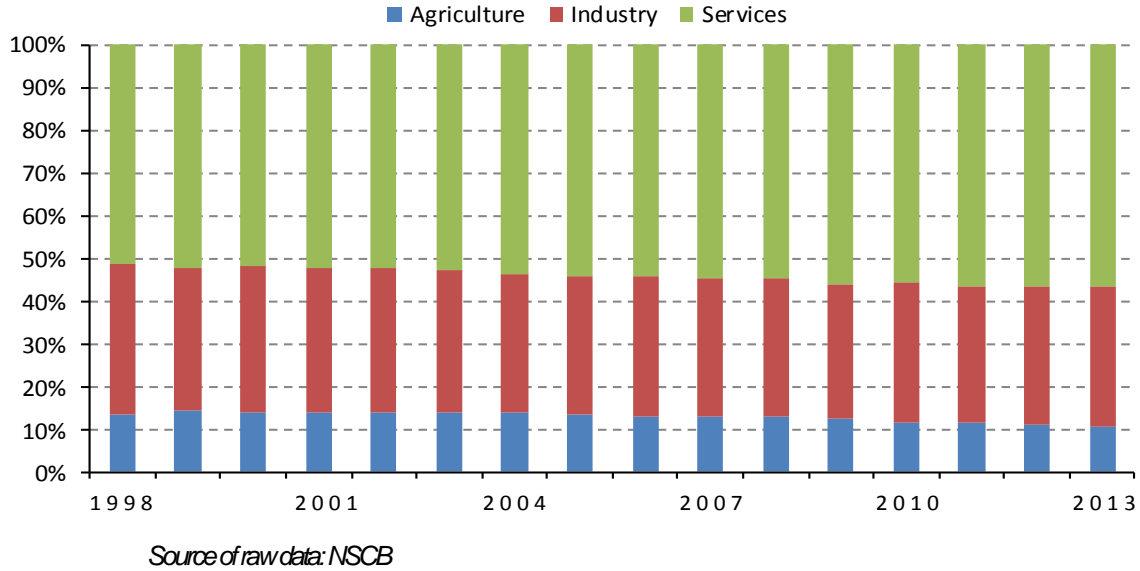
Figure 19. Levels and Growth Rate of Services Sector



Source of raw data: NSCB

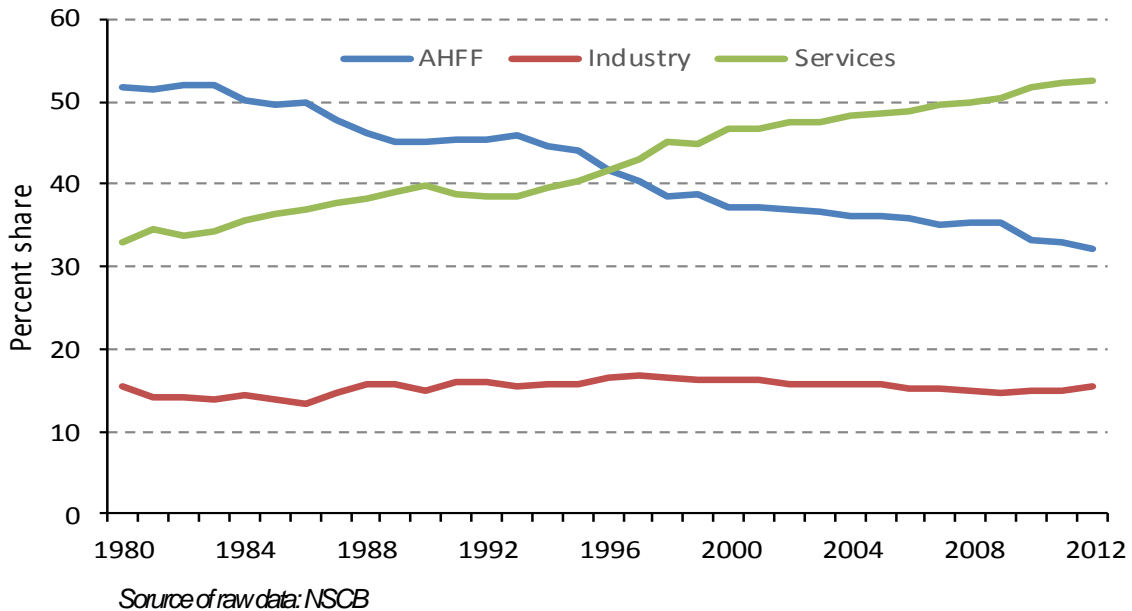
Figure 20 shows the contribution of the broad industrial sectors. In 1980, the share of the Industry and Services sectors reached 35.98% and 40.52%, respectively with the AFF sector making up for the remaining 23.50%. In less than two decades, the services sector now dominates the country's GDP. In 2007 nearly half of the GDP growth was attributed to the Services sector -at 49.23%. Meanwhile, the industry and AFF sector's share reached 23.55% and 18.36%, respectively.

Figure 20: Contribution of Broad Industrial Sectors to GDP Growth



The shift in economic structure is also seen in the distribution of the country's labor force. Recently, Services employ around half of the labor force. As of January 2008, 50.2% of the workers are in Services, 35.0% in Agriculture, and 14.8% in Industry. Meanwhile **Figure 21** provides the employment shares of the different industries.

Figure 21: Employment Shares by Industry



The boom in employment in the Services sector is attributed to the continuous expansion in Private Services, which includes outsourcing and offshoring activities, and in Trade.

Growth in production sectors

Table 6 presents the average annual growth rate at five-year intervals in the production sectors. Mining and Quarrying activities had the fastest growth in the 1980s. On the average, it grew more than 5.0% annually through 1985. This growth is contrasted by a significant plunge to contraction in Construction (-12.7%), Finance (-6.53), and Manufacturing (-3.09%). This has been attributed to the debt moratorium that drastically curtailed short-term trade credits and the shift in focus to the repayment of the country's foreign debt amounting to USD 26 billion.

Finance (11.84%), Construction (7.59%) and Government Services (5.46%) have the fastest average annual growth from 1985 through 1990, which is particularly due to fiscal austerity. Accelerated privatization resulted in the fast growth of Utilities in 1995 of 6.89% annually, on the average. Through 2000, the Services sector grew 4.74% annually (on the average) owing to the surge of activities in Transportation, communication and storage, Finance, and Private services sectors. Significant increases were recorded in the same sectors resulting in an average annual growth rate of 6.0% in Services sector through 2005.

Table 6: Gross Value Added by Industry, (Average Annual Growth Rate)

At 1985 Constant Prices	1985	1990	1995	2000	2005	2007
1. AGRI.FISHERY,FORESTRY	-0.39	2.72	1.46	2.17	3.72	4.45
a. Agriculture & Fishery	1.02	3.12	2.20	2.24	3.74	4.45
b. Forestry	-13.20	-4.04	-24.64	-5.06	0.14	3.77
2. INDUSTRY SECTOR	-4.09	4.97	2.12	3.98	2.84	5.57
a. Mining & Quarrying	5.43	-1.39	-1.98	1.54	13.08	8.35
b. Manufacturing	-3.09	5.04	2.02	3.14	4.33	3.97
c. Construction	-12.70	7.59	1.23	7.67	-6.56	13.25
d. Elect, Gas and Water	4.94	3.44	6.89	4.55	2.95	6.80
3. SERVICE SECTOR	1.02	5.69	2.57	4.74	6.00	7.69
a. Transport., Comm., Storage.	1.65	5.36	2.87	7.55	8.97	7.28
b. Trade	0.87	5.34	2.82	4.38	5.89	7.93
c. Finance	-6.53	11.84	2.47	6.65	6.72	11.81
d. O. Dwellings & R. Estate	0.30	4.55	1.74	2.01	3.17	5.87
e. Private Services	5.53	4.76	2.36	5.02	7.21	7.84
f. Government Services	1.94	5.46	2.73	3.08	1.71	4.00
GROSS DOMESTIC PRODUCT	-1.27	4.73	2.17	3.93	4.47	6.39
Net factor income from abroad	38.04	-28.73	-242.76	23.82	10.85	12.97
GROSS NATIONAL PRODUCT	-1.86	5.39	2.84	4.71	4.91	6.94

Source of raw data: NIA; NSCB

Table 7 shows that in 2001-2013 growth in the Services sector has been increasing remarkably. From 4.25% in 2001, activities in this sector surged by 8.68% in 2007. This was due to the cost and skills competitiveness of the country in Outsourcing and Offshoring activities, particularly in business process outsourcing.

Growth in the Industry sector came from Mining & quarrying and Construction sectors. Higher mining activities were driven by the surge minerals demand by China and India. The growth in Construction in 2006 and 2007 are brought mainly by the rise in public construction due to the

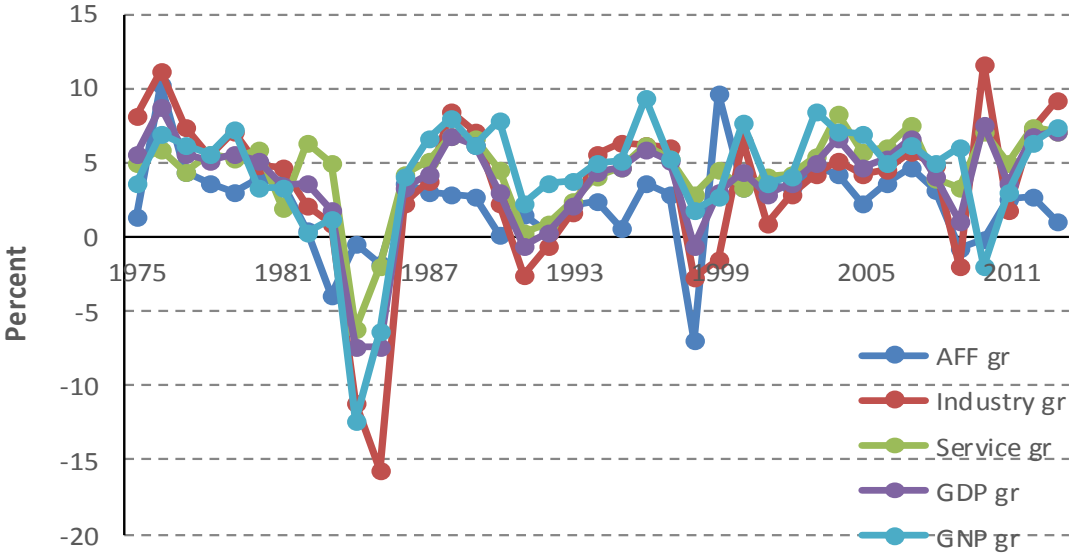
elections in May 2007. **Figure 22** provides the annual real GDP and GNP growth among broad industrial sectors.

Table 7: Growth in Real GDP, GNP, and in Broad Industrial Sectors

YEAR	AGRI.FISHERY, FORESTRY	INDUSTRY SECTOR	SERVICE SECTOR	GROSS DOMESTIC PRODUCT	GROSS NATIONAL PRODUCT
2001	3.71	-2.48	4.25	1.76	2.26
2002	3.95	3.87	5.09	4.45	4.18
2003	3.76	4	6.12	4.93	5.95
2004	5.27	4.69	7.64	6.18	6.72
2005	1.94	4.29	6.9	5.06	5.51
2006	3.83	4.55	6.7	5.45	6.1
2007	5.08	6.61	8.68	7.33	7.79
2008	18.71	11.42	10.84	12.02	13.23
2009	2.68	0.26	6.52	3.95	8.96
2010	5.60	15.21	11.99	12.18	1.88
2011	11.39	3.74	9.40	7.81	6.87
2012	1.26	7.97	11.06	8.85	8.71
2013	3.78	9.08	10.54	9.29	9.69

Source of raw data: NIA; NSCB

Figure 22. Growth in Real GDP, GNP, and in Broad Industrial Sectors



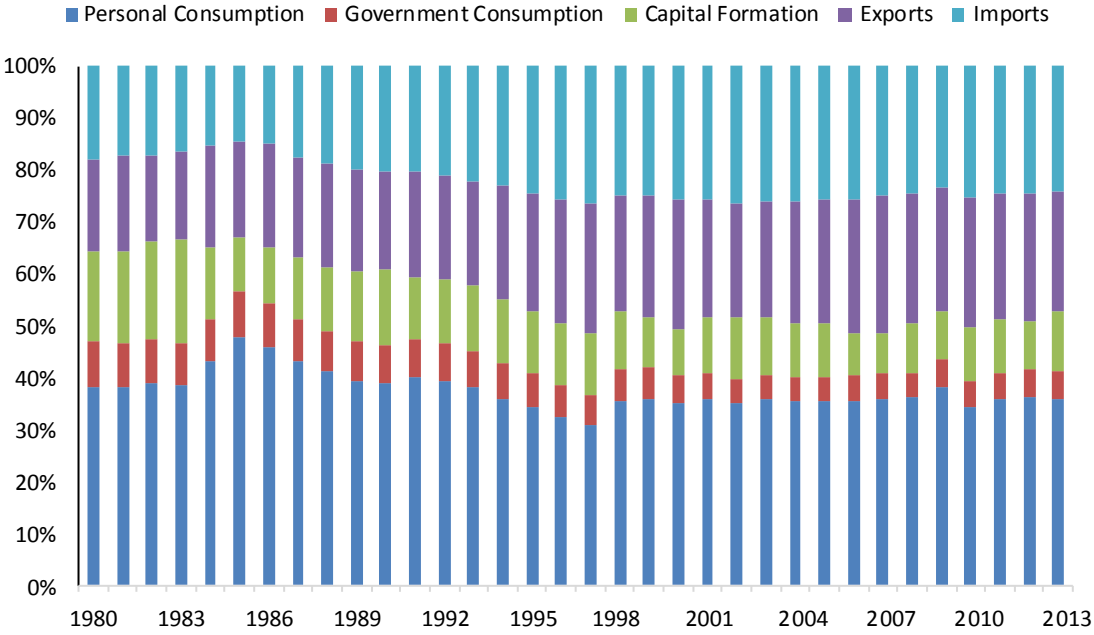
Source of raw data: NSCB

Growth in Demand Component

On the demand side, the contribution of Consumption (i.e., Personal and Government's) to GDP growth fluctuates around 50% of the total GDP. Table 8 shows that Personal consumption expenditure has been increasing, which is attributed in large part to OFW remittances.

Growth in the ratio of Exports to GDP is flat since the Asian financial crisis. The same is true with the ratio of Imports to GDP (See **Figure 23**). Meanwhile, the contribution of Capital formation to GDP remained very small throughout the period considered. It has been recently observed to be shrinking. Its average annual growth rate shown in **Table 8** validates this.

Figure 23: Contribution of Demand Components to GDP Growth



Source of raw data: NSCB

The average annual contraction in Capital formation through 2005 is attributed to the drop in the average growth of Construction and the significant negative average annual growth of 232.84% in Changes in stock. The country's competitiveness relative to neighbor countries lends some explanation to the low level of investments in the country. However, perceptions on the country's political stability and level of bureaucracy may be more important.

Table 8: Average Annual Growth in Demand Components

At Constant Prices	1985	1990	1995	2000	2005	2010	2013
1. Personal Consumption Expenditure	1.15	4.79	3.22	3.84	4.73	3.55	4.04
2. Government Consumption	-2.81	5.56	2.90	3.89	-0.76	1.76	1.63
3. Capital Formation	-12.62	16.08	1.44	5.17	-2.23	1.57	1.50
A. Fixed Capital	-8.98	11.92	2.23	5.39	-2.70	1.57	1.42
1. Construction	-8.47	8.61	0.30	9.78	-6.94	0.66	1.17
2. Durable Equipment	-11.15	18.27	4.01	1.13	1.22	2.70	1.68
3. Breeding Stock & Orchard Dev't	-2.34	2.52	2.43	4.79	1.25	1.73	2.59
B. Changes in Stocks	-203.20	-191.06	-31.60	-197.52	-232.84	-171.24	-200.53
4. Exports	-2.36	9.67	9.58	5.30	4.89	5.42	5.20
A. Total Merchandise Exports*					5.06	1.01	2.02
B. Non-Factor Services*					3.98	0.80	1.59
5. Imports	-6.95	16.54	9.75	2.75	5.58	5.53	4.62
A. Total Merchandise Exports*					6.73	1.35	2.69
B. Non-Factor Services*					-7.70	-1.54	-3.08
GROSS DOMESTIC PRODUCT	-1.27	4.73	2.17	3.93	4.47	2.81	3.74
GROSS NATIONAL PRODUCT	-1.86	5.39	2.84	4.71	5.91	3.40	4.67

* Recording of data started in 1996

Source of raw data: NIA; NSCB

IV. Policy Implications

Increasing integration presents several dilemmas for the government. While the easier flow of remittances has led to growth and a benign financial environment, it also spawned an economic environment that is difficult for export competitiveness and employment. The challenge now is

to remedy the bottlenecks that increase the cost of doing business in the Philippines. During this period remittance inflows have the potential of funding the country's infrastructure needs, both hard infrastructure, in the form of physical facilities like roads and ports, and soft infrastructure, in the form of social services such as improved education. Improving economic conditions may raise the pressure in pursuing governance reforms aimed at reducing the red tape and corruption.

Clearly, infrastructure (hard and soft) development is the key to completely adjust competitively amidst increasing integration. The country still has a lot to work on considering its public sector infrastructure spending-to-GDP ratio of 2.4% compared to the World Bank's benchmark ratio of 5% for developing countries. More importantly, improving its education system would mean enhancing the capacity of the country's most important resource - its labor force. This is particularly important for the country to be able to take hold of a sizeable share of the market for the next step in services outsourcing, which focuses on knowledge processes.

In aiming to get into the global arena more, the government also needs to craft social safety nets that would ease the social tension due to income disparity brought by the integration into the global market. Due to the skills requirement needed to participate in the bigger arena, some segments of the population not capable of taking hold of the opportunities may find themselves trapped in poverty as other more capable segments of the economy prosper through it. This may lead to conflict and some instability. Hence, if the country aims for sustainable growth in an environment of increasing global integration, it has to do so in the context, not only of efficiency, but of equity as well.

ADDENDUM

While the initial empirical results for the tests on the impact of remittances were very encouraging, the indicators are more modest when we correct for nonstationarity of the variables used. In order to fully explore the effects of remittances, we transformed the initial variables into variations that removed the common trends but kept the structure of the model intact. This essentially cleanses the data of common trends that tend to increase observed explained variation, better test statistics (and misleading results). I re-run the empirical estimates using transformed variables of basically the models. The new empirical results are explained below for the regression runs (Tables 1, 2, 4, and 5).

Table 1:

The results of re-estimating Table 1 essentially supports the results of the original formulation even after purging the data of common trends by use of stationary variables. The coefficients on the impact of the change net capital flows (as a percentage of GDP) and the growth rate exchange rate have the same effects on the current account level as in the original formulation. GDP growth has shifted signs to a negative impact. However, the variable is statistically insignificant and is kept as a control variable and to stay close to the original formulation.

The explained variation (indicate by the adjusted R-squared) is rather low. However, this is on transformed variables and already shorn of the common trends. Thus, the original variables are actually moving much more closely together than indicated by the explained variation.

Table 1: Regression Results for 1st Difference of the Current Account (levels)

Dependent Variable: 1st Difference of the Current Account

Period: 1980-2010

Exogenous Variables	Model (1)	Model (2)
Intercept	1.10E+09 (1.382)	2.63E+08 (0.300)
Net Capital Flows as percent of GDP	-2.66E+08 (-2.282)	-1.94E+08 (-2.287)
1st Difference of the Log of Exchange Rate	7.75E+09 (1.416)	9.27E+09 (2.490)
GDP Growth	-7.1632171 (-0.516)	-1.05E+08 (-0.736)
1st Difference of Remittances		0.966 (2.833)
Adjusted R-squared	0.168	0.250
DW	2.563	3.086
AIC	45.890	45.818
SC	46.085	46.061

Figures in parenthesis are t-statistics.

Table 2:

Table two was reformulated to more closely reflect the processes in the other empirical runs. This was done to add more structure because the initial formulation only had a single control variable, interest rates, and had very little form once the common trend was removed. In the original formulation the introduction of the variable, remittances, made a substantial difference. The introduction of control variables akin to those in the other empirical runs showed that remittances made a statistically significant impact on ration of gross international reserves to GDP although the explained variation is a bit low.

Perhaps, this model can be re-estimated with a more complex set of control variables in order to bring fully out the effect of remittances.

Table 2: Gross International Reserves (% of GDP)

Dependent Variable: Gross International Reserves as percentage of GDP

Period: 1980-2010

Exogenous Variables	Model (1)	Model (2)
Intercept	2.478 (1.945)	2.443 (1.887)
1st Difference of the Log of M3	-11.836 (1.681)	-13.404 (-1.731)
1st Difference of the Remittance-to-GDP (%) (previous value)		0.704 (2.028)
Adjusted R-squared	0.049	0.101
DW	2.031	2.087
AIC	4.660	4.636
SC	4.755	4.777

Figures in parenthesis are t-statistics.

Table 4:

The use of transformed variables in **Table 4** shows a much lower explained variation (lower adjusted R-squares) and the results confirm the basic hypothesis of the analytical review: that is, the beneficial effects of remittances on national saving. Here the positive impact of remittances on the absolute change in saving is confirmed given the control variables: the real interest rate and the change in GDP growth (i.e. the acceleration/deceleration in growth). This formulation is chosen to highlight the net impact of remittances on national saving (Table 5 will look at the saving-investment gap as an extension of this).

In an analogous empirical test, we include both GDP growth and its acceleration while keeping the change in remittances as another control variable. Here the introduction of GDP growth diminishes the impact of remittances suggesting that the effect of remittances is probably mediated through GDP growth. We chose to study the empirical test that isolates the significant impact of remittances and observe that both change in remittances and acceleration of GDP growth have positive effects on the absolute change in national saving.

Table 4: Regression Results for 1st Difference of Savings (levels)

Dependent Variable: 1st Difference of Savings
 Period: 1980-2010

Exogenous Variables	Model (1)	Model (2)	Model (3)
Intercept	-5.17E+09 (-1.546)	-6.43E+09 (-2.238)	1.83E+09 (0.238)
Real Interest Rate	-3.95E+08 (-0.732)	-3.45E+08 (-0.740)	85215995 (0.133)
GDP Growth	5.36E+09 (3.268)	4.95E+09 (7.019)	
1st Difference of the GDP Growth	5.10E+08 (0.893)	7.88E+08 (1.414)	3.22E+09 (3.513)
1st Difference of Remittances		3.661 (0.814)	11.836 (1.963)
Adjusted R-squared	0.762	0.739	0.343
DW	1.422	1.576	1.327
AIC	49.276	49.284	50.181
SC	49.463	49.518	50.367

Figures in parenthesis are t-statistics.

Table 5:

As we stated in the previous table, we extend the study of the impact of remittances on saving by also examining its effect on the saving-investment gap. This does not necessarily follow if the response to higher saving is an almost contemporaneous rise in investment. In that case, the saving-investment gap

may not show an positive response to remittances as shown in **Table 5**. The empirical results on the saving-investment gap are confirmed with the use of transformed variables (although we now explain the absolute gap instead of the percentage to GDP), implying that remittances have a positive effect on the saving-investment gap. This implies that investment either is unaffected or responds to remittances only with a (distributed?) lag. We use the real interest rate, the peso to dollar exchange rate, and growth of money supply as control variables.

Table 5: Regression Results for the 1st Difference of Savings-Investment Gap (levels)

Dependent Variable: 1st Difference of the Savings-Investment Gap

Period: 1980-2010

Exogenous Variables	Model (1)	Model (2)
Intercept	3.18E+04 (3.920)	2.38E+04 (2.794)
Real Interest Rate	-1868.071 (-3.112)	-1393.583 (-2.234)
1st Difference of the log of Exchange Rate	-62369.88 (-2.565)	-40089.5 (-1.139)
1st Difference of the Log of M3	-87216.99 (-2.584)	-85385 (-2.896)
1st Difference of the Log of GDP	-18338.61 (-0.229)	-49450.67 (-0.717)
1st Difference of Remittances		7.56E-06 (2.079)
Adjusted R-squared	0.292	0.376
DW	2.370	2.448
AIC	22.130	22.030
SC	22.365	22.313

Figures in parenthesis are t-statistics.

Notes for future work

For future work some extensions of the research are indicated by these results even given their encouraging thrust. There are at least two directions of these efforts:

1. More detailed modeling extensions of the empirical formulations may be needed to clarify the effect and the interactions of some control variables. For example, we can explore whether the negative effect of interest rates on the S-I gap is because inflow of remittances is to increase saving even as it has a downward push on interest rates.
2. A detailed examination of the impact of remittances on the volatility of interest rates and exchange rates. Part of the analytical observation is that one of the effects of the increase in remittances is to lessen the uncertainty over the depreciation of the peso. In other words, the prospect of peso depreciation and its increasing absolute value may both create uncertainty and also increase the band over which it can fluctuate. This could result in added uncertainty in the exchange rate. And as uncertainty over the exchange rate increases, this could also lead to increased volatility of interest rates.

Conclusion

This paper is a study of the beneficial effects of remittances on the Philippine macroeconomy. The analytical review shows the substantial improvement in the “fundamentals” after OFW remittances started to become significant in volume and value. The follow up study of the initial encouraging results support the preliminary hypotheses of the analytical review, although in more modest terms. While some of the results provide preliminary support for the hypothesis suggested by the analytical study, for future work, there is a need for more detailed modeling of the processes through extensions and variations of the formulations may be useful. At the same time, this is also a lesson not to rush to judgment as soon as initial results confirm expectations.

APPENDIX: Former Regression Results

Table 1: Regression Results for Current Account (% of GDP)

Dependent variable. Current Account as percentage of GDP

Period: 1980-2007

Exogenous Variables	Model (1)	Model (2)
Intercept	-2.912 (-1.806)	-21.774 (-4.835)
Net Capital Flows / GDP	-0.777 (-5.068)	-0.600 (-4.955)
Exchange rate change (%) (previous period)	0.221 (2.896)	0.214 (3.789)
GDP Growth	0.692 (2.485)	0.408 (1.880)
Log of Remittances		1.723 (4.344)
Adjusted R-squared	0.594	0.776
DW	0.934	1.505
AIC	5.404	4.840
SBC	5.598	5.082

Figures in parenthesis are t-statistics.

Table 2: Regression Results for Gross International Reserves (% of GDP)

Dependent variable. Gross International Reserves as percentage of GDP

Period: 1980-2007

Exogenous Variables	Model (1)	Model (2)
Intercept	-1.977 (-1.259)	-25.461 (-3.395)
Exchange Rate	0.444 (10.549)	0.186 (2.114)
Log (Remittances)		2.800 (3.180)
Adjusted R-squared	0.837	0.884
DW	1.117	1.564
AIC	4.858	4.536
SBC	4.957	4.684

Figures in parenthesis are t-statistics.

Table 4: Regression Results for LOG(Savings)

Dependent variable. Logarithm of Savings (LOG(Savings))

Period: 1980-2007

Exogenous Variables	Model (1)	Model (2)
Intercept	12.326 (63.723)	6.908 (23.720)
Real Interest Rate	-0.051 (-1.884)	-0.022 (-3.208)
GDP Growth	14.267 (3.209)	3.707 (2.963)
Log (Remittances)		0.503 (18.867)
Adjusted R-squared	0.251	0.953
DW	0.346	0.563
AIC	2.388	-0.340
SBC	2.532	-0.148

Figures in parenthesis are t-statistics.

Table 5: Regression Results for S-I Gap (% of GDP)

Dependent variable. Savings-Investment Gap as percentage of GDP

Period: 1980-2007

Exogenous Variables	Model (1)	Model (2)
Intercept	-484.108 (-6.430)	-448.807 (-6.210)
Log (GDP)	52.394 (7.895)	50.638 (8.135)
Exchange Rate	0.326 (4.620)	0.303 (4.553)
Log (M3)	-17.781 (-11.424)	-18.883 (-12.135)
91-day Treasury Bill	-0.454 (-3.762)	-0.398 (-3.431)
Remittances / GDP (previous year)		0.633 (1.897)
Adjusted R-squared	0.912	0.924
DW	1.777	1.849
AIC	4.119	3.999
SBC	4.368	4.297

Figures in parenthesis are t-statistics.

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