



Philippine Productivity Dynamics  
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of Total Factor Productivity

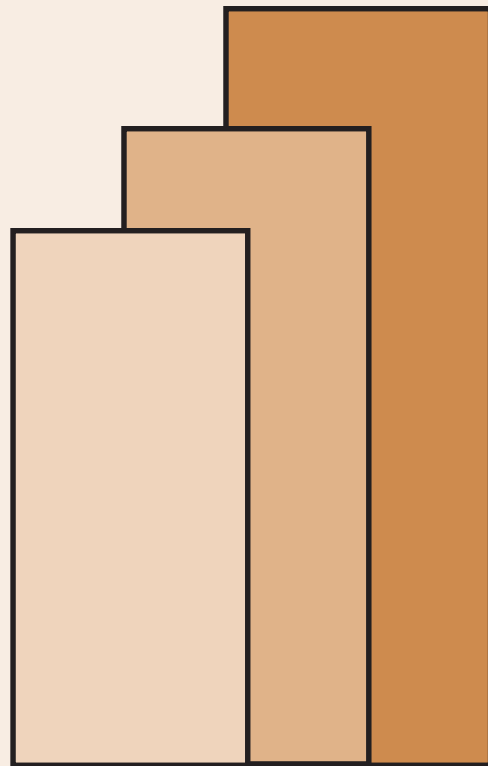
*Gilberto M. Llanto*

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For comments, suggestions or further inquiries please contact:

**The Research Information Staff**, Philippine Institute for Development Studies

5th Floor, NEDA sa Makati Building, 106 Amorsolo Street, Legaspi Village, Makati City, Philippines

Tel Nos: (63-2) 8942584 and 8935705; Fax No: (63-2) 8939589; E-mail: [publications@pids.gov.ph](mailto:publications@pids.gov.ph)

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# **Philippine Productivity Dynamics in the Last Five Decades and Determinants of Total Factor Productivity**

**Gilberto M. Llanto**

Various studies showed that total factor productivity (TFP) has not been a source of growth in the Philippines. It seems that factor accumulation, which is not a sustainable source of growth, has underpinned Philippine economic growth. Studies have also shown that the sustained growth of developed countries has ridden on the back of technological advances rather than on increasing use of factor inputs. Total factor productivity improvement is the only route to sustain economic growth in the long run. After a brief review of economic growth and productivity dynamics of the Philippine economy in the past fifty years, the paper provides an estimation of the determinants of total factor productivity and labor productivity. In the light of the empirical findings reported in this paper, some policy levers present themselves as critical in improving productivity growth in the economy. Investments in education, more government expenditure for improving human capital, greater openness of the economy and macro-economic stability are indispensable.

*Key words: total factor productivity, labor productivity growth, openness, economic growth*

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# **Philippine Productivity Dynamics in the Last Five Decades and Determinants of Total Factor Productivity**

**Gilberto M. Llanto<sup>1</sup>**

## **Productivity Dynamics in the Last Fifty Years**

It is now well-known that increases in productivity have played a significant role in the growth experiences of East Asian countries. Growth in productivity is crucial to a country's future economic prospects. In East Asia, the decade 1985-1995 was the golden period for total factor productivity (TFP) growth, accounting for over 30 percent in eight of the countries subjected to a productivity growth study (APO 2011). In the initial period of the astonishing growth of East Asian economies, vibrant growth was clearly driven by capital accumulation, but total factor productivity growth gained significance in subsequent periods, which resulted in East Asia's rise in prominence in the world economy. In the rapidly growing East Asian countries, there has been a recent resurgence in contribution from total factor productivity growth accounting for 45-60 percent of economic growth (APO 2011). Capital deepening has been taking place but all countries have negative capital productivity growth. Labor productivity has risen in the rapidly growing East Asian countries which drew from capital deepening as a prime source of productivity. However, total factor productivity growth has made a significant contribution, that is, by 30 percent in the Asian Tigers (except Singapore, which relied on input-driven growth), 44 percent in Thailand and 48 percent in China.

Between 1990 and 2008, the Asian economy was growing at 5.3 percent per year on average, compared with 2.8 percent in the U.S. economy (APO 2011).

Realizing that productivity growth is the key factor in economic development and sustained growth most governments in East Asia are eager to improve overall productivity especially after the Asian financial crisis (Oguchi 2004). It is no coincidence that those Asian countries (Korea, Taiwan, Thailand, and China), which had the highest total factor productivity growth rates, were also those that registered the highest GDP growth rates (Kawai 1994).

The more productive East Asian economies have all overtaken the Philippines in economic growth and per capita income, despite the country's higher per capita income than South Korea and Taiwan, and slightly lower per capita income than Hong Kong and Singapore after the Second World War. The story has been told and retold many times by several observers: the Philippines' per capita income was overtaken by Korea and Taiwan in the 1950s, Thailand in the 1970s, Indonesia in the 1980s, and China in the 1990s. The Philippines missed the growth opportunities of the industrial restructuring in East Asia as trade and investments found their way into Malaysia, Thailand, and Indonesia in the 1970s-1980s. In the 1990s, China posting double digit growth rates attracted substantial foreign direct investments and overtook all other countries of East Asia in economic performance, and attained a dramatic poverty reduction. Thailand, a close comparator country became a high middle income country in 2011 leaving behind the Philippines although it was significantly poorer (than the Philippines) in the 1950s (Balisacan and Hill 2003). **Table 1** shows selected key indicators of the economy from 2005 to 2010.

**Table 1. Key Indicators, 2005-2010**

<b>Key Indicators</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
GDP growth rate	4.8	5.2	6.6	4.2	1.1	7.6
National government deficit as % of GDP	-2.70	-1.07	-0.19	-0.92	-3.89	-3.69
Inflation rate	7.7	6.2	2.8	9.3	3.2	3.8
Export growth (%)	4.0	14.9	6.4	-2.8	-21.7	33.8
Import growth (%)	7.8	10.4	7.6	5.1	-23.5	30.7
Exchange rate Php/US\$	55.08	51.31	46.14	44.47	47.63	45.10

Source: Economic and Social Database, Philippine Institute for Development Studies

The last fifty years witnessed the “roller coaster” performance of the Philippine economy. Some economists have characterized this performance as a “boom-bust” cycle of economic growth because an episode of growth is quickly followed by some crisis such as a balance of payments, financial, or political, which negates incipient economic gains, followed by another episode of short-term growth, and later on by another crisis. Sicat’s (2004) striking description of this phenomenon as episodes of instability interspersed with periods of good growth characterizes the roller coaster performance. The growth rate was never smooth. The economy contracted in 1984-1985, 1990, and 1998 (Canlas et al. 2009).

In the past decades the Philippines has lagged behind East Asian Countries in economic growth, and sustainable economic development seems elusive (Yap 2009, 2002; Sicat, 2004; Balisacan and Hill, 2003). Researchers have named various factors to explain the boom-bust cycles of economic performance and the anemic growth rates in the past decades: macroeconomic instability (Sicat 2004), policy incoherence (Yap

2009), horrendously low total factor productivity (Alba 2007), sustained decline in domestic investments (Bocchi 2008), lack of congruence between political structures and the needs of economic development (De Dios and Hutchcroft 2003), institutional uncertainty (Pritchett 2003), cultural issues (Nelson 2007), a chronic productivity growth deficit (Usui 2010). The country did have episodes of growth but it has been unable so far to sustain high economic growth in the last fifty years.

Recently signs of sustained albeit low growth of the Philippine economy seem to have emerged in the past decade as the economy started to reap the dividends of economic policy reforms initially pursued by the Aquino government after the downfall of the Marcos regime, and continued and expanded by subsequent administrations. Given the series of economic reforms, initial signs of sustained growth, and the realization that the Philippines has lagged behind its ASEAN neighbors, will the economy finally be able to graduate into the ranks of rapidly developing East Asian countries and break out from its characterization as a “major development puzzle”?<sup>2</sup> What will be the role of productivity in the quest to achieve high and sustained growth and overcome high unemployment, and deep poverty and high income inequality? How can the economy exploit total factor productivity growth to meet its sustained growth and poverty reduction goals? These are crucial questions needing answers that could equip policy makers and other economic agents who have been disappointed with the inability of the economy to tap its vast growth and productivity potential. The Philippines is faced with the challenges raised by greater economic openness and integration in the fast approaching ASEAN economic community in 2015.

To be able to answer these questions, it will be constructive to first conduct a brief review of economic growth and productivity dynamics of the Philippine economy in the past fifty years<sup>3</sup>. The review will provide an important setting for analyzing the results of our estimation of the determinants of total factor productivity and labor productivity, respectively in the next section. The fundamental rationale is that a proven pathway to a sustained, inclusive growth in the future is bestowed no less by productivity growth. The last section of this paper gives some concluding remarks and policy implications.

To make the analysis of growth and productivity dynamics in the past fifty years tractable the period is divided into the following decades: 1961-1970, 1971-1980, 1981-1990, 1991-2000 and 2001-2010<sup>4</sup>. I analyze those sub-periods based on available data on total factor productivity (TFP) and labor productivity computations in the 2011 APO Productivity Databook.

I also draw on information on 1961-1970 from published and unpublished works of Cororaton (1995, 1999, 2004) and Austria (1998), and other sources because the Productivity Databook only reports estimated TFP and labor productivity of Asian countries for the period 1971-2008. It is assumed that the APO 2008 TFP and labor productivity estimates remain valid for 2009-2010 in the absence of more recent estimates.

Various studies on Philippine total factor productivity and labor productivity have been done in the past (e.g., Lampman (1967), Hooley (1985), Patalinghug (1994), Cororaton and Abdula (1999), Cororaton and Cuenca (2001), and Austria (1998), among others)<sup>5</sup>. The overall conclusion is that productivity growth in the Philippines has

been low compared to that of other ASEAN countries (Austria, 2002; Cororaton, 2004). Philippine economic growth has relied more on factor accumulation than on improvements in total factor productivity.

Understanding economic growth performance and productivity growth is done through the lens of what happened in the trade and industrial sector. The standard narrative of Philippine economic growth during the post-war period is directly linked to the fortunes of the industrial sector (Yap 2002) who pointed out the conclusions reached by Medalla et al. (1995) that the more than three decades of protection had penalized exports, had led to a serious misallocation of resources toward protected but inefficient industries, and had created efficiency losses arising from lack of competition, and that reform toward a more liberal and neutral trade policy is required for industrialization.

Local trade policy analysts such as Medalla (2002) categorized the trade policy reform experience of the Philippines into five stages: (a) pre-reform era of highly trade restrictive and protectionist policy regime or the post-war period up to the 1970s, (b) the first major trade reform era during the first half of the 1980s, (c) major import liberalization period in 1986-1988, (d) second phase of the Tariff Reform Program, which narrowed the tariff range to mostly within 30 percent, and (e) third phase of the Tariff Reform Program under Executive Order 264, which was implemented from 1996-2000.

During at least three decades in the post-war period, trade and industrial policy supported an inward-looking import substitution strategy although there were attempts to liberalize trade in the early 1980s. Greater openness and trade liberalization finally took place in the late 1980s and were seriously pursued by the government in the



succeeding decades. From thenceforth, trade and industrial policies were geared toward the neo-classical prescription of trade liberalization, privatization, and deregulation<sup>6</sup>. There were growth spurts during the last decade but for growth to be high and sustained growth, the economy has to significantly improve its productivity. The following sub-section analyzes the economy's growth performance and productivity growth over 5 ten-year periods.

***1961-1970: Pre-reform era of trade restrictions and protectionist policy***

In the immediate postwar period, the Philippines undertook to rebuild its shattered economy and adopted a policy of economic protectionism and an inward-looking, import-substitution industrialization strategy. Policy makers used a variety of instruments intended to protect domestic industries: import and exchange controls, high tariff walls for consumer goods, and import licensing requirements. In 1957 duties on raw materials, intermediate goods and essential items, which were not locally available, were reduced while duties on non-essential, finished goods and items, which could be manufactured by domestic producers, were raised. Investment incentives, e.g., exemption from all internal revenue taxes for four years for new and necessary industries, which formed part of a suite of policies meant to support and protect domestic industries, have been available as early as 1946. In 1967, the enactment of the Investment Incentives Act formalized the system of incentives geared mainly to support production for the domestic market.<sup>7</sup>

The inward looking import-substitution strategy was able to raise the level of capital per worker allowing GDP to grow by about 6.4 percent annually during the decade (Canlas et al. 2009).

In the 1960s the economy was more successful than its neighboring countries in attracting foreign direct investments in import substitutes (Kind 2000)<sup>8</sup>. The economy responded with an average growth rate of GDP in 1950-1960 reported at 6.4 percent. Philippine economic performance in the 1960s was better than those of its neighbors<sup>9</sup>. In 1950-1960, the average growth of Philippine GDP was 6.5 percent compared to 4.0 percent for Indonesia, 3.6 percent for Malaysia and 5.7 percent for Thailand.

However, in the following decade, 1960-1970 while the Philippine average growth of GDP of 5.1 percent was higher than Indonesia's 3.9 percent, it was much lower than the GDP growth rates registered at 6.5 percent for Malaysia, and 8.4 percent for Thailand.

In 1958-1960 total factor productivity was at an average of -2.5 percent according to Cororaton and Abdula (1999), an indication that Philippine growth was mainly driven by factor accumulation. A deceleration of the total factor productivity growth was discernible across all industries in the period 1966-1970.

As the decade passed on the big drop of Philippine GDP growth rate from 6.5 percent in 1950-1960 to 5.1 percent in 1960-1970 became very noticeable. The economy was losing steam and saddled with negative total factor productivity performance, it could not rely on simple factor accumulation to improve its economic growth record, and growth plummeted to a historically low level of performance.

There was an attempt to break free of the heavy import substitution of the 1950s and 1960s with the passing of the Export Incentives Act of 1970. Bautista (2003) called this a policy shift towards a more outward-looking industrial development strategy. Manufacturing firms registered under this law are provided with incentive such as tax

exemptions, deductions from taxable income, and tax credits. The package of incentives partly compensated for the substantial bias against export production (Bautista, Power and Associates 1979) but there was really no conscious attempt to remove the highly protective tariff system, which was the primary source of this bias. Furthermore, there was a marked rise in the number of imported products subject to quantitative restrictions (QRs), its share in the total number of Philippine Standard Industrial Classification (PSIC) seven-digit product categories doubling from 26 percent in 1970 to 52 percent in 1980 (Bautista 2003). Thus, the incipient industrial export promotion program during the 1970s faltered.

***1971-1980: Attempts toward outward looking policy***

From the post-war period up to the 1970s, the country maintained a highly trade-restrictive and protectionist policy, which supported the inward-looking import substitution strategy at that time (Medalla 2002). In response to the winds of change in the international markets where foreign direct investments were seeking country hosts, Philippine policymakers introduced economic reforms intended to make the country export-oriented. An influential ILO Report named the Ranis Report: *Sharing in Development*<sup>10</sup> was instrumental in calling the attention of the government to the importance of generating employment through labor-intensive industry and manufacturing, and export orientation. Republic Act 5186, granted incentives and guarantees to investments while the Export Incentives Act and Presidential Decree 66 created the Export Processing Zones. These laws provided the economic policy framework for the beginning of what was supposed to be an outward looking strategy in the 1970s.

The Philippines did get its share of foreign direct investments (FDIs) during the postwar period. In fact, during the first wave of FDI inflows to Asia in the 1960s, the Philippines attracted foreign capital (Kind 2000). However, FDI inflows to the Philippines slowed down as the decade progressed. In the second wave of FDI inflows in the 1970s, the Philippines was bypassed by import substituting and export-oriented American firms in favor of other East and Southeast Asian countries. The third wave of FDI flows occurred in the 1980s and these were absorbed by Malaysia, Thailand and Indonesia. China was the main beneficiary of massive FDI inflows during the fourth wave in the 1990s.

The average GDP growth rate of the Philippines while positive during the period 1970-1980 was much lower than those of other ASEAN countries. Data from the World Bank and 2002 World Development Report<sup>11</sup> showed the following average GDP growth rates: Philippines (6.3 percent), Indonesia (7.6 percent), Malaysia (7.8 percent), and Thailand (7.2 percent) during the period 1970-1980.

The records would show that the Philippines failed to attract substantial investments despite the grant of a generous investment incentive package and the introduction of various outward looking policies. On the other hand, neighbouring Southeast countries, which succeeded in projecting a stable political and economic environment that was attractive to foreign direct investments, benefited from large inflows of foreign direct investments. Those countries benefited from the beginning of a lengthy industrial restructuring in East Asia, which started during the post-war period.

Cororaton and Abdula (1999) found that TFP growth rose at an average increase of 1.5 during 1971-1975, but a decline took place in 1972 and 1975, apparently

influenced by the martial law declaration and the expiration of the Laurel Langley Agreement with the United States. The following period 1976-1980 totally offset whatever TFP growth had been achieved during the previous period<sup>12</sup>. Sector-wise the TFP for manufacturing was a dismal 0.052 percent TFP growth for the entire period 1958-1991. Hooley's (1985) estimated that the manufacturing sector experienced a yearly decline of TFP of 1.9 percent from 1976-1980. The number of industries within the manufacturing sector with declining TFP increased from 12 in 1971-1980 to 14 in 1981-1992 (Cororaton 1995). Thus, even if "the 1970s were (*the Philippines*) best decade" (Balisacan and Hill (2003), the growth record was relatively low by the standards established by Malaysia, Indonesia and Thailand during this period.

An estimate done at the IMF by Sarel (1997) for the period 1978-1996 showed a negative TFP growth rate for the Philippines (-0.8 percent) in contrast to the very impressive growth rate of TFP in Singapore (2.2 percent), Thailand (2.0 percent), and Malaysia (2.0 percent). Indonesia's TFP growth rate was 1.2 percent in the same study<sup>13</sup>.

The Philippines was late in jettisoning a failing import-substitution policy and fixation with fixed exchange rate policy while its neighbours had earlier adopted a flexible exchange rate policy, e.g. Thailand, and credible set of trade liberalization policies with assurances of easy repatriation of profits. It helped that those neighbouring countries were able to project an image of political stability. In contrast, in the Philippines the democratic political framework yielded to one-man rule following the declaration of martial law in 1972.

The initial economic gains of an import substitution strategy were eroded over the past three decades because the protectionist policies adopted by the government led to a serious resource misallocation and the sheltering of uncompetitive domestic industries, which produced low quality but high cost goods and services for a small domestic market<sup>14</sup>. Domestic manufacturers did not have the incentive to modernize and adopt innovations because protectionist policies ensured access to a domestic market, which unfortunately stayed relatively small. The protective tariff and non-tariff barriers to trade led to the rise of highly inefficient industry and manufacturing sectors that only catered to the domestic market. While during this time the neighboring countries have started to embrace an export-led industrialization strategy, Philippine trade and development policy was fixated on maintaining a mercantilist and protectionist industrial policy and providing state support for inefficient but politically well-connected domestic firms.

### ***1981-1990: Trade liberalization and openness of the economy***

Despite attempts at turning an outward-looking strategy in the 1970s, the economy was hostage to a small domestic market, high factor costs, weak trade links and highly protected, inefficient domestic firms<sup>15</sup>. The weaker economic performance of the Philippines began to manifest in the late 1970s. The pronounced divergence of Philippine growth from its Asian neighbors occurred in the 1980s. In Bautista's (2003) chronicle of events during that period, the 1980s was a decade of marked turbulence in the Philippine economy, reflected in the considerable instability in annual output growth and inflation rates. The decade was the "lost decade" for Philippine growth: there was a moratorium on foreign debt servicing in 1983, a recession in 1984-1985, a short-lived

economic recovery in 1986 with growth in the second half of the 1980s unable to offset the weak performance in the first half (Canlas et al. 2009).

The Philippine economic performance in the 1970s and 1980s did not favourably compare with those of neighbouring countries. In the 1980s, the non-tradable sectors were behind the poor overall poor TFP performance of the economy, with relatively huge negative TFP. It is noted that the economy's incentive regime led to the production of import substitutes by those non-tradable sectors.

For the period 1958-1991 an estimate done by Cororaton and Abdulla (1999) for the manufacturing industry showed a dismal 0.52 percent total factor productivity growth. Total factor productivity growth in manufacturing stagnated indicating the economy's lack of technological advances. Inward looking policy, which has been a major cornerstone of economic policy since the end of the Second World War, and the volatile macroeconomic environment heightened by political instability during the martial law period robbed the economy of its dynamism and vitality. Thus, the economy was not ready for the challenges wrought by trade liberalization and greater openness of the economy.

Yap (2009) commenting on the failed import substitution strategy stressed that the protectionist policy led to the promotion of economic sectors where the Philippines did not have a comparative advantage even as the lack of competition removed the incentive of protected firms to become innovative and adopt more modern technology. Despite the heavy protection and financial support given by the government, uncompetitive domestic firms withered in the face of fierce international competition

(Sicat 2004). Protected domestic industries never developed the strength to compete in the global markets.

The narrative of the low productivity and the lack of competitiveness of domestic industries can also be appreciated in the context of structural adjustments faced by the economy during this period. Astute observers pointed at internal and external problems that led to the very low productivity of Philippine industry<sup>16</sup>. A range of studies documented the angst of Philippine manufacturing and industry. The internal problems are as follows: (a) inadequate capacity utilization; (b) financial inadequacy; (c) poor technology; (d) lack of managerial skills; and (e) poor productivity. The external problems include (a) tariff protection; (b) custom administration; (c) credit; (d) graft and corruption; (e) infrastructure such as power, communication and transportation; and f) government bureaucracy (Follosco 1982). A study of the flour milling industry noted the negative effects of cartel-like behavior and rent seeking (that is, lobbying for protection) on consumer welfare and productivity of the industry (Saldana 1990). A comparison of the textile industry in the Philippines and Thailand by Sanchez (1990) showed that the latter's textile industry performed better in terms of output, export and TFP growth. The differential in productivity performance was due mainly to technological advantage of Thailand's textile industry over that of the Philippines. Thailand exploited joint venture agreements with foreign textile industry while the heavily-protected Philippine textile industry became inefficient and uncompetitive. The outcome of a protectionist, inward-looking policy was high concentration and market power exercised by only a few favored domestic industries. A 1997 World Bank survey showed that out of the 1,000 largest Philippine corporations, 216 corporations (ranked by sales) belonged to only 39



corporate groups, and accounted for 51 percent of total sales (Aldaba 2002). Despite trade liberalization, domestic industries managed to hang on to their protected markets.

The government recognized the adverse effects of inward-looking import-substitution strategy and protectionist policies, and thus, substantially reduced both the average tariff and the variation in tariff protection across industries (Medalla 2002). It started with a comprehensive trade liberalization program in 1982 to be implemented in three phases in the decades of the 1980s and 1990s. The Tariff Reform Program (TRP) Phase I, implemented from 1981 to 1985, narrowed down the tariff structure to within the zero-to-50 percent range. This was accompanied by the Import Liberalization Program (ILP), which sought to eliminate non-tariff import measures, but it was interrupted by the economic (balance of payments) and political crises in the country in the mid-1980s. It was not until the change of government in 1986 that the trade liberalization program was resumed (Clarete 2005)<sup>17</sup>. During this period, the Omnibus Investments Code of 1981 and an amendment to PD 1789 were also passed. The latter in particular eliminated certain incentives such as accelerated depreciation and reinvestment allowances, which served to cheapen capital and thus, helped in making the production structure more capital-intensive. As trade liberalization was being implemented, an average annual rise of TFP at 4.1 percent was noticed by Cororaton and Abdula (1999).

During the early part of the 1980s, the Latin American debt crisis blew with Mexico, Brazil and Argentina unable to service their foreign debt. There was a severe liquidity crunch among developing countries, capital sought safe havens in the developed world, and global trade contracted. The Philippines, faced with a heavy

foreign debt burden suffered a foreign exchange crisis in 1983-1985. The severe political turmoil brought about by the assassination of a prominent political opposition leader in August 1983 and the foreign exchange crisis brought about by both domestic and international factors were too much for the domestic economy to bear. Growth collapsed in 1984.

The Philippines saw a period of political instability, a severe economic contraction, and worsening indicators of human development until the Marcos dictatorship was ended by a popular uprising in 1986. It was not surprising that productivity plummeted to an average -8.3 percent in 1984-1986. Data from the 2002 World Development Report<sup>18</sup> show that the average growth rate of Philippine GDP during 1980-1990 was at a dismal 1.0 percent compared to the strong GDP growth exhibited by neighbouring countries: Indonesia (6.1 percent), Malaysia (5.3 percent) and Thailand (7.6 percent). Bautista (1993) described Philippine gross domestic product (GDP) growth to be drastically slower not only relative to the preceding decade but also in comparison with the performance of other developing countries in East and South Asia in the 1980s.

A casualty was the program of industrial structural adjustment initiated in 1981 by the Philippine government with World Bank technical and financial support to improve the international competitiveness of domestic industries (Bautista 2003). The long term objective of improving competitiveness through industrial restructuring and transformation gave way to short-term measures that were introduced to address the economic and political crisis in the period 1983-1985. Among such short-term measures were the following: foreign exchange and import controls, import tax of 5 percent later

increased to 8 percent, additional export duties ranging from 2 to 5 percent on traditional export commodities, and economic stabilization tax of 30 percent (in June-September 1984).

***1991-2000: Difficult task of economic recovery***

One-man rule ended with the return of democracy to the Philippines in 1986, which ushered a wave of economic reforms that led to a period of economic recovery. During the period 1986-1997, the Philippines transformed from the “sick man” of Asia (Yap 2002) to an economy, which was later able to withstand the onslaught of the 1997 financial crisis. GDP expanded at an average rate of 3.9 percent from 1986-1991 and 3.7 percent from 1992-1997. Accelerated economic growth from 1995-1997 brought down poverty incidence to 32 percent in 1997 (Yap 2002). In Bautista’s words (2003) the reduction in annual inflation rate from 34.5 percent (average) in 1984-85 to 1.3 percent in 1986-87 was dramatic. The current account balance improved from –4.1 percent of the gross national product (GNP) in 1983-85 to 0.3 percent in 1986-88.

The Aquino government resumed trade liberalization under those favourable macroeconomic conditions. Although she inherited an economy weakened by political instability and an economic crisis, President Corazon Aquino pursued an aggressive reform program covering trade, customs, fiscal policies, and stabilized the economy<sup>19</sup>. In 1991 the Foreign Investment Act was enacted into law and liberalized regulations on foreign equity by allowing up to 100 percent participation in all areas not specified in a foreign investment negative list.

The second phase of the Tariff Reform Program, which reduced the effective protection rates started with the issuance of Executive Order 470 in 1991<sup>20</sup>. This

brought down the tariff rates, with the majority of the tariff lines falling within the 3 to 30 percent range by 1995 (Medalla 2002)

Economic recovery, however, was fitful. The aggressive reform agenda fostered by the Corazon Aquino government could have led to a stronger economy had not the failed coup d'etat attempts in the late 1980s coupled with a severe shortage of electric power and natural calamities, e.g. eruption of Mt. Pinatubo severely tested the resilience of the economy. It is noted that the government assumed not only government liabilities but also private sector liabilities arising from loans extended to favoured private companies during the past regime. The debt burden became a heavy fiscal burden government and constrained growth and development. Canlas et al. (2009) put the consolidated public sector deficit at around 6 percent, and foreign debt at close to 100 percent of Gross National Product in 1986, resulting in an economy with "serious imbalances" (ibid, page 28).

The Ramos administration pursued further trade and other economic reforms in a bid to make the economy competitive. The third phase of the Tariff Reform Program was implemented through the issuance of Executive Order 264. The intent was to further reduce tariffs for industrial products to within the 3 percent and 10 percent range by the year 2000.

The estimated TFP growth for an extended period of time, 1967 to 1997, declined by -0.47 percent (Austria 1998). There was a slight economic recovery in 1993 but TFP did not show any marked improvement. The Asian financial crisis, which emanated from Thailand and rapidly spread to neighboring countries, also took its toll on productivity growth as TFP was negative in 1997 and 1998. Cororaton and Cuenca

(2001) found TFP performance to be negative throughout 1996-1998 with the Asian financial crisis as a contributing factor.

Computations done by Cororaton and Abdula (1999) showed that growth in the 1990s was driven mostly by capital accumulation while there was an overall decline of TFP. The prolonged real appreciation of the domestic currency contributed to the movement of capital to non-tradables while an energy crisis and natural calamities took its toll on productivity. Thus, while Cororaton and Cuenca (2001) saw signs of economic recovery in 1993, total factor productivity did not show any improvement. In 1996, total factor productivity further declined. In 1997-1998, total factor productivity remained negative but slightly lower than that in 1996.

Average growth of GDP of the Philippines during 1990-2000 was 3.2 percent in contrast to those of Indonesia (4.2 percent), Malaysia (7.0 percent), and Thailand (4.2 percent)<sup>21</sup>.

Succeeding Philippine governments introduced various economic reforms that first, helped with economic recovery and later, with putting the economy on a growth trajectory, albeit low by East Asian standards. The economic reform program focused on a deeper integration with the regional economies, that is, with the ASEAN countries and with the global economy through liberalization, deregulation and privatization. (

There is a note of optimism in Cororaton (2004) with respect to improving total factor productivity of the Philippines. Although for the most part of the past fifty years, TFP growth in the country was negative, there is an underlying trend that seems encouraging. The contribution of TFP growth to overall economic growth consistently improved from -4.26 percent in the mid-1980s to +0.93 percent in 1998-2000. The

reversal in TFP growth trend was anchored on the introduction of major economic policy reforms and the substantial improvement in the macroeconomic policy framework of the country. The important thing to bear in mind was that economic policy reforms and the government's resolve to implement them really have a direct bearing on improving productivity in the economy.

Economic policy reversals and even a perception that government is vacillating in the implementation of economic reforms send the wrong signals to economic agents. Investors adopt a wait-and-see attitude or seek better and more remunerative investment options, and typically, those options would seem to lie outside the country. In fact, local business tycoons have made substantial investments in China and Viet Nam not only as a defensive posture in view of policy uncertainty and inefficiency in regulatory frameworks but also as a conscious and well-studied investment options. If the Philippines cannot promise assure nervous capital of a stable economic and political environment, and a credible commitment to economic reforms, it will seek the safe and remunerative haven offered by neighboring countries.

### ***2001-2010: Challenges in a highly competitive global and regional economy***

With a GDP growth rate averaging around 5.0 percent in 2006-2010 the Philippines would not be able to pull itself from a low middle-income country status, from a trap characterized by stagnant investment, low growth, and a high unemployment level. Current unemployment rate of 6.4 percent and underemployment rate of 19.1 percent remain high<sup>22</sup>. Investment (gross fixed capital formation as a percentage of GDP) has stayed in real terms at around 20.2 percent of GDP in the past decade<sup>23</sup>.

At the turn of the third millennium, a primordial goal was to establish macroeconomic stability and create fiscal space so that the country may be able to invest in much needed human capital and physical infrastructure. An observation of Canlas (2003) encapsulates the Philippine growth conundrum: because of low investment, capital per worker suffers with adverse effects on labor productivity. In its diagnosis of the critical constraints to growth, the Asian Development Bank (2009) pointed out the need to significantly improve the fiscal policy space through tax policy and administrative reforms so that the country could invest more in human capital and infrastructure while improving the governance framework. The key constraints to economic growth in the Philippines are (i) narrow fiscal space, (ii) inadequate infrastructure, especially power and transport, (iii) weak investor confidence due to governance concerns, particularly corruption and political instability, and (iv) inability to address market failures leading to a small and narrow industrial base (ADB 2009).

A catch-up mood with the rapidly growing ASEAN countries was palpable but unfortunately, again political distractions including questions of legitimacy hounded the Arroyo government. The country was weighed down by weak export performance but the bright spot was in export of electronics and electronic-related products and location of business process outsourcing industry to the Philippines, a new source of outputs and employment. Growing remittances from overseas Filipino workers validated a consumption-driven growth felt throughout the decade (2000-2010).

The deep challenges faced by the economy are indicated by the slow structural transformation of the economy. Mendoza and Ambat (2010) pointed out that in 1988-2008, nothing much has changed in the structure of the Philippine economy. Growth is

anchored on private consumption, abetted by strong remittances and low inflation. The economy has achieved a modest annual average growth of 5 percent since 2000, peaking at 7.2 percent in 2007, which is the highest recorded growth, post-EDSA revolution. However, the global economic slump in 2008 halted the growth momentum. Domestic output decelerated to 4.6 percent in 2008 and further contracted to 0.9 percent in 2009<sup>24</sup>. The economy seems to be in some sort of low-middle income country growth equilibrium, and the challenge is how to ignite growth in order for it to escape from this seeming low-middle income trap.

The most recent estimate of the contribution of TFP growth to overall economic growth showed a consistent improvement from -4.26 percent in the mid-1980s to +0.93 percent in 1998-2000. As earlier stated, this is an encouraging development because in a highly competitive global marketplace an improvement of TFP performance in the country is indispensable. **Table 2** shows the contribution of factors of production to GDP in the past five decades. Much of GDP growth in the 1960s and until the 1970s came from growth in capital and labor, and very minimally from TFP growth. In the 1970s and 1980s TFP growth was negative. There seems to be a cause for optimism that in the future economic growth will be driven by TFP growth. In 1991-2000, the contribution of TFP growth to GDP growth was 0.25 percent, which improved to 2.41 percent in 2001-2006 (Canlas et al. 2009).

**Table 2. Contribution of Factors of Production to GDP Growth (percentage point)**

Period	Contribution of Capital Growth	Contribution of Stock Labor Growth	Contribution of TFP Growth
1961-1970	3.98	1.18	0.06
1971-1980	4.57	1.38	-0.64



1981-1990	2.05	1.37	-1.62
1991-2000	1.77	0.87	0.25
2001-2006	1.12	1.24	2.41

Source: Canlas et al. (2009)

In sum, the rapidly growing East Asian economies are in the cusp of an unprecedented growth and development, which has led to dramatic declines in poverty in China, Indonesia and even Viet Nam. Efficient inter-industry linkages through a disaggregated regional production networks hatched during the 1980s and maturing at the turn of the century have offered tremendous opportunities for growth and development to Malaysia, Thailand and Indonesia. Through improvement in total factor productivity and labor productivity, the Philippines may be able to firmly latch on this growth process and integrate itself more fully into the global production and distribution system.

That there is a cause for optimism on the future role of total factor productivity and labor productivity in sustaining high economic growth may be gleaned from **Table 3**, which shows the computed total factor productivity and labor productivity in the period 1971 to 2008.

**Table 3. Total Factor Productivity, Labor Productivity, and Capital Productivity**

	1971-1980	1981-1990	1991-2000	2001-2008*
<b>Total Factor Productivity</b> [index (2000=1)]	1.302	1.034	0.968	1.063
<b>Labor productivity</b> [based on hours worked, index (2000=1)]	0.905	0.884	0.899	1.072
<b>Labor productivity</b> [based on number of employment, index (2000=1)]	0.911	0.904	0.894	1.054
<b>Capital productivity</b>	1.807	1.168	1.015	1.058

[index (2000=1)]				
<b>Output growth</b>				
[annual growth rate, %]	5.950	1.640	3.051	4.737
<b>Total factor productivity</b>				
[annual growth rate, %]	0.008	-2.505	-0.049	1.891
<b>Labor productivity</b>				
[annual growth rate, %]	1.570	-1.148	1.194	2.022
<b>Capital deepening</b>				
[annual growth rate, %]	1.563	1.358	1.243	0.130
<b>Capital deepening, of which IT capital</b>				
[annual growth rate, %]	0.068	0.148	0.210	0.448
<b>Capital deepening, of which non-IT capital</b>				
[annual growth rate, %]	1.494	1.211	1.032	-0.318

\*assumed to be true also for 2001-2010

Source: 2011 APO Productivity Databook

While in the previous four decades (1961-1970; 1971-1980; 1981-1990; 1991-2000) Philippine total factor productivity growth rate has been either very low or even negative, calculated figures for TFP and labor productivity growth rates are positive at 1.89 percent and 2.0 percent, respectively in the decade 2001-2010.

Given the somewhat positive view of both TFP and labor productivity growth rates in the past decade (2001-2010), the challenging task for policy makers is to determine appropriate policy levers for improving the economy's productivity performance.

The following section attempts to find out the determinants of total factor productivity growth and labor productivity growth. What factors determine total factor productivity? What factors influence labor productivity? What policy levers present themselves to policy makers in light of the finding of an empirical investigation on the determinants of total factor productivity and labor productivity?

## **Determinants of Total Factor Productivity and Labor Productivity**

In this section we analyze several key factors, including government policies influencing productivity changes. First, we estimated the determinants of total factor productivity, and secondly, identified the determinants of labor productivity. We estimated both the basic regression model and the expanded regression model specified by the APO chief expert, Dr. Tsu-Tan Fu.

### ***Determinants of total factor productivity***

For the determinants of total factor productivity, the baseline regression model included four types of variables defined as: *educational attainment* (average schooling year representing human capital investment), *research and development* (share of R&D expenditure as a percentage of GDP), *trade openness* (share of export in GDP, and share of FDI in GDP), and *government consumption* (share of government consumption in GDP). The expanded regression model included the following variables: *income per capita* representing income level, *life expectancy* representing health condition, *population size* representing human resource endowment, and such macroeconomic variables as *budget balance*, *change in real exchange rate*, *inflation rate*, *industrial policy and regulation*, and *institutional quality and government efficiency*. Data limitations on industrial policy and regulation, and institutional quality and government efficiency made us to exclude these in the regression analysis. We make up for the lack in terms of descriptive analysis of the influence of these variables on growth and productivity. We ran a number of regression analysis and the best results are presented in **Table 4**. The results show the drivers of growth in TFP.

The regression models that were tested all turned in the expected signs with most of the explanatory variables found to be significant. The estimated models show the following as significant determinants of growth in TFP: (I) educational attainment (measured as growth of years of education), (ii) inflation rate, and (iii) foreign direct investments. The following were also found as significant determinants: (a) expenditure in health and education (Model 7), (b) external trade (Model 5), and population growth (Model 1).

The estimated coefficient of educational attainment, measured as growth in the number of years of education, confirms the observation that the economy cannot rely on factor accumulation to sustain growth in the future. In other words, growth driven by factor accumulation is not sustainable in the long run. It is important for the economy to rely on total factor productivity growth. The positive sign of educational attainment is consistent with the theory and evidence on the impact of education on growth. Mincer (1974) found that investment in human capital increases labor's efficiency units with positive impact on earnings and aggregate growth performance. Human capital accumulation, mainly through education has an important role in development (Lucas 1988). Further arguments for the important role of education on total factor productivity by raising a country's ability to innovate and take advantage of technological progress are pointed out by Romer (1990). Investments in education will play a major role in stimulating technological changes and innovation.

Table 4 also indicates the importance of a stable macroeconomic framework, measured by the inflation rate, on growth of total factor productivity. Macroeconomic stability assures the orderly functioning of markets, which enable economic agents to

make optimal decisions. The national government deficit yielded the expected negative sign but it is insignificant. It is a measure of policy instability in the sense that to the extent that policy makers cannot attain fiscal balance, crowding out effects of government borrowings tend to depress private investment investments. A healthy fiscal balance assures private economic agents that the government pursues market-enhancing policies. At the same time a strong fiscal position, indicated by fiscal balance, calms nervousness in capital markets about the ability of the government to pursue growth expenditures and at the same time, service its indebtedness.

The coefficient of the ratio of FDI to GDP has the expected positive sign and shows foreign direct investments to be a significant determinant of TFP. Foreign direct investments provide a channel for transferring of technology, introducing innovations and good business practices in the shop floor and at the managerial level. Neighboring counties, which have projected an image as good investment destinations, have capitalized on foreign direct investments to stimulate growth in productivity, output and employment. In collaboration with foreign investors, those countries have been able to develop their respective niches in the regional production networks, which reflect shifts in comparative advantage as they develop familiarity with advanced production techniques. Those countries benefited from the industrial restructuring of East Asia as their respective economies underwent a process of structural transformation from the production of low productivity goods to high productivity manufactured goods, and later services.

The results shown in Table 4 indicate that more openness as chiefly measured by the by FDI/GDP, and also by the significance of trade/GDP (Model 5) will improve

total factor productivity. The record of growth of neighboring East Asian economies shows that those, which have been more open and hospitable to foreign direct investments and have demonstrated more credible assurances of outward looking policies of their respective economies, have reaped the benefits of higher productivity growth, more rapid economic growth rates, and higher rates of employment. The results are higher and sustained GDP growth rates, lower levels of unemployment, and significant poverty reduction in those countries.

A case in point here is an illustration made by Usui (2010) who compared the progress made by Thailand and the Philippines in expanding and developing a sophisticated product space. Thailand has been more able to improve its export basket toward more sophisticated products than the Philippines. The process of structural transformation in Thailand substantiates the view that an economy grows with diversification of the export basket toward sophisticated products (Usui 2010; Hausmann and Klinger 2006; Hidalgo et al. 2007, Imbs and Wacziarg 2003).

Using techniques in determination of product space pioneered by Hausmann, Hidalgo and other researchers at Harvard University, Usui (2010) found that by 1975 the Philippines had developed comparative advantage mostly in garment products in addition to the traditional agricultural and forest-based products. In the next two decades, the Philippines was able to attract foreign investments in electronic products and has since then developed comparative advantage in these products. However, the initial success in shifting to a sophisticated product such as electronics was not followed by the manufacture of other sophisticated industrial products. In Usui's calculation, since 1985 the number of products with comparative advantage in the Philippines has

stagnated at around 100, of which the core products is limited to 32 in 2006. In contrast, Thailand had comparative advantage in a fewer garment products in 1975. However, somehow the acquisition of comparative advantage in garment, electronics, textile, machinery and chemicals happened in the next two decades. Usui (2010) pointed to the successful product diversification in Thailand, which now has comparative advantage in 197 products of which 71 products belong to the core area of the product space, that is, the realm of sophisticated manufactured products. A basic explanation behind the contrasting performance of the Philippines and Thailand was the former's weak TFP growth. Various studies, e.g. Cororaton (2002), APO (2004) found that TFP growth in the Philippines was weak and at times negative. Thailand did much better in TFP growth.

The importance of human capital investment to growth in TFP is shown by the positive sign of the coefficient of growth in health and education expenditure. Model 7 shows that it is a significant determinant of the growth of TFP. In the process of structural transformation, a modernizing economy needs a highly skilled, well educated and healthy professionals, technicians and labor. For the economy to be able to move up the value chain, growth in TFP must take place and this depends to a large extent on educated and skilled human capital.

At least one model (Model 1) indicates the negative effect of population growth on growth of total factor productivity. A high population growth is seen more as a drag to the economic growth in the present particular stage of Philippine development based on the studies of several local researchers. Recalling the review made earlier on Philippine productivity dynamics in the past fifty years, it is noted that the slow

transformation and modernization of the economy have resulted in low output and high unemployment. Improvements in productivity have not kept pace with or more exactly, have lagged behind population growth. On the other hand, population interpreted as representing the economy's human resource endowment has a positive and significant impact on growth of total factor productivity (Model 4).

The results of runs with R&D as explanatory variable deserve some comment. I found that R&D is significantly correlated with growth of years of education. I decided to drop R&D as an explanatory variable because of potential multicollinearity problem. It is noted that educational attainment as mentioned earlier is a significant and positive determinant of growth of TFP.

R&D is an important factor in improving TFP. A study by Cororaton (1997) showed the underinvestment in R&D and an inefficient allocation of very limited R&D resources to various sectors of the economy. The economy has a severe shortage of R&D personnel and an inefficient institutional set up in the science and technology sector. This is indicated by the weak linkage between government-funded R&D institutes with private industry and manufacturing. Thus, there is a need for policy makers to heighten focus on R&D to make total factor productivity a major source of economic growth in the future.

**Table 4. Determinants of Total Factor Productivity**

Explanatory Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
FDI/GDP	1.18572 (1.74)*	1.12866 (1.40)	1.36947 (1.74)*	1.07392 (1.57)	1.2520 (1.82)*	1.45120 (2.17)**	
Inflation	-0.15849 (-1.73)*	-0.20373 (-2.25)**	-0.20439 (-2.20)**	-0.16352 (-1.84)*	-0.17823 (-2.28)**	-0.17213 (-2.09)**	



Growth in years of education	506.29722 (2.57)**	455.85511 (2.10)**	381.70175 (1.83)*	621.85867 (2.79)**	478.4452 (3.24)**	490.943 (3.01)**	583.667 (2.39)**
Growth in education and health expenditures	0.07589 (1.11)	0.03836 (0.54)	0.04876 (0.68)	0.06343 (0.95)	0.02188 (0.34)	0.03082 (0.46)	0.14539 (2.15)**
NG deficit (million pesos)	-0.00001 (-0.92)	-0.00001 (-0.36)	-0.00001 (-0.72)	-0.00001 (-0.51)			-7.5E-07 (-0.05)
Population, growth	-5.26032 (-1.93)*						
Exports/GDP		0.1447 (1.21)					
Trade/GDP			0.0404 (0.77)		0.07666 (1.92)*		0.067561 (0.74)
Population, total				0.000002 (2.14)**			
Manufacturing exports as % of total exports						0.05279 (1.63)	0.0119 (0.15)
Telephone lines per 100 persons							1.3240 (1.07)
Constant	5.69030 (0.94)	-10.2862* (-1.83)	-7.9997 (-1.48)	-18.37419 (-2.60)**	-11.2441 (-2.60)**	-9.0459 (-2.41)**	-16.1225 (-3.03)**
R2	0.6377	0.6087	0.5963	0.6471	0.5492	0.5359	0.4729
Adj. R2	0.5572	0.5217	0.5066	0.5687	0.4787	0.4634	0.3558
Number of observations	34	34	34	34	34	34	

\*p<.10

\*\*p<.05

\*\*\*p<.01

t-stat in parentheses

### ***Determinants of labor productivity***

Prof. Nomura in his explanation of the importance of productivity growth pointed out that for most developing countries, including those of the ASEAN the substantial per capita GDP gaps with the developed economies (U.S., and OECD) are predominantly explained by their relatively poor labor productivity performance.<sup>25</sup> Therefore, identifying the sources of labor productivity growth is crucial to a country's development

efforts. The *APO Productivity Databook* uses the growth accounting framework, the international standard for compiling productivity estimates. In this approach, economic growth is decomposed into contributions of input growth and total factor productivity (TFP) growth. Within the same framework, labor productivity growth can be traced back to its sources in capital deepening, improvement in labor quality, and TFP growth where potential policy levers could be applied to raise labor productivity.

Using Philippine data, I checked for correlations between labor productivity growth on the one hand, and capital deepening and TFP growth, on the other. The results are shown in **Table 5**. The calculation shows that IT capital deepening is a more important driver of labor productivity growth. Increasing share of knowledge capital, e.g. investment in ICT, which represents improvement in the quality of capital is strongly correlated with labor productivity growth.

**Table 5. Correlation among labor productivity growth, capital deepening and TFP growth**

	Model 1	Model 2	Model 3
IT capital deepening	1.003410 (188.41)	8.9065 (2.52)	
Non-IT capital deepening	1.000261 (2282.73)	1.0013 (3.22)	
TFP	1.000048 (4202.33)		1.0540 (12.03)
R-squared	1.0	0.37	0.80

t-statistic in parenthesis

The literature shows various determinants or sources of labor productivity<sup>26</sup>. For example, Bosworth and Collins (2003) found that catch-up effects represented by initial conditions, openness, geographic factors, institutional quality, and policy variables significantly affect labor productivity. Benhabib and Spiegel (1994) found that human capital influences productivity growth. Jones (1995) and Coe and Helpman (1995) reported the important role of R&D in productivity growth.

The results of the estimation of the determinants of labor productivity are shown in **Table 6**. Several regressions were run and the results of four of those estimations are reported here.

**Table 6. Determinants of Labor Productivity**

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>	<b>Model 4</b>
<b>FDI/GDP</b>	1.1637 (1.94)*	0.6857 (1.24)		
<b>Inflation rate</b>		-0.2148 (-4.41)***		
<b>Growth in eduyear</b>	264.0284 (2.51)**	388.0344 (4.46)***	190.4944 (1.86)*	272.6425 (2.52)**
<b>Growth of Total employment</b>	-0.8851 (-7.31)***	-0.9369 (-8.71)***	-0.9498 (-7.83)***	-0.9457 (-7.08)***
<b>Export/GDP</b>	0.0820 (1.87)*	0.0361 (0.93)	0.1109 (2.59)**	0.0983 (2.08)**
<b>Growth of Education and Health Expenditure</b>	0.1170 (2.42)**		0.1362 (2.76)***	

<b>Growth in the Share of Education and Health Expenditure</b>		0.0244		0.0621
		(0.45)		(0.91)
<b>R-squared</b>	0.7195	0.7967	0.6863	0.6233
<b>Adj. R-squared</b>	0.6756	0.7573	0.6483	0.5777

Note:

t-statistic in parenthesis

\*signifiant at 10%

\*\*signifiant at 5%

\*\*\*signifiant at 1%

In all the regressions reported in Table 5 the coefficients turned in the expected signs. Foreign direct investments, educational attainment, openness of the economy, and government expenditure in health and education are significant determinants of labor productivity. The negative coefficient of inflation rate denotes that that low inflation rates signifying macroeconomic stability have a positive impact on labor productivity. A favorable macro environment is conducive to more investments and job creation, hence the positive impact of low inflation on labor productivity. Growth in total employment has a negative coefficient because the quality variables, namely years of education and education expenditures pick up the positive impact of employment.

The education attainment variable is highly correlated with the R&D variable. Several regression runs show years of schooling as a robust and significant determinant of labor productivity. Cororaton (1999) observed while rates of return on R&D investments are high, there are indications that the Philippines has been underinvesting

in R&D. It ranked very low in two broad indicators of R&D— expenditure on R&D and number of scientists and engineers. Based on his computation of a TFP regression of 99 countries, the R&D expenditure would have to increase by 5.778 percent for Philippine TFP to reach its frontier (or full potential) of a total of 7.445 percent of GNP.

The results draw attention to the policy levers that the government may manipulate or handle to improve labor productivity. Openness of the economy measured as exports to GDP ratio and the foreign direct investments are significant positive influences on labor productivity. In this regard, the government should continue to formulate economic policy reforms that strengthen the export markets and bring in more foreign direct investments. The competition provided by discriminating (foreign) export markets creates incentives on domestic firms to become more productive and competitive, otherwise the export market or destination will be lost to competitors. On the other hand, foreign direct investments bring into the domestic markets new products, new processes, innovations, and a host of complementary institutions, e.g, efficient supply chains, that motivate labor productivity. Inadequate government expenditure especially in education and health will result in weak human capital, which will constrain labor productivity. Investments in human capital through greater expenditure on health and education will be critical in ensuring labor productivity.

## **Concluding Remarks**

A general picture emerging from various studies is that TFP has not been a source of growth in the Philippines. With studies finding negative TFP growth, it seems that factor accumulation has underpinned Philippine economic growth, which is not a sustainable source of growth. Studies have shown that the sustained growth of developed countries has ridden on the back of technological advances rather than increasing use of factor inputs. Because factor inputs cannot increase indefinitely, total factor productivity improvement is the only route to sustain economic growth in the long run. In his survey article, Chen pointed out that almost all studies of developed economies show that total factor productivity is a far more important source of growth than factor inputs. On the other hand, empirical studies of growth accounting for developing economies in Asia and Latin America indicate that capital input is the major source of growth with total factor productivity taking a less important role in economic growth. The fear is that reliance on factor accumulation alone would not make growth sustainable.

If the low and non-inclusive growth trend continues, the Philippine economy will continue to lag behind its East Asian neighbors in terms of economic performance and of efforts to reduce poverty and high income inequality.

Philippine growth of the past decade portrayed as “jobless growth” has had an insignificant impact on poverty reduction. This raises a warning from Alba (2007) that a low steady-state level of output per worker will consign the economy to a slow rate of long-term growth. It is a worrisome prognosis conjuring images of a continuous diaspora of the best and brightest to developed countries, a persistently weak economy,

and a further worsening of poverty and high income inequality in the future. To reverse this trend and put the economy on a high sustained growth path, there is a case for improving total factor productivity, in particular labor productivity, including, pursuing innovations and reforming the country's institutions as a pathway out of low and jobless growth.

Is there a particular role for government in stimulating growth and making it sustainable? On this point the lucid summarization by Sarel (1996) on the role of public policy from three different perspectives comes handy. Those perspectives are the (a) neo-classical free market view of the role of public policy in the economy, (b) selective intervention policies, and (c) agnostic view that rejects claims of both the primacy of markets view (neo-classical) and selective interventionist policies' camp, dubbed "the revisionists" by Sarel. The revisionists aver that nothing meaningful about selective interventions can be said because nobody can properly identify how such policies affect economic growth. On the other hand, the neo-classicists assume that markets are efficient and that government should confine itself to providing public goods and to getting the basics right. Government should abstain from any further intervention in the market.

In the Philippines, various market imperfections and the presence of various types of externalities seem to indicate a role for government in policy coordination, addressing information externalities, and addressing the excesses of the market. As observed by Sarel (1996), government can play a useful role in the orderly development of the market, in the acquisition of technology and in allocating funds for useful projects that promise a good rate of return. Put differently, De Long and Summers (1991) state

a case for a role of government in the economy: “The government should jump start the industrialization process by transforming economic structure faster than private entrepreneurs would.”<sup>27</sup>

In the light of the analysis of productivity dynamics in the past five decades and the findings of the empirical investigation, some policy levers present themselves as critical in improving productivity growth rates in the economy. Investments in education, more government expenditure for improving human capital, greater openness of the economy (measured by FDI/GDP and trade/GDP), attracting more FDIs, and maintaining macro-economic stability are indispensable in improving productivity growth and performance.

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### Endnotes

<sup>1</sup> Senior Fellow, Philippine Institute for Development Studies, and formerly Deputy Director General, National Economic and Development Authority. The author is grateful to Lorraine Zafe for data processing and the literature review, and to Aubrey Tabuga and Francis Quimba for assistance in the estimation of the regression models.

<sup>2</sup> Balisacan and Hill (2003) called the Philippines one of the world's major development puzzles. Despite favorable initial conditions in the post war period, high educational standards, ample agricultural land, an access to the U.S. market, the Philippines failed to capitalize on these and faltered on its way to development.

<sup>3</sup> This section makes extensive use of recent studies on Philippine growth and development conducted, among others, by Balisacan and Hill (2003), Sicat (2004), Yap (2002), and other authors who wrote chapters in Balisacan and Hill, and Yap. Detailed discussions of trade and industrial policy, employment, and productivity growth by individual authors are provided in Yap (2002).

<sup>4</sup> Following guidelines given by APO.

<sup>5</sup> The discussion of productivity dynamics in this section draws from the results of those studies.

<sup>6</sup> Yap (2002) stressed that there are other interpretations of the malaise in the Philippine economy, which may lead to different policy prescriptions. The malaise in the Philippine economy can be attributed to several factors. For example, some would pin the blame on bad economic policies or bad politics or weak institutions or predatory elite or other factors. In this respect, we take the line of Yap (2002) who acknowledged that an analysis of the malaise is not feasible in a purely economic framework. He averred that perhaps a multidisciplinary study could be done to construct a holistic development framework for the Philippines (page 17).

<sup>7</sup> See Medalla (2002). After the Investment Incentives Act of 1967 followed the Export Incentives Act (1970), Batas Pambansa No. 301 (1983), and Executive order 226 (1987).

<sup>8</sup> Kind (2000) called this the first wave of FDI inflows to Asia. During the second wave of FDI inflows in the 1970s, the Philippines was bypassed by import substituting and export-oriented American firms in favor of other East and Southeast Asian countries. The third wave occurred in the 1980s and again the Philippines as FDI inflows were destined for Thailand and Indonesia. China was the main beneficiary of massive FDI inflows during the fourth wave in the 1990s.

<sup>9</sup> GDP growth figures from Balisacan and Hill (2003) who cited data from Lim (2001), the World Bank (2002), and the World Development Report (2002).

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<sup>10</sup> It was called the “Ranis Report” after Prof. Gustav Ranis who headed a team of experts fielded by the ILO to provide technical assistance to the Philippine government.

<sup>11</sup> Reported in Balisacan and Hill (2003)

<sup>12</sup> The TFP growth figures reported in this section were taken from Cororaton unless otherwise indicated.

<sup>13</sup> The estimated rate of TFP growth for the U.S. in the same period was 0.3 percent (Sarel 1997).

<sup>14</sup>Not all protected domestic industries failed. Sicat (2004) noted that some of the failed industrial enterprises were able to thrive under the liberalized environment after the 1980s through mergers and acquisitions, privatization, and rehabilitation under new owners.

<sup>15</sup> Kind (2000) commented that the protective system implied that the Philippine economy had weak linkages with foreign industry customers and suppliers. The Philippine trade system seemed to delink the country from its neighbors so that it was not a suitable location for the expanding industrial sector in Asia.

<sup>16</sup> Studies reviewed by Aldaba (2002).

<sup>17</sup> Martial rule was lifted in 1981.

<sup>18</sup> Reported in Balisacan and Hill (2003).

<sup>19</sup> Corazon Aquino was the mother of the current Philippine president, Benigno Simeon C. Aquino Jr.

<sup>20</sup> Medalla (2002) reported the findings of the Development Incentives Assessment (DIA) study undertaken by the Philippine Institute for Development Studies. The average level of effective protection rate and the variation across industries has gone down significantly from 44.2 percent in 1983 to 29.4 percent in 1990, to 24.1 percent in 1995. The gap in EPRS between industry and agriculture has been significantly reduced. The same happened between the exporting sector and importing sector. While exports remained penalized by the protection structure, the degree of penalty has declined.

<sup>21</sup> Reported in Balisacan and Hill (2003).

<sup>22</sup> Source: As of October 2011, NSCB website

<sup>23</sup> Source: 20.16 percent average 2001-2010: <http://data.worldbank.org/indicator/NE.GDI.FTOT.ZS>

<sup>24</sup> Mendoza, Maria Fe and G.H. S. Ambat (2010)

<sup>25</sup> Prof. Koji Nomura on why labor productivity matters. [http://www.apo-tokyo.org/productivity/mp\\_002.htm](http://www.apo-tokyo.org/productivity/mp_002.htm) (date accessed March 3, 2012)

<sup>26</sup> Cited by Chief Expert Dr. Tsu-Tan Fu in his guidelines Explanation on the Methodology of the Study.

<sup>27</sup> As quoted in Sarel (1996)