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The Philippines: on the road to being an emerging economy

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In the 1980s, the Philippines was viewed as a failure in terms of its goal to industrialize. But in the past few years of the current century, the country's economic prospects improved and the country is predicted to be joining the next group of "breakout nations". The paper looks at the short-run macroeconomic policy reforms and long-term growth-oriented policies since 1986 that have contributed to improved growth performance and bright economic prospects. A responsible budget deficit-reduction program and investments in factors that support long-run growth, such as human capital, have been helpful. Moving forward, stabilization policy has gotten more challenging in an environment of mobile international capital, flexible exchange rates, and "quantitative easing". In the long run, policies conducive to technological progress are essential.

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1. Introduction

Robert E. Lucas, Jr. [1993] in his article entitled "Making a Miracle", cites the Philippines as an example of a country that failed to transform itself into an economic miracle. Lucas uses the latter phrase to describe a process of productivity growth and industrial transformation associated with profound improvements in living standards of the country's population. Lucas has in mind the transformation that at the time had been occurring in South Korea, Taiwan, Hong Kong, and Singapore in East and Southeast Asia—these economies had witnessed a growth rate in real per capita income of 5 to 7 percent each year, in about three decades from 1960. South Korea and Taiwan were transformed from predominantly agricultural economies. Today, they are often held up as models of successful industrialization. Hong Kong and Taiwan had no agricultural sector

to begin with and relied primarily on export-led growth. I refer to a country showing signs of undergoing such a transformation as an emerging economy.

About two decades later, Ruchir Sharma [2012], in his book, *Breakout nations: in search of the next economic miracles*, includes the Philippines in his list of developing countries likely to become an economic miracle in the second decade of the 21st century. The main basis for inclusion in the list hinges on exhibiting "growth that surpasses expectations". This brings to mind the so-called BRIC countries—namely, Brazil, Russia, India, and China—which some observers before Sharma had tagged as breakout nations or emerging economies.

What did the Philippines do to merit significantly improved economic prospects? Is the country's real per capita income showing a tendency towards convergence, i.e., catching up with the established economic miracles? There are many possible answers. This paper examines the macroeconomic and growth-oriented policies that underpin the significant improvements in the growth prospects of the Philippines.

A quick look at the growth performance of the Philippine economy over the past three decades, juxtaposed with two other middle-income Southeast Asian economies—namely, Thailand and Indonesia—provides some insights into the positive assessment that the Philippine economy is currently enjoying. Table 1 shows data spanning three decades that were accessed from the World Bank's *World development indicators*. This period witnessed three economic crises in the Philippines: the debt default of the country in 1983; the Asian financial crisis of 1997; and the global financial crisis of 2008. In the 1980s, the average real per capita income each year of the Philippines declined 0.8 percent, compared to growth rates of 6 percent in Thailand and 4.46 percent in Indonesia. The Philippines recovered in the 1990s with an average annual growth rate of 0.58 percent. The recovery gained strength in 2001-2010, growing 2.52 percent each year.

TABLE 1. Real per capita income and average annual growth rate

Country	1980 real per capita income, y, (in 2000 US$)	Growth rate of y, 1981-1990 (in %)	Growth rate of y, 1991-2000 (in %)	Growth rate of y, 2001-2010 (in %)	2010 real per capita y, (in 2000 US$)
Philippines	1,088	(0.80)	0.58	2.53	1,375
Thailand	772	6.0	3.64	3.26	2,774
Indonesia	356	4.46	3.15	3.52	1,034

Source: World Bank, World development indicators, accessed August 2011

In 1983, the Philippines experienced a balance-of-payments crisis that forced the government to declare a moratorium on foreign-debt servicing. To overcome its liquidity problems, the national government arranged a standby loan agreement with the International Monetary Fund (IMF). The latter's preferred financial programming techniques and conditionality lending practices anchored on tight fiscal and monetary policies resulted in a deep recession in 1984-1985. Real GDP growth declined 11 percent during the two-year period. The economy recovered in 1986, which gathered strength up to 1989. However, in view of the deep recession in 1984-1985, the 1980s proved to be a lost decade for the country.

Political shocks in 1990, including attempted *coups d'état* against the President of the Republic and natural disasters, caused economic activities to decline in 1991. A new Philippine President was elected in 1992, but an electric power shortage in 1992-1993 kept the economy weak, and it did not recover until 1994. The growth was sustained up to 1997, despite the emergence that year of the Asian financial crisis that was triggered by the devaluation of Thailand's baht. The growth rate of real GDP slowed down, ending flat in 1998. A new president was elected in 1998, but lack of fiscal discipline under the new administration caused the budget deficits of the national government to balloon, which caused interest rates to rise and growth to slow down. Still, given the strength of the recovery in 1994-1997, a moderate growth rate in per capita income was posted in the 1990s.

Entering the first decade of the 21st century, several shocks—both economic and non-economic—again battered the economy. In 2000, allegations of the President's involvement in an illegal numbers game led to the Philippine Senate impeaching the President, resulting in his eventual unseating in 2001. Nonetheless, the economy posted a positive growth rate in real GDP that year. Then the September 11 terrorist attack took place, an event that led the US federal government to declare war against terrorism. That war had serious repercussions on the Philippine economy, in view of the conflicts with Muslim rebels in the southern part of the country. In any event, the economy proved sufficiently resilient by posting an annual average growth rate in real per capita GDP of 2.53 percent over the period 2001-2010.

The economic growth in 2001 ushered in the longest recovery in the past few decades. Policymakers responsible for the economy managed to temper the output volatility, keeping business fluctuations moderate. The economy dodged a recession in 2009, with real GDP managing to grow 0.1 percent, in spite of the 2008 global financial crisis that was triggered by the collapse of the sub-prime housing loan market in the US. Still, the economy failed to realize its capacity output, as real GDP grew only by an average of 4 to 4.5 percent each year. The failure to reach full potential is often attributed to poor governance, mainly an inability to fight corruption in high places during the period 2001-2010.

In 2010, real GDP grew a strong 7.6 percent. This moderated to 3.6 percent in 2011. In 2012, real GDP recovered and grew 6.6 percent, the highest among Southeast Asian economies. Real GDP grew 7.1 percent in 2013 and 6.1 percent in 2014. Clearly, the country's growth performance improved considerably over the period 2012-2014, with real GDP growth averaging 6.6 percent each year. The remarkable growth performance of the economy in the past three years is one reason for the improved assessments of the country's macroeconomic performance in the future. Many observers of the Philippine economy attribute the high-growth rate to a combination of market reliance and good governance under the incumbent administration.

For a developing economy to catch up with more developed ones, its real per capita income must exhibit growth on a sustained basis. To provide a quantitative tone, in a country where real per capita GDP grows 6.9 percent each year, a doubling of real per capita GDP every 10 years can be expected. Several factors, both economic and non-economic, matter for growth of real per capita income in the long run [Barro 1994]. Among the economic factors, it is important in the short run to avoid unwanted business fluctuations through appropriate macroeconomic policies [Fischer 1993]. In the long run, it is vital for the economy to overcome the usual tendency towards diminishing marginal productivity in both factors of production: labor and capital. As the new endogenous growth theory emphasizes, such growth is rooted in capital accumulation, whereby capital is defined broadly to include not only physical, but also human, technological, and social overhead capital (Romer [1986, 1990]; Lucas [1988]).

For the Philippines, having experienced recurrent boom-and-bust cycles that forced the government to tap standby lending facilities of the IMF on a recurrent basis, it is useful to revisit the macroeconomic policy reforms that have contributed to an economic recovery and laid the foundation for that recovery to gather strength. Meanwhile, among the long-run factors, it is widely recognized that human capital investment, especially education, is vital to economic growth. Acting in combination with other forms of capital, human capital can lead to increasing returns ([Romer 1986]; [Barro and Sala-i-Martin 1990]). Moreover, since education is a core value of the Filipino people that is enshrined in the Philippine Constitution of 1987, an investigation of the role of education in the growth process is warranted.

To begin with, this paper examines the various short-run macroeconomic policy reforms that the Philippines has pursued to minimize unwanted business fluctuations. Then, in relation to growth over the long run, the paper assesses the role that human capital accumulation, focused on education, has played. There is no question about government support for basic education. But in view of the important contribution of higher education to technological progress, the major source of long-run growth, public policy needs to pay more attention to it [Canlas 2015].

Moreover, since economic policy reforms dating back to 1986 have sought to integrate the Philippines with the rest of the world's economy, the growth effects of foreign-trade policy reforms are useful to investigate. For instance, since 1986, political administrations have in succession pursued trade and investment liberalization, a policy measure that can be relied on to trigger growth over the long run.

The second section discusses the macroeconomic policy reforms designed to minimize unwanted business fluctuations. The third section looks at key aspects of capital accumulation that have long-run growth effects, focusing on human capital. The fourth section concludes the paper.

2. Macroeconomic policy reforms

Macroeconomic polices are intended to provide a stable and predictable environment for the private sector. Minimizing risk and uncertainty is vital in enabling households and enterprises to realize their consumption and investment plans, elements of aggregate demand that support growth.

Both fiscal and monetary policies have long been recognized as constraints to sustained growth in the Philippines, a point that was stressed in Canlas, Khan, and Zhuang [2008] and reiterated by the National Economic and Development Authority [2010]. Fiscal policy is often singled out as the most binding constraint to the country's sustained growth, particularly, the relatively low tax effort, defined as the proportion of tax revenues to GDP. Fiscal and monetary policies, however, are closely related, and are commonly viewed in tandem.

Fiscal policy encompasses measures that affect the size of the public debt, including taxation and government spending. Monetary policy spans policies affecting the composition of that debt between money and non-interest-bearing liabilities of the government. When the monetary authority, the *Bangko Sentral ng Pilipinas* (BSP), accommodates by lending to the government to finance the latter's budget deficit, money supply rises, which constitutes the non interest-bearing liabilities of the government. However, when the monetary authority does not accommodate, then the government through the National Treasury issues interest-bearing debt claims. In the short run, the choice of financing a deficit may entail differential impacts on aggregate output and the general price level.

2.1. Fiscal policy

Any deficit in the national government budget has to be financed. When the government borrows to finance the deficit, the public debt rises, resulting in heavier debt servicing. The fiscal history of the Philippines indicates persistent deficits in the national government budget. In the 1970s, for instance, the Philippine government pursued an expansionary fiscal policy in an attempt to ward off the recessionary

effects of the two oil price shocks in 1974 and in 1979. The Philippines entered the 1980s with a large public debt, largely foreign. When interest rates rose on a global basis in the early 1980s as a result of disinflation moves by the US Federal Reserve Board, the government found debt servicing quite burdensome, eventually forcing the government to default on foreign-debt servicing.

Following the debt moratorium and tapping of a standby loan from the IMF, the government resorted to fiscal and monetary tightening. That ushered in the recession of 1984-1985, the longest in the postwar economic history of the Philippines, in which real GDP declined 11 percent during the two-year period.

The fiscal position of the government has long been at the core of the liquidity crises repeatedly faced by the Philippines. In a small open economy like the Philippines, the current-account deficit is identically the same as the budget deficit of the public sector and the savings-investment gap of the private sector. Table 2 shows such a decomposition of the current-account deficit three years before the government declared a debt moratorium. It is shown that the budget deficit of the government as a percentage of GDP, after a near-balance in 1980, rose to 4.8 percent in 1981 and ballooned to 5.3 percent in 1982. It moderated to 3.3 percent following the declaration of a debt moratorium in 1983.

TABLE 2. Current account, consolidated public sector account, and savings-investment gap as percentage of GDP

Year	Current account	Consolidated public sector account	Savings-investment gap
1980	(5.9)	0.46	(6.4)
1981	(6.2)	(4.8)	(1.4)
1982	(9.0)	(5.3)	(3.7)
1983	(8.3)	(3.3)	(5.0)

Sources of basic data: Bangko Sentral ng Pilipinas for current account; Department of Finance and Department of Budget and Management for consolidated public sector account. Savings-investment gap is calculated as a residual.

The problem posed by the budget deficit of the national government returned in 1990, when the budget deficit reached 4.8 percent of GDP. Fiscal policy was subsequently tightened, forcing the consolidated public sector account to moderate to 2.1 percent of GDP in 1991. Real GDP growth slowed down to 0.5 percent that year.

A large government budget deficit as a percentage of GDP may also be an offshoot of weak economic growth. The tax system has automatic stabilizers that lose their vitality in an economy that's slowing down. The stabilizers include revenues from personal income and corporate income taxes. This was evident in 2009, when the budget deficit of the national government swelled again to 3.9 per cent of GDP as a result mainly of the economic slowdown that emerged in the

aftermath of the 2008 global financial crisis. And so in 2010, the fiscal position of the government was still deemed as the most binding constraint to growth in the Philippines, triggering earnest calls even in government for fiscal reforms.

It is well recognized that government spending at all levels has to be reined in, while protecting core values in education, health, and infrastructure. But more importantly, it is widely agreed that insofar as raising the tax effort is concerned, there is still plenty of room for improvement. Table 3 shows figures on the tax effort (total tax revenues divided by GDP for the given year) for selected years. In the years prior to the 1983 foreign debt crisis, the tax effort was declining and averaging only about 10 percent each year. In 1986, a series of measures aimed at improving tax collection and tax administration started. From about 10.6 percent in 1985, the tax effort improved, peaking at 17 percent in 1997 before it weakened again.

TABLE 3. Tax effort (in %), selected years

Year	1980	1981	1982	1985	1990	1995	1997
Tax effort	11.4	10.3	9.9	10.6	14.1	16.3	17.0

Note: "Tax effort" is defined as total tax collection divided by GDP.
Source of basic data: National Statistical Coordination Board, Philippine statistical yearbook.

In 1986, following the restoration of democratic political institutions, the administration under the leadership of President Corazon Aquino instituted a tax reform package. One major motivation for these reforms stemmed from the recurrent liquidity crises of the past that were rooted in the recurrent budget deficits of the government. In addition, the introduction of foreign-trade policy reforms gave rise likewise to the need to strengthen the internal tax system [Canlas 2000]. The Aquino administration started an import liberalization and tariff reduction program. As border or customs tariffs and trade taxes declined, strengthening the internal tax system became an imperative, particularly, personal and corporate income taxes and indirect taxes. Since reliance on foreign-trade taxes was being reduced, internal tax collection had to increase to compensate for the foregone border taxes. Table 4 shows the declining long-term shares of customs tariffs to total taxes and the increasing shares of internal taxes.

TABLE 4. Share of foreign-trade and internal taxes (in %)

Tax type	1980	1985	1990	1995	1997
Internal	56.9	69.4	68.5	67.7	76.4
Customs	38.0	27.8	30.2	31.4	23.0
Others	5.1	2.8	1.3	0.9	0.6
Total	100	100	100	100	100

Source: National Statistical Coordination Board, *Philippine statistical yearbook*

In 1987, President Aquino issued an Executive Order that introduced a 10-percent value-added tax on all sales transactions not explicitly excluded from the first Executive Order on value-added tax. In addition, a Republic Act was enacted that amended the National Internal Revenue Code. The latter introduced a "simplified net income taxation" for the self-employed and professionals in an attempt to widen the tax base, accompanied by a reduction in marginal tax rates.

The Ramos administration, which succeeded Aquino's in 1992, resumed the tax-reform program. It expanded the coverage of the value-added tax law. In 1998, the end of the Ramos term, a Republic Act called the Comprehensive Tax Reform Program was enacted. The program further sought to expand the tax base while reducing marginal tax rates. One outcome of the reform measures covering tax policy and administration during the Ramos years was a significant increase in the tax effort. In 1997, the tax effort peaked at 17 percent, enabling the national government to post a budget surplus for the first time since the late 1970s.

In 1998, the Estrada administration took over the reins of government. The budget deficit of the national government expanded as spending rose without any accompanying tax measure. Mr. Estrada was unseated in 2001, but the imperative to raise tax revenues re-emerged.

The Macapagal-Arroyo administration assumed power in 2001. The tax effort weakened during this administration, down from 16.9 percent prior to the 1997 Asian financial crisis to 12.4 percent in 2004. And so pressure mounted to enhance tax collections. In response, the administration caused the enactment of a Republic Act called the Reformed Value-added Tax, which expanded coverage and raised the rate to 12 percent from 10 percent in 2007.

In 2010, the tax effort remained a major challenge to the administration of President Benigno S. Aquino. The latter had shepherded the enactment of a law in 2012 that restructured taxes on cigarettes and alcoholic beverages and indexed them to inflation. Accompanied by disciplined government spending, the budget deficit of the national government declined to about 2 percent of GDP in 2012.

Moving forward, the tax reform program will continue to rely a great deal on internal, rather than, border taxes. For direct taxation, this strategy calls for strengthening collection and administration of personal income and of corporate income taxes. A noticeable trend is the growing share of indirect taxes to total tax revenue mainly on account of improvements in value-added tax collection.

With the share of indirect taxes increasing, questions about tax incidence generally crop up. Indirect taxes are considered regressive since the burden on low-income taxpayers is disproportionately large. As a proportion of earned income, poor people pay a larger amount in taxes. There is little that can be done to reduce such burden, except to make government spending progressive, that is, low-income taxpayers should benefit more from any additional unit of government spending. In line with making government spending progressive, the PNoy administration has prioritized some spending programs in the national

government budget for low-income households, such as, the "conditional cash transfer" program for the poor.

2.2. Monetary policy

At this point, there is wide agreement among economists that monetary policy should be based on rules rather than discretion [Kydland and Prescott 1977]. The main reason for rules is to minimize the uncertainty and volatility that emanate from discretionary monetary policy. In doing so, monetary policy minimizes the risk from various sources that the private sector confronts.

Monetary policy rules in the Philippines have been evolving and undergoing refinements over time [Canlas 2012]. In the early 1970s, following the decision to allow the world's major currencies to go on a generalized float against one another, the monetary authority followed suit by adopting a flexible exchange rate system. However, the central bank as monetary authority reserved the right to intervene in foreign-exchange markets to keep the exchange value of the Philippine peso against the US dollar within a targeted band. The central bank observed exchange-rate targeting as a monetary policy rule.

Under exchange-rate targeting, in which the central bank tried to keep the nominal exchange rate within a narrow band, the system in place resembled a fixed exchange-rate system [Canlas 2002]. When the central bank embarked on an expansionary monetary policy, the country's inflation rate exceeded that of the US, thereby making imports from the latter attractive. As the demand for imports increased, the demand for US dollars likewise rose. When the central bank accommodated, the official foreign reserve assets that it held declined. The erosion continued amid non-stop inflationary policy. The situation eventually triggered a speculative attack against the Philippine peso, thereby accelerating the erosion of official foreign reserves. When the latter fell to a critically low level, the economy experienced serious liquidity problems, resulting in a balance-of-payments crisis and an abandonment of narrow exchange-rate targeting.

The central bank then allowed the exchange rate to move within a wider band. At the same time, it changed its policy stance and embraced monetary-aggregate targeting as monetary policy rule. One factor that influenced the adoption of such a monetary policy rule stemmed from the fact that in the 1990s, the Philippines was still tied to an IMF program. In this context, the conduct of fiscal and monetary policies was based on financial programming techniques that the IMF imposed on client countries experiencing balance-of-payments crises.

From the standpoint of the IMF, a balance-of-payments crisis stems from an excess of aggregate demand over aggregate supply. Demand-management techniques are thus deemed essential. Inflationary monetary policy is to be curtailed. Money demand and supply need to balance. Disinflationary monetary policy means money supply growth has to decline. In the short run, however, disinflation results in adverse output effects.

Disinflation and recession occurred in the early 1980s, after the Philippine government declared a moratorium on foreign debt servicing and it tapped a standby loan from the IMF for the needed liquidity. Sudden tightening of monetary (and fiscal) policy led to the recession of 1984-1985.

Monetary-aggregate targeting had its downside. Demand for money could be unstable at times, making such targeting ineffective. In 2002, the new BSP as monetary authority adopted inflation targeting.[1] Under this monetary policy rule, the BSP announces a target inflation rate and uses its array of monetary policy tools to achieve the inflation target. When, for instance, the actual inflation rate exceeds the target, the monetary authority may cause interest rates to rise to tighten money supply and curb inflation. It is important for the BSP to maintain constant communication with the public so that its intentions are properly communicated and its messages shorn of uncertainty to the extent possible.

Inflation targeting requires that the BSP has both policy and instrument independence. Policy independence means that the fiscal authority does not influence BSP policy making. By instrument independence, the BSP must be equipped with enough tools of its own to achieve its inflation targets. In line with this independence, an institutional reform in 1993 created an independent BSP. One of the important provisions of the law calls for a monetary board; majority of the board's members are appointed by the Philippine president from the private sector. Prior to this reform, members of the president's cabinet who sat in an *ex-officio* capacity dominated the monetary board.

A prior issue is this: Is inflation a monetary phenomenon? Friedman said that "inflation is always and everywhere a monetary phenomenon". With a quantity theory of money in mind, if the central bank increases the money supply from a position of balance, then the real money stock exceeds the demand for it. To restore balance, the general price level must rise, which means that inflation rate, defined as the percentage change in the general price level, must rise.

Canlas [1992] tested a quantity theoretic model of inflation in the Philippines. The theoretical model implies a one-for-one impact of money growth on the inflation rate. Some econometric techniques—including first-order differencing for stationarity, finding the optimal lag length, and Granger causality tests—are put to work. Time-series data are used. For the period 1973-1990, the regression results show that money growth has a contemporaneous positive effect on the inflation rate, but it is less than one-for-one. The optimal lag length of the effect of money growth on inflation using Hsiao's test [1981] is shown to be one year; in subsequent regressions, however, the effect of money growth lagged one-year is insignificant. Overall, there is empirical support for an inflation model based on the quantity theory of money.

[1] For an exposition on the intellectual development of inflation targeting, see Svensson (1999a, 1999b).

Since the adoption of inflation targeting as a monetary policy rule in 2002, the general price performance of the Philippine economy has improved tremendously. Over the period 2005-2012, the inflation rate averaged only 5 percent each year, except in 2009, when relative-price shocks emanating from food and energy products intervened and caused the inflation rate to increase to 8 percent that year. Since then, the inflation rate has again moderated to an average of about 4 percent each year.

Monetary policy can be trusted to promote growth insofar as it dampens inflationary expectations. As the latter is dissipated, interest rates decline with salutary effects on investment. An increase in investment is expected to support growth. However, an increase in physical capital is subject to diminishing marginal productivity, which in the long run dampens growth. The challenge, therefore, is to overcome this tendency towards diminishing marginal productivity in order to generate long-run growth.

3. Towards long-run growth

Proper conduct of macroeconomic policies can be trusted to minimize unwanted business fluctuation, a phenomenon to which all market-oriented economies are exposed. Having stabilized the economy, the associated major challenge is ushering in self-sustaining growth. This section looks at factors that contribute to long-run growth.

3.1. Investing in human capital

A major force that propels growth in the long run emanates from the accumulation of human capital, which is commonly associated with the knowledge and skills, or efficiency units, which people bring to the workplace. Given diminishing marginal productivity of physical capital, accumulation of the latter alone is not sufficient to yield positive growth in the long run. The model of Solow-Swan [1957] emphasized the importance of investment for growth.[2] It is insightful in terms of accounting for growth in a given country, but it is not designed to account for growth convergence in a large cross-section of heterogeneous countries. Modern economic growth theory, or what is often referred to as endogenous growth, has thus extended the Solow growth model in trying to account for long-run growth in a number of developed countries and to account for convergence (or lack of it) in a large sample of countries.[3]

Human capital accumulation takes various forms, including investments in education, training, health, and nutrition. Health investments enable people

[2] See Canlas [2003] for tests of the Solow model in the Philippine context.
[3] For an exposition on the origins and key doctrines of endogenous growth, see Romer [2000].

to develop their physical skills, such as manual dexterity and visual acuity.[4] However, it is education and training that are popularly linked to human capital investments. Various levels of education, for instance, are credited with helping raise literacy and cognitive skills and equipping people with knowledge and scientific skills. Moreover, human capital investment is associated with other aspects of household behavior, including desired family size and labor force participation (Becker, Murphy, and Tamura [1990]; Tamura [2006]). As a result, many countries, especially those that have succeeded in achieving growth in real GDP over a long-run period, have made it a point to invest in quality education at all levels.

In empirical studies that seek to determine the sources of growth, much of the growth stems from total factor productivity (TFP). The latter refers to the efficiency in use of all factors of production, e.g., labor and capital. The role of education in enhancing TFP is well understood and widely accepted in the economics profession. It seems clear that education and training equip people with efficiency units that are useful in the workplace [Becker 1961, 1964]. On the job, people accumulate more skills, which further raise their human capital, as Mincer [1962] emphasized.

At the same time, however, family members' uses of time include non-market activities—such as attending to the education, health, and nutritional needs of children—which lead to the accumulation of human capital that eventually gets transmitted within the household across generations [Becker 1965]. In countries that are able to produce across time highly trained and educated workers who can master production techniques that continuously emerge in a modernizing economy, aggregate production efficiency is increased in the long run, with positive effects on TFP.

Following Solow [1957], Denison [1962], and Jorgenson and Griliches [1967], the growth rate of output is decomposed into the sum of the growth of labor and capital plus TFP, which is taken as a residual. Early empirical studies tended to show that much of the growth rate of output stems from growth of TFP. The latter is viewed as technological progress, which emanates from a variety of factors, including research and development (R&D) or knowledge production, and realization of scale economies. Technological progress follows as a matter of course from knowledge production, which is human-capital intensive and has the dimensions of a public good [Grossman and Helpman 1989]. That is, knowledge generated by one firm may spill over to all firms in the industry. And so as TFP improves, the tendency towards diminishing marginal productivity is overcome, resulting in positive growth rates of output over a long period of time.

[4] For empirical tests supportive of the positive growth effects of education on output growth using an endogenous growth model, see Benhabib and Spiegel [1998].

Attempts to decompose the sources of output growth in the Philippines shows that in the 1980s and the 1990s, much of the growth of output was due to increases in labor and capital, while TFP contributed only a small proportion, as shown in Table 5. In the 1980s, TFP was a minus 1.62 percent. This turned positive 0.25 percent in the 1990s, accounting for 9.9 percent of the growth rate of real TFP. Over the period 2001-2006, TFP gained strength and increased to 2.4 percent, which is about 50 percent of real GDP growth rate.

TABLE 5. Total Factor Productivity in the Philippines

Period	Growth of capital	Growth of labor	Total Factor Productivity
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: Table 2.9 in Canlas, Cham, and Zhuang [2009]

To account for the improvements in TFP, it is insightful to note the trends in educational attainment in the Philippines and its impacts on the skill composition of the labor force. A rising share of skilled workers normally contributes to TFP improvements.

3.2. Investing in education

Recognizing the significance of education in the process of economic growth and development, the Philippine Constitution of 1987 provides for allocating the biggest proportion of the expenditure program of the national government budget to education. The national government has long been the major provider of education in the Philippines, particularly, basic education, which consists of elementary and secondary education levels. The latter are provided without out-of-pocket costs to parents who enroll their children of school age in public schools.

At the tertiary education level, the national government runs a network of state colleges and universities, wherein tuition fees are charged, but at subsidized rates. The rest of the demand for tertiary education is met through private colleges and universities.

Moreover, the government supports skills training through a system of private post-secondary schools offering technical and vocational education and training. These private institutions co-exist with government-run institutes.

Table 6 shows the distribution of workers by educational attainment. It is seen that the proportion of unskilled workers (those with only elementary schooling) has over the past two decades been declining. Meanwhile, the share of semi-skilled to skilled workers (those with at secondary and tertiary schooling) has been rising.

TABLE 6. Employment by educational attainment (in %)

Education	1991	2001	2006
Elementary school graduate	24.2	19.2	16.8
High school graduate	18.1	23.2	24.9
Tertiary and above	10.9	13.2	14.4

Source of basic data: National Statistics Office, *Philippine labor force survey*, various issues

Investments in education and training transmit growth through another mechanism. By narrowing the differentials between earnings, income inequality is reduced. Persistent income inequality tends to be deleterious to growth in so far as such inequality raises political pressure to implement redistributive programs that are financed by raising taxes. Raising taxes on personal and business incomes tends to erode the marginal productivity of labor and capital that can be privately captured, with dampening effects on capital accumulation, both human and physical, and on growth. However, by reducing the proportion of poor individuals and households, political pressure for redistribution may be eased.

3.3. Technological progress, trade policy, and growth

It is widely known that growth comes not just by producing increasing quantities of the same good, but also by producing new products of ever-increasing quality [Stokey 1995]. The growth of Apple Company, for example, comes not from producing the same first-generation Mac Book or iPad but from making newer and more powerful versions of these products. Moreover, further growth is obtained not by selling in the same market but by accessing new markets for an expanding array of new products. Trading countries differ in their endowments of knowledge capital. The developed countries with large endowments of knowledge capital do a good deal of R&D and are thus able to produce and trade a wide range of new products [Grossman and Helpman 1989]. Over time, developing countries that adopt open trade regimes may acquire production knowledge about some of these new products through imitation, with salutary effects on output growth. Clearly, technological progress and trade policies matter a lot for growth.

Trade in intermediate products is one of the fastest growing segments of international trade. These intermediate products are normally the product of investments in R&D; they lie at the core of an increasing number of new products of higher quality. In the crop sector of agriculture, for example, the discovery of high-yielding seed varieties has significantly raised the yields per hectare of rice and corn. In information technology, the microchip revolution has enabled the manufacture of supercomputers with huge memories and storage capacity and

allowed various industries in the service trades, such as banking and finance, and retail and wholesale trade, to exponentially increase their productivity.

The rise of intermediate products emerging from R&D is taking place in a system involving separable and multi-stage production processes. This has given rise to outsourcing. Firms in developed countries subcontract to firms in less developed countries the labor-intensive stages of production, for instance. But this can also be done under a vertical-integration arrangement if the firm from the developed country finds it more efficient to do so.

Considering that R&D yields knowledge that spills over to entities beyond the R&D proponents themselves, there is a public policy concern that it may be under-produced. Third parties are able to capture the returns from R&D but the original R&D proponents may not be fully compensated. People tend to invest only up to the marginal rate of returns that they can appropriate. If the private returns fall short of the social rate, then there is room for some form of subsidies to avoid under-investment in knowledge production.

3.4. Philippine trade policy reforms

In 1986, the Philippine government ushered in some trade policy reforms aimed at integrating the economy with the global economy and make local firms internationally competitive. To kick-start this reform process, the government liberalized imports and embarked on a tariff-reduction program. Later on, it also liberalized entry of foreign direct investments.

In the 1950s, trade policy was based on import substitution. The government encouraged domestic firms to manufacture goods that at the time were being imported in large amounts, ostensibly to save on scarce foreign exchange and to "learn by doing". Local firms were protected from competing imports through high import tariffs and quantitative restrictions, using infant-industry arguments. The firms, however, relied on imported capital equipment and intermediate products. Since they were selling their products solely in the domestic market, the goal of saving on foreign exchange was not achieved. Moreover, since the Philippines was starting with a low human capital base, new products that could be exported did not emerge. The foreign exchange earnings of the country were derived largely from exports of agricultural and mineral products. Since these foreign exchange earnings were not adequate to finance the import needs of the import-substituting industries, the country experienced recurrent liquidity problems, accompanied by the collapse of a fixed peso-US dollar exchange rate. Eventually, reliance on import substitution declined. Import liberalization and tariff reduction combined to shrink the size of import-substituting industries.

In 1994, the Philippine acceded to the World Trade Organization, which was anchored on a "most-favored nation principle". Under this principle, tariffs and other commercial policies extended to one member country of the World Trade Organization cannot be withheld from other member countries. In

addition, the Philippines has actively participated in regional preferential trading arrangements. One of these is the ASEAN Free Trade Area-Comprehensive Effective Preferential Tariff, which envisions non-tariff barriers among member countries, starting with manufactured products, and later on, extended to trade in agricultural goods and in services. The arrangement has evolved: In 2015, ASEAN is committed to instituting a single-market arrangement.

Today the Philippines is a small open economy that is integrated with the rest of the world economy through trade in commodities, securities, and national currencies. Greater international labor mobility is also envisioned. The country adopts a flexible exchange-rate system and allows international mobility of capital. It has significantly reduced its public debt as a proportion of GDP, and its sovereign debt papers are nearing investment-grade status.

4. Concluding remarks

Several development observers regard the Philippines at this point as an emerging economy that is poised to join the Southeast and East Asian economies that are now considered newly industrializing. This optimism derives largely from the structural reform program that has been pursued by political administrations in succession since 1986. The policy reforms may be broadly classified into the following: short-term macroeconomic policies designed for stable growth; and long-term structural policy reforms aimed at sustained and broad-based growth.

The importance of short-run stabilization may be appreciated by taking a historical perspective. For nearly four decades since the 1950s, growth in the Philippines was hampered by inappropriate macroeconomic policies that resulted in unwanted volatility and business fluctuations. Political administrations since 1986 have in succession tried to address these concerns. Beginning in 1986, following the dismantling of martial-law rule and the restoration of democratic political institutions, the administration exerted efforts to strengthen the fiscal position of the national government by instituting a responsible deficit-reduction program. Monetary policy was made independent with the enactment of a law that established the BSP as a monetary authority independent of the fiscal authority. These measures have ushered in economic recoveries from balance-of-payments crises and GDP declines, while putting a lid on inflation.

Moreover, attention has been paid to growth-enhancing reforms, such as increased investments in capital broadly defined to include human and knowledge capital, in an effort to achieve long-run growth. In addition, the government pursued trade liberalization policies that are anchored on import liberalization and tariff reduction. The government also liberalized foreign direct investments, which allowed a hundred percent ownership in several industry areas; restrictions or limits on foreign ownership were explicit in the so-called negative lists that over time are being shortened. The privatization of government

firms that previously monopolized some industry sectors—such as oil and petroleum, commercial banking, and telecommunications—was pursued.

The economy has responded positively to these policy reforms. In 2001, the economy recovered from a political shock and posted a GDP growth that has been sustained in spite of the intervention of shocks like the September 11 terrorist attack, the global financial crisis of 2008, and the Eurozone debt crisis of 2012. The economy has achieved sufficient resilience as it became integrated with the global economy through trade in commodities, securities, and national monies. Entering the second decade of the 21st century, the economy is expected to achieve a sufficiently high growth rate in real GDP with stable prices amid continuing challenges like the weak recovery in the US, the debt problems of some Eurozone countries, and the growth slowdown in China.

The current administration is restoring credible leadership at the top of the political ladder, and this is serving the economy well. Not only is the current political leadership committed to market-friendly policies; it is likewise aggressive in addressing concerns about good governance, including fighting corruption and strengthening the legal and judicial system. The latter is vital to making the infrastructure program of the government at both the national and local levels succeed. Since the program is anchored on public-private partnership, contractual performance and sound adjudication in case of contractual disputes are critical. Investors find these policy commitments quite appealing, which are necessary conditions to becoming an economic miracle.

Philippine National Oil Company
Alternative Fuels Corporation

References

Barro, R. [1994] "Economic growth and convergence", CS Press for International Center for Economic Growth, Occasional Paper no. 46.

Barro, R. and X. Sala-i-Martin [1990] *Economic growth*. New York: McGraw-Hill, Inc.

Becker, G. [1964] *Human capital: a theoretical and empirical analysis*. New York: Columbia University Press for the National Bureau of Economic Research.

Becker, G. [1965] "A theory of the allocation of time", *Economic Journal* **75**:493-517.

Becker, G., K. Murphy, and R. Tamura [1990] "Human capital, fertility, and economic growth", *Journal of Political Economy* **98**:S12-S37.

Benhabib, J. and M. Spiegel [1994] "The role of human capital in economic development: evidence from aggregate cross-country data", *Journal of*

Monetary Economics **34**:143-173.

Canlas, D. [1992] "Inflation in a low-income country: tests based on the quantity theory of money", University of the Philippines School of Economics Discussion Paper no. 9209.

Canlas, D. [1998] "Tax reforms in the Philippines", *Asian Tax Reforms: Issues and Results*, proceedings of an international symposium, Tokyo: Hitotsubashi University.

Canlas, D. [2002] "Monetary policy and exchange rate in the Philippines", Augustine H.H. Tan, ed., *Monetary and financial management in Asia in the 21st century*. New Jersey: World Scientific.

Canlas, D. [2003] "Economic growth in the Philippines: theory and evidence", *Journal of Asian Economics* **14**:759-769.

Canlas, D. [2012] "Business fluctuations and monetary policy rules in the Philippines: with lessons from the 1984-1985 contraction", presentation delivered as the *Bangko Sentral ng Pilipinas* Sterling Chair in Monetary and Banking Economics.

Canlas, D., R. Cham, and J. Zhuang [2008] "Development performance and policy", in D. Canlas, M.E. Khan, and J. Zhuang eds. chapter 2.

Canlas, D., M.E. Khan, and J. Zhuang eds. [2008] *Diagnosing the Philippine economy: toward inclusive growth*. London: Anthem Press.

Canlas, D. [2015] "Investing in human capital for inclusive growth: focus on higher education", paper presented on September 22, 2015 in observance of Development Policy Research Month, Philippine Institute for Development Studies, Metro Manila.

Denison, E. [1962] "Sources of growth in the United States and the alternatives before us", Committee for Economic Development, Supplement Paper no. 13.

Fischer, S. [1993] "Does macroeconomic policy matter? Evidence from developing countries", CS Press for International Center for Economic Growth, Occasional Paper no. 27.

Grossman, G. and E. Helpman [1989] "Product development and international trade", *Journal of Political Economy* **97**:1261-1283.

Hsiao, C. [1981] "Autoregressive modeling and money-income causality", *Journal of Monetary Economics*, 85-106.

Jorgenson, D. and Z. Griliches [1967] "The explanation of productivity change", *Review of Economic Studies* **34**:249-280.

Kydland, F. and E. Prescott [1977] "Rules rather than discretion: the inconsistency of optimal plans", *Journal of Political Economy* 473-491.

Lucas, R. Jr. [1988] "On the mechanics of economic development", *Journal of Monetary Economics* **22**:3-42.

Lucas, R. Jr. [1993] "Making a miracle", *Econometrica*, **61**:251-271.

Mincer, J. [1962] "On-the-job training: costs, returns, and some implications", *Journal of Political Economy* **70**:50-77.

National Economic and Development Authority (NEDA) [2010] *A strategic framework and action plan for inclusive growth.* Metro Manila.

Romer, P. [1986] "Increasing returns and long-run growth", *Journal of Political Economy* **94**:1002-1037.

Romer, P. [1990] "Human capital and growth: theory and evidence", *Carnegie-Rochester conference series on public policy* **32**:251-286.

Romer, P. [2000] "The origins of endogenous growth", *Journal of Economic Perspectives* **8**:3-22.

Sharma, R. [2012] *Breakout nations: in pursuit of the next economic miracles*. New York: W.W. Norton and Co.

Svensson, L. [1999a] "Inflation targeting as a monetary policy rule", *Journal of Monetary Economics* 607-654.

Svensson, L. [1999b] "Inflation targeting: some extensions", *Scandinavian Journal of Economics* 337-361.

Solow, R. [1957] "A contribution to the theory of economic growth", *Quarterly Journal of Economics* **70**:65-94.

Stokey, N. [1995] "R&D and economic growth", *Review of Economic Studies* **62**:469-489.

Swan, T. [1957] "Economic growth and capital accumulation", *Economic Record* **32**:334-361.

Tamura, R. [2006] "Human capital and economic development", *Journal of Development Economics* **79**:26-72.