“The role of productivity and the relative stagnation of the Philippines since the mid-twentieth century”

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THE ROLE OF PRODUCTIVITY AND THE RELATIVE STAGNATION OF THE PHILIPPINES SINCE THE MID-TWENTIETH CENTURY

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Abstract

The relative stagnation of the Philippine economy since the mid-1900s has been widely debated. It is argued that the negative divergence can be explained by low productivity growth and a lack of foreign direct investments. However, one lacks standardized annual series of comparable GDP and productivity figures covering the entire period from 1950 to the present. This paper attempts to respond to this challenge by proposing new PPP calculations of annual GDP for the years 1950–2023 for nine East and South-Eastern Asian economies. By establishing these figures, one can explain the relative Philippine stagnation compared to neighboring countries.

New calculations of labor, capital, and total factor productivity show that the Philippines lagged compared to the neighboring economies during the second half of the 20th century. Particularly, the lack of total factor productivity growth seems to largely explain the Philippines' relative fallback. This conclusion is confirmed by growth accounting and counterfactual estimations, suggesting that the missing growth of total factor productivity can explain the bulk of the relative decline in the Philippines. However, from 2011, the relative growth pattern seems to change, as the island economy shows higher economic and productivity growth rates than its surrounding countries.

The relatively weak economic growth and productivity development can be largely attributed to a dysfunctional and corrupt political system, which peaked during the last years of the Marcos dictatorship, 1965–1986. The predatory state system also contributed to bad infrastructure and an inefficient management culture, which discouraged domestic and foreign direct investments.

Keywords Asia, purchasing power parities, economic growth, productivity, growth accounting

JEL Classification E01, E02, E60, N15, N45

INTRODUCTION

The Philippines has been described as one of the most prosperous countries in Southeast Asia during the first decade after World War II. The inflow of foreign direct investments was high, and the standard of living in the Manila area was described as high compared to several neighboring countries (Summers & Heston, 1991; Medalla, 1998; Barro, 2002). Thereafter, the Philippines saw a relative decline for more than half a century.

This paper seeks to map the pattern of the relative stagnation, and the role productivity may have played. This is done by constructing a novel set of GDP per capita PPP figures for nine countries in the region, i.e., Hong Kong, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. These are calculated based on World Bank data and the Maddison Project database, which contains historical international macro series. They make a sound basis for comparing economic value creation and productivity growth.

The paper thereafter seeks to examine the role productivity played in the development by looking at labor, capital, and total factor productivity patterns. It concludes that low productivity growth, in particular low total factor productivity growth, played an important role in the divergence of the Philippine economy from its neighbors until around 2011. This was, to a large degree, a consequence of bad governance and management culture. The paper also traces a new trend during the last extended decade, when the Philippines at times showed higher growth rates than its neighbors.

1. LITERATURE REVIEW

1.1. Existing views

In an overview of the economic history of the Philippines, Hayes (2024, p. 1) argues:

"The Philippines was once a model of development and second only to Japan among east Asian economies. In the 1960s, when South Korea was a land of peasants, the Philippines was one of Asia's industrial powerhouses. It produced consumer goods, processed raw materials and had assembly plants for automobiles, televisions and home appliances. Chemical plants produced drugs. Scrap metal was imported and made into steel for ships and factories produced cement, textiles and fertilizer."

This view can be disputed if one looks at historical macroeconomic series, at least if one looks outside the Manila area. More importantly, the Philippine economy experienced a substantial decline compared to its neighboring economies from around 1960. Research literature basically gives two reasons for the relative decline: underinvestment and low productivity growth.

According to the Maddison Project database on historical macroeconomic indicators, the Philippines was in the middle of comparable economies in the region during the first six decades of the 20th century. She had a GDP per capita in purchasing power parities that was considerably lower than those of Hong Kong, Japan, and Singapore, about the same level as Malaysia, and higher than Indonesia, South Korea, Thailand, and Vietnam. (Maddison, 2001, pp. 142-151). This is described in Table 1.

Accumulated growth during the 1950s shows an impressive step up of 85 percent for Japan, 55.9 percent for South Korea, and the Philippines was number three with 40.3 percent accumulated growth. Thereafter, one finds Indonesia with 22.7 percent, Hong Kong and Thailand 21.4 percent, Vietnam 20.3 percent, and Malaysia and Singapore with –5.9 and –8.3 percent, respectively (Maddison, 2001, pp. 142-151; Bolt and Van Zanden 2025, pp. 631-671). The 1950s marked the last decade of comparably high growth of the Philippines compared to its neighbors.

Most of the research literature on why the Philippines' growth lagged its neighboring countries emphasizes low investment rates, in particular foreign direct investment, and low productivity growth. The Nobel laureate Paul Krugman once said, "Productivity isn't everything, but, in the

Table 1. GDP per capita in 2012 international dollars (PPP)

Source: Bolt and Van Zanden (2025, pp. 631-671), Maddison (2001, pp. 142-151), https://www.rug.nl/ggdc/historicaldevelopment/maddison/releases/maddison-project-database-2023

Country Year	Hong Kong	Indonesia	Japan	South Korea	Malaysia	Philippines	Singapore	Thailand	Vietnam
1820	1 132	827	1 317	816	961	931		909	840
1870	1 256	810	1 580	820	1 055	995	1 423	969	805
1902	1 810*	1 087	2 013	950*	1 018	1 073	2 297	1 250*	920*
1913	2 354	1 361	2 431	1 171	1 289	1 575	1 812	1 341	1 159
1920		1 409	2 974	1 429	1 786	2 055	1 932		
1929		1 702	3 665	1 496	3 220	2 252	3 323	1 264	
1938		1 655	4 257	1 935	2 515	2 295	3 363	1 317	
1950	4 082	1 280	3 062	998	2 485	1 706	3 572	1 302	1 049
1959	4 957	1 570	5 665	1 556	2 338	2 393	3 239	1 581	1 262

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long run, it is almost everything". He continued, "…a country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker" (Krugman, 1990, p. 11). The view is emphasized by Haynes (2020) in his widely known book on productivity. The most common measures of productivity are:

1. Labor productivity per employee (LPE).

2. Labor productivity per working hour (LPH).

3. Capital productivity (CP): measures output per unit of capital stock.

4. Total factor productivity (TFP) is residual productivity. It is attributable to innovation, technological, and organizational improvement. It reflects the combined efficiency of inputs. It is also labeled multi-factor productivity (MFP).

With this as a framework, Austria (1998a, 1998b, 2000) explains the relative decline of the Philippines, with reduced competitive power due to limited and even negative productivity growth. He especially points to the historical low TFP growth. In addition, he emphasizes the low rate of market-based investments. When the economy went through industrial reforms with more emphasis on free markets and profitable conditions for foreign direct investments, productivity and economic growth increased from the mid-1990s. This view is amplified by Kind (2000), who suggests that low productivity was probably the major reason for the relative Philippine decline.

One finds similar views in a recent quantitative study by Qian et al. (2018), which focuses on the low historical TFP growth. They claim labor and capital productivity growth were low for the Philippines since approximately 1960, when TFP growth was extraordinarily weak. Rodriguez (2010) argues that the combination of skilled labor and low TFP growth has been a major explanation for the migration of labor from the Philippines.

This has been confirmed in quantitative studies, suggesting that both LP and, in particular TFP grew more slowly in the Philippines than in its neighboring countries from around 1960 until the end of the 20th century. This view was upheld by Cororaton et al (1999, 2001, 2002, 2005), who made different estimates of TFP for Asian countries. Han et al. (2003) found a historical correlation between inefficient institutions, low productivity, and low economic growth in East Asia.

Catacutan (2022, pp. 990-998) and Amodia et al. (2024, pp. 1-26) estimated the Philippines' TFP growth and its determinants for the decades leading up to 2024. They found that improvements in domestic economic activity, terms of trade, a well-developed financial sector, and investment in education and infrastructure are imperative TFP determinants.

The estimated share of TFP in output growth turned into a more positive direction during the 1990s and continued in the 2000s (Cham & Canlas 2008, pp. 1-14). This is consistent with the results of Park and Park (2010, pp. 1-35), showing that some Asian economies transitioned from input-driven growth toward productivity-based growth around 2000. A study by Glindro and Amodia (2015, pp. 1-18) concluded that the share of TFP to potential output growth was very low in the Philippines until it rose significantly from 2002 to 2016. In the continuation of these findings, Felipe et al. (2022, pp. 327-342) conclude that a possible positive turning point occurred around 2011 when structural changes led to an increase in productivity growth, paving the way for more foreign direct investments.

In the last annual reports of the Asian Productivity Organization, APO (Nomura & Kimura, 2023; Nomura & Ho, 2024), historical lines on productivity developments are drawn. The calculations, not surprisingly, reveal that the countries with low historical growth had low productivity growth, in particular, low TFP growth. The Philippines experienced, according to this study, negative TFP growth for several years. In fact, the rates are so low that they can shed more light on the relative decline than any other explanatory variable. The conclusions were like those in a previous study (Qian, 2018).

2. METHOD

The paper applies a research approach used in established research literature on historical macro series (Grytten, 2022, pp. 181-202). To compare national economic performance, it is common to use GDP in purchasing power parities (PPP). The

OECD defines PPP as "the rates of currency conversion that equalize the purchasing power of different currencies by eliminating the differences in price levels between countries". PPPs are, in their simplest forms, price relatives measured in national currencies of similar products in different countries. For GDPs, PPPs can be calculated for all levels of aggregation. The method can be illustrated through different steps

GDP, Y, in year t, when it is calculated in national price levels and expressed in different national currencies, can be expressed in a price, P, volume, V, and currency or exchange rate, C, as stated in equation (1):

$$Y_t = P_t \cdot V_t \cdot C_t. \tag{1}$$

Countries have corresponding component ratios. In time series, these are calculated in base year, b, values:

$$\gamma_b = \pi_b \cdot \varphi_b \cdot \varepsilon_b. \tag{2}$$

Here, γ_b is the GDP level ratio, π_b is the price level ratio, φ_b is the volume ratio, and ε_b is the currency ratio, in base year b. The ratios for each country, j, are found by dividing each of its component parameters by the corresponding parameters of the reference country z. hence, one reaches ratios of GDP in country j and z in base year values, $\gamma_b^{j/z}$:

$$\gamma_b^{j/z} = \frac{P_b^j \cdot V_b^j \cdot C_b^j}{P_b^z \cdot V_b^z \cdot C_b^z}. \tag{3}$$

Since PPPs are defined as both a currency converter and a spatial price deflator, one needs to adjust for both different exchange rates and price levels. To make the GDP ratio in the base year in PPPs for country j compared to z, one adjusts for the corresponding price and currency ratios by adjusting for the price and currency ratios:

$$\begin{aligned}\gamma_{\psi,b}^{j/z} &= \left(\frac{\pi_b^{j/z} \cdot \varphi_b^{j/z} \cdot \varepsilon_b^{j/z}}{\pi_b^{j/z} \cdot \varepsilon_b^{j/z}} \right) \\ &= \left(\frac{P_b^j \cdot V_b^j \cdot C_b^j}{P_b^z \cdot V_b^z \cdot C_b^z} \Big/ \frac{P_b^j \cdot C_b^j}{P_b^z \cdot C_b^z} \right) = \frac{V_b^j}{V_b^z} = \varphi_b^{j/z}.\end{aligned} \tag{4}$$

Then, to reach GDP, Y, in purchasing parities, ψ, in country j compared to z, at base year, b, one corrects GDP for the difference in national currency rates and price levels:

$$\begin{aligned}Y_{\psi,b}^{j/z} &= \left(\frac{\pi_b^{j/z} \cdot \varphi_b^{j/z} \cdot \varepsilon_b^{j/z}}{\pi_b^{j/z} \cdot \varepsilon_b^{j/z}} \right) Y_b^j \\ &= \left(\frac{P_b^j \cdot V_b^j \cdot C_b^j}{P_b^z \cdot V_b^z \cdot C_b^z} \Big/ \frac{P_b^j \cdot C_b^j}{P_b^z \cdot C_b^z} \right) Y_b^j \\ &= \frac{V_b^j}{V_b^z} Y_b^j = \varphi_b^{j/z} Y_b^j = \gamma_{\psi,b}^{j/z} Y_{f,b}^j.\end{aligned} \tag{5}$$

This represents GDP expressed in a common currency at uniform price levels.

2.1. Data

The applied data are also taken from established research. The World Bank offers figures in PPPs expressed in international dollars of 2021 annually for the period 1990 to 2023, collected from official standardized national accounts in national statistical agencies. With a database stretching further back it is possible to calculate PPPs from 1960 by multiplying the GDP of country j in year t in fixed prices, f, $Y_{f,t}^j$, with the GDP ratio of country j to z in the values of base year, b, $\gamma_{\psi,b}^{j/z}$:

$$\begin{aligned}Y_{\psi,t}^{j/z} &= \left(\frac{\pi_b^{j/z} \cdot \varphi_b^{j/z} \cdot \varepsilon_b^{j/z}}{\pi_b^{j/z} \cdot \varepsilon_b^{j/z}} \right) Y_{f,t}^j \\ &= \left(\frac{P_b^j \cdot V_b^j \cdot C_b^j}{P_b^z \cdot V_b^z \cdot C_b^z} \Big/ \frac{P_b^j \cdot C_b^j}{P_b^z \cdot C_b^z} \right) Y_{f,t}^j \\ &= \frac{V_b^j}{V_b^z} Y_t^j = \varphi_b^{j/z} Y_{f,t}^j = \gamma_{\psi,b}^{j/z} Y_{f,t}^j.\end{aligned} \tag{6}$$

One then arrives at measurements for GDP per capita in 2021 purchasing power parities expressed in international 2021 dollars, 1960–2023. For the period before 1960, another source is needed, i.e., the Maddison database. In the database, national historical GDPs were first calculated into 1990 Geary-Khamis dollars and later into international 2011 dollars.

Splicing the Maddison series from 1950 with the combined series from the World Bank 1960–2023, put together in this paper and still using 2021 as the reference year, one reaches the annual GDP per capita in purchasing power parities of interna-

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tional 2021 dollars 1950–2023. Since the new series is based on data in local currencies and thereafter calculated into 2021 PPPs, they represent a hybrid between valid cross-border comparisons and national economic growth. Based on the data, the paper presents series for the nine Southeast and East Asian countries and the TEA countries of East Asia and the Pacific, i.e., Australia, Cambodia, China, Indonesia, Korea, Laos, Malaysia, Mongolia, Myanmar, Pacific Islands, Papua New Guinea, Philippines, Singapore, Thailand, Timor-Leste and aggregated world data (WLD).

The paper also compiles productivity data from different sources. The World Bank (2024) holds a dataset on productivity for the countries of the world from 1980 to 2018 while the Asian Productivity Organization (APO), in collaboration with Keio Economic Observatory (KEO) at Keio University, Tokyo, hosts a productivity database for Asian countries from 1970 to 2022 (Nomura & Kimura, 2023, pp. 135-139; Nomura & Ho, 2024, pp. 140-144). Both are based on fixed price calculations in dollars. These are valid and reliable sources. However, the present paper chose the latter since it covers more measures, a longer period, and is more recently updated. For the years 2022 to 2023, it is spliced with LPH data from the International Labor Organization (ILO, 2024), while LPE is drawn on data from the Center for Economic and International Studies (CEIS, 2024).

3. RESULTS

3.1. Economic growth

Figure 1 shows that in the 1950s, the Philippines was in the middle of a group of countries. In 1974, the Philippines was surpassed by South Korea, then by Thailand in 1980, and by Indonesia in 1987. Finally, Vietnam surpassed the Philippines in 2005. From the early 2000s, the Philippines' growth was more in line with the rest of the group. However, it remained in the position as the poorest per capita economy.

The Philippines' slowdown in growth can be demonstrated in relation to other countries. Table 2 reports decadal averages of ratios of GDP per capita. While the island state was ranked in the middle in the 1950s, it declined against all the others except for Indonesia, Vietnam, and the TEA group in the 1960s. The Philippines continuously lost ground until around 2010. Thereafter, the development has been in favor of the Philippines (ADB, 2025).

Table 3 reports maximum and minimum ratios. Compared to all its counterparts, except for Vietnam (1980), the Philippines reached its maximum ratio between 1951 and 1967, and its minimum ratio between 1992 and 2021, confirming the time of relative decline.

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671).

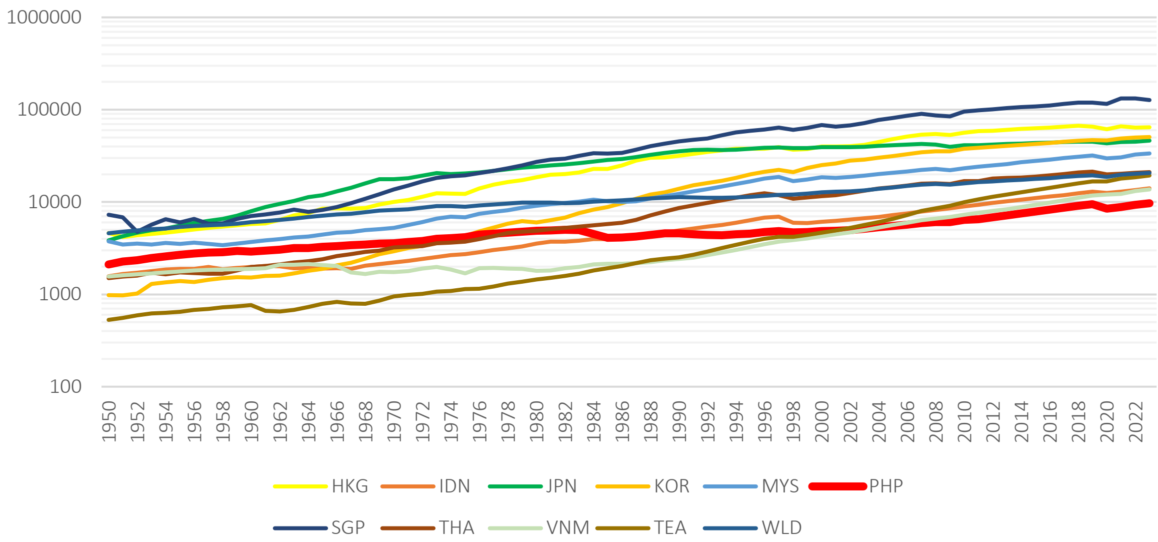

Figure 1. GDP per capita in international 2021 dollars, 1950–2023

Table 2. GDP per capita ratios, the Philippines vs other countries 1950–1923

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671).

Country	1950–1960	1960–1970	1970–1980	1980–1990	1990–2000	2000–2010	2010–2020	2020–2023
PHP/HKG	0.5310	0.4154	0.3146	0.1939	0.1262	0.1168	0.1260	0.1418
PHP/IND	1.4274	1.6344	1.5248	1.1299	0.7843	0.7568	0.7120	0.6841
PHP/JPN	0.4730	0.2726	0.2034	0.1610	0.1226	0.1361	0.1810	0.2022
PHP/KOR	2.0240	1.6521	0.9731	0.5332	0.2444	0.1764	0.1833	0.1853
PHP/MYS	0.7356	0.7351	0.5993	0.4448	0.2930	0.2673	0.2829	0.2865
PHP/SGP	0.4225	0.3637	0.2161	0.1353	0.0819	0.0698	0.0720	0.0716
PHP/THA	1.5457	1.3273	1.0831	0.7670	0.4296	0.3878	0.4112	0.4412
PHP/VNM	1.4886	1.7177	2.2860	1.9613	1.4485	0.9877	0.8314	0.7100
PHP/TEA	4.0113	4.2405	3.6747	2.4465	1.3160	0.8315	0.5841	0.4997
PHO/WLD	0.4906	0.4609	0.4639	0.4427	0.3955	0.3847	0.4398	0.4571

Table 3. Maximum and minimum GDP per capita ratios vs the Philippines, 1950–2023

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671).

Country	Max		Min	
	Year	Share	Year	Share
PHP/HKG	1955	0.5524	2007	0.1104
PHP/IND	1967	1.7986	2020	0.6745
PHP/JPN	1950	0.5489	1992	0.1193
PHP/KOR	1951	2.3263	2011	0.1678
PHP/MYS	1958	0.8366	1997	0.2584
PHP/SGP	1952	0.4907	2011	0.0659
PHP/THA	1957	1.7011	2007	0.3757
PHP/VNM	1980	2.7300	2020	0.7023
PHP/TEA	1963	4.6786	2021	0.4914
PHP/WLD	1959	0.5075	2001	0.3788

3.2. Growth periods

It is imperative to identify periods of different growth paces. By looking at the Philippine growth and its trends, one can map different periods of growth. The paper identifies polynomial trends by separating the observed time series, x_t, into a trend component, g_t, a cycle component, c_t, a seasonal component, s_t, and an irregular component, i_t,:

$$x_t = f\left(g_t, c_t, s_t, i_t\right). \tag{7}$$

An arithmetic approach to equation (7) gives the relationship:

$$x_t = g_t + c_t + s_t + i_t, \tag{8}$$

where i_t is considered a residual:

$$i_t = x_t - (g_t + c_t + s_t), \tag{9}$$

Here i_t and s_t are seen as part of c_t. Hence, a reduced form of equation (8) will be:

$$x_t = g_t + c_t. \tag{10}$$

It is possible to identify the components in equation (10) by adopting a Hodrick-Prescott filter (HP-filter). The filter minimizes the variance of c_t subject to a variation penalty in the second difference of $g_{t:}$

$$\min_{g_t} \sum_{t=1}^{T} (x_t - g_t)^2 + \lambda \sum_{t=2}^{T-1} \left[\left(g_{t+1} - g_t\right) - \left(g_t - g_{t-1}\right)\right]^2, \tag{11}$$

$(x_t - g_t)$ defines the cycle component, when $[(g_{t+1}$ $_- g_t) - (g_t - g_{t-1})]$ gives the difference of the trend growth from period t to period $t + 1$. λ controls the smoothness of the growth component in the time series. The higher the λ is, the smoother the trend line will be and vice versa. Common standards suggest a smoothing-parameter of $\lambda = 100$ for annual figures, $\lambda = 1{,}600$ for quarterly figures, and $\lambda = 14{,}400$ for monthly figures. The polynomi-

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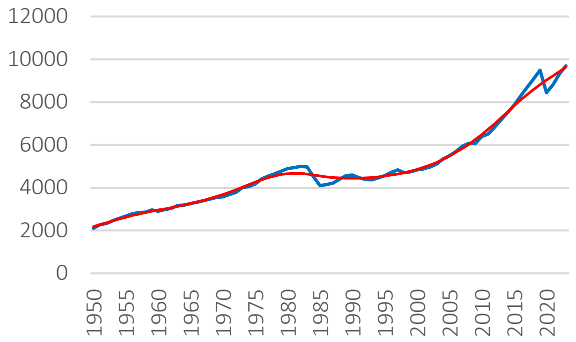
Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671).



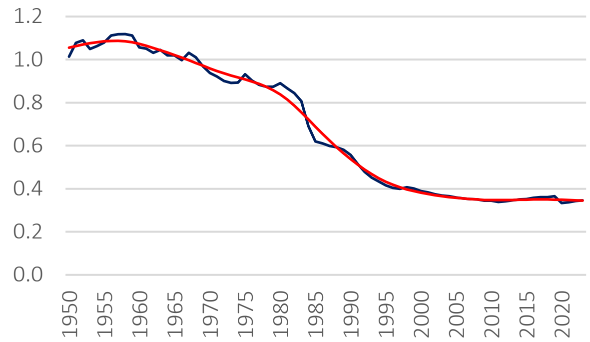


Figure 2. GDP per capita of the Philippines (left) vs R8 (right) in international 2021 dollars, 1950–2023 (trendlines in red)

al trends for the Philippines alone and the ratios to the eight countries of reference (R8) are shown in Figure 2.

Based on the trend calculations, it is natural to conclude with five relative growth periods, i.e.:

- 1950–1959: Golden Decade;
- 1959–1982: Relative Decline;
- 1982–2002: Stagnation;
- 2002–2011: Regaining Growth;
- 2011–2023: Comeback.

3.3. Compound growth rates

Table 4 reports compound growth rates for the sub-periods of the countries. In conclusion, the Philippine economy was among the winners in the 1950s and thereafter the big loser from 1959 to 2002, before it regained growth pace and came out better than most of its neighbors since 2011. For the larger period 1950–2023, the country was the poorest performer of the group but still grew at the same pace as the world economy.

Having established different periods of growth and relative growth patterns, it is natural to ask what caused the relative decline of the Philippine economy during the period 1959–2002, and the subsequent regained growth, mostly from 2011 onwards.

3.4. Productivity growth

One of the most common explanations is low productivity growth. Productivity can be measured in different ways:

- Labor productivity per employee (LPE), i.e., output per employee;

Table 4. Compound growth rates, 1950–2023

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671).

Country	Total	1950–1959	1959–1982	1982–2002	2002–2011	2011–2023
HKG	0.0368	0.0218	0.0570	0.0354	0.0427	0.0078
IDN	0.0305	0.0230	0.0291	0.0278	0.0425	0.0345
JPN	0.0347	0.0708	0.0573	0.0215	0.0055	0.0097
KOR	0.0555	0.0506	0.0668	0.0737	0.0367	0.0223
MYS	0.0304	–0.0068	0.0451	0.0330	0.0287	0.0280
PHP	0.0211	0.0383	0.0230	–0.0003	0.0307	0.0337
SGP	0.0400	–0.0108	0.0673	0.0423	0.0434	0.0214
THA	0.0369	0.0218	0.0470	0.0446	0.0335	0.0190
VNM	0.0302	0.0208	0.0011	0.0457	0.0559	0.0496
TEA	0.0506	0.0382	0.0335	0.0617	0.0820	0.0511
WLD	0.0208	0.0268	0.0226	0.0148	0.0256	0.0193

- Labor productivity per working hour (LPH), i.e., output per input working hours;
- Capital productivity (CP), i.e., output per unit of capital;
- Total factor productivity (TFP), i.e., residual output attributable to innovation, technological, institutional, and organizational improvement. It reflects the efficiency of how labor and capital inputs are used together.

By explicitly calculating GDP per man-hour, per employee, and capital units directly, the paper establishes different productivity measures. TFP is measured implicitly as a residual between total output and the contribution of combined inputs, i.e., capital input, *ci*, working hours input, *hi*, and labor composition, *lc*. Thus, one calculates labor productivity per employee, including self-employed, *LPE*, labor productivity per man year, *LPH*, capital productivity, *CP*, and total factor productivity, *TFP*, expressed in international 2021 dollars for country *j* in year *t*, according to the equations:

$$LPE_{\psi,t}^{j/z} = \frac{Y_{\psi,t}^{j/z}}{ei_{\psi,t}^{j/z}}, \tag{12}$$

$$LPH_{\psi,t}^{j/z} = \frac{Y_{\psi,t}^{j/z}}{hi_{\psi,t}^{j/z}}, \tag{13}$$

$$CP_{\psi,t}^{j/z} = \frac{Y_{\psi,t}^{j/z}}{ci_{\psi,t}^{j/z}}, \tag{14}$$

$$TFP_{\psi,t}^{j/z} = Y_{\psi,t}^{j/z} - ci_{\psi,t}^{j/z} - hi_{\psi,t}^{j/z} - lc_{\psi,t}^{j/z}. \tag{15}$$

3.5. Productivity development

Figure 3 reports LP based on the new GDP series. The curves reveal that LP growth for the Philippines was outperformed by the other countries until the late 1990s.

Figure 4 reports CP for the nine countries of comparison. The Philippine development from 1976 to 1985 was disastrous, with a recorded fall of 37.6 percent. Except for Vietnam, none of the countries of comparison performed poorer than the Philippines from 1970 to 2021.

TFP, depicted in Figure 5, was a central problem for the Philippines during its stagnation. For huge periods, the development was negative. Again, the development from 1976 to 1985 was disastrous, while there was a slow growth in recent years.

Table 5 sums up productivity growth during the different epochs of growth.

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671), Nomura and Kimura (2023, pp. 135-139), Nomura and Ho (2024, pp. 140-144), ILO (2024), CEIS (2024).

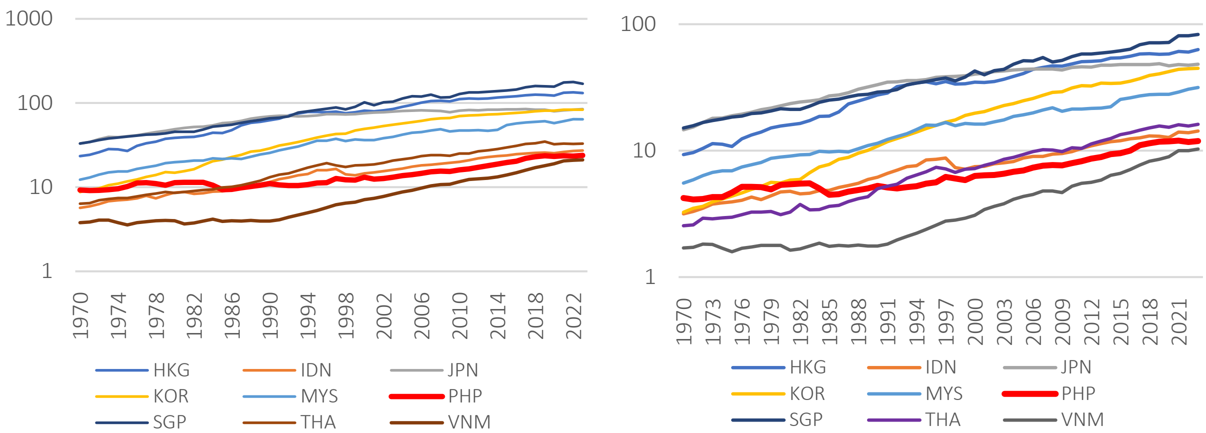


Figure 3. Labor productivity (output per employee left) and output per man-year in international 2021 dollars, 1970–2023

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Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671), Nomura and Kimura (2023, pp. 135-139), Nomura and Ho (2024, pp. 140-144), ILO (2024), CEIS (2024).

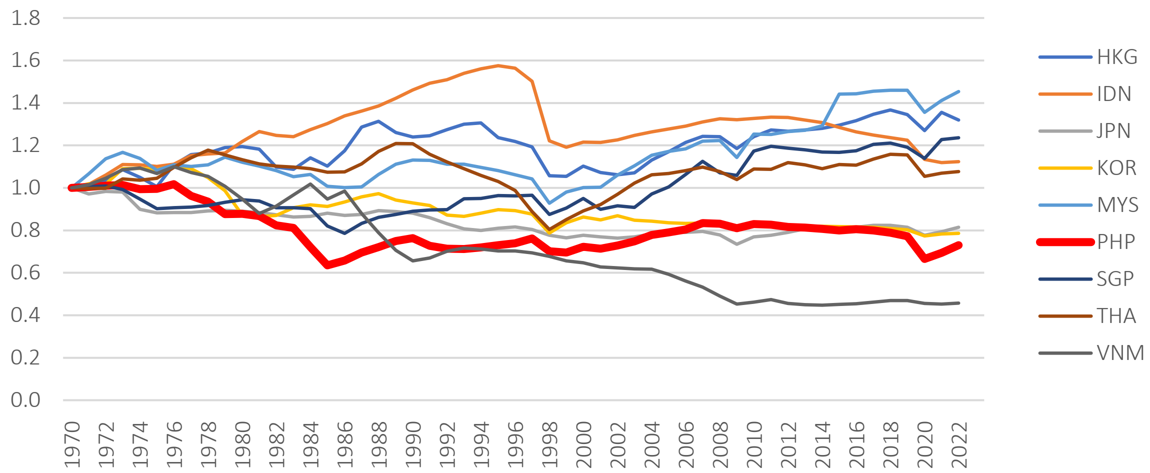

Figure 4. Capital productivity development, 1970–2022 (1970 = 1)

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671), Nomura and Kimura (2023, pp. 135-139), Nomura and Ho (2024, pp. 140-144), ILO (2024), CEIS (2024).

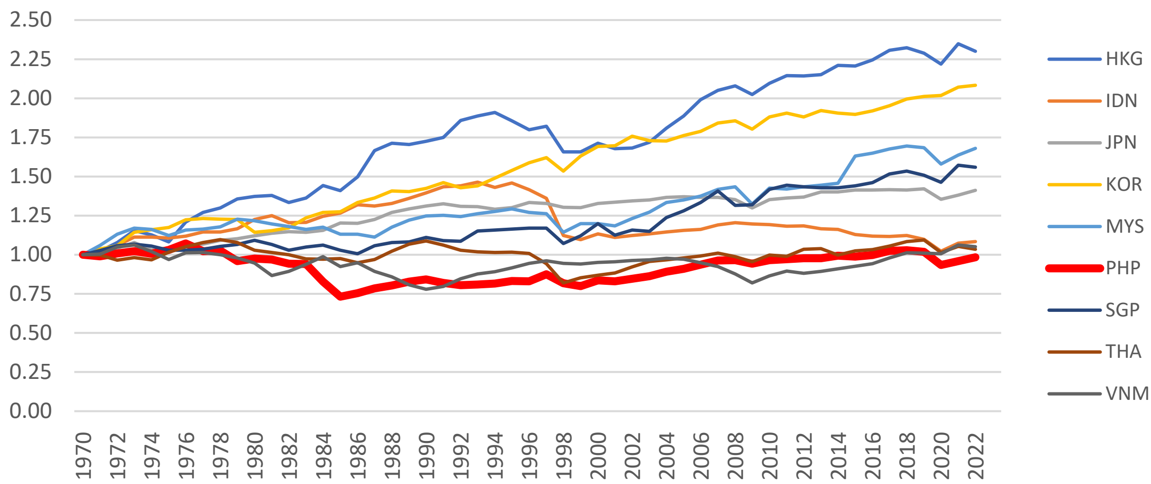

Figure 5. Total factor productivity development, 1970–2022 (1970 = 1)

Table 5. Productivity growth for sub-periods

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671), Nomura and Kimura (2023, pp. 135-139), Nomura and Ho (2024, pp. 140-144), ILO (2024), CEIS (2024).

Country	1960–1970			1970–1982			1982–2002			2002–2011			2011–2023		
	LPH	CP	TFP	LPH	CP	TFP	LPH	CP	TFP	LPH	CP	TFP	LPH	CP	TFP
HKG	0.050	0.010	0.027	0.048	0.008	0.024	0.039	–0.002	0.012	0.041	0.020	0.027	0.019	0.003	0.006
IDN	0.021	0.012	0.011	0.031	0.019	0.016	0.028	–0.001	–0.003	0.031	0.009	0.006	0.027	–0.015	–0.008
JPN	0.051	–0.004	0.019	0.043	–0.011	0.012	0.028	–0.007	0.008	0.010	0.002	0.001	0.004	0.004	0.003
KOR	0.055	–0.007	0.018	0.051	–0.012	0.013	0.067	0.000	0.020	0.047	–0.006	0.009	0.027	–0.005	0.008
MYS	0.030	0.004	0.010	0.044	0.006	0.014	0.031	–0.001	0.002	0.026	0.019	0.016	0.033	0.014	0.015
PHP	0.012	–0.009	0.007	0.022	–0.016	–0.005	0.008	–0.006	–0.005	0.028	0.014	0.016	0.031	–0.011	0.001
SGP	0.054	0.017	0.028	0.028	–0.008	0.002	0.036	0.001	0.006	0.034	0.030	0.025	0.030	0.012	0.016
THA	0.034	0.009	0.014	0.033	0.008	0.000	0.038	–0.006	–0.004	0.030	0.013	0.008	0.037	–0.001	0.004
VNM				–0.001	–0.007	–0.009	0.039	–0.019	0.004	0.048	–0.030	–0.008	0.053	–0.003	0.015

3.6. Overall findings

All in all, the productivity series reveal that the Philippines lost across all parameters relative to a group of countries it was compared to. However, the losses were less within LP, as productivity per employee and per man-year were 157.9 and 183.1 percent, respectively, higher in 2023 than in 1970. CP contracted by a devastating 28 percent, and TFP contracted by 1.6 percent.

In other words, the poor historical productivity performance of the Philippines can basically be explained by negative CP and TFP taking place until 1985. From then on, they show better performance. This is clearly mirrored in Figure 6.

However, in all the compared countries, CP and TFP lagged severely behind labor productivity. To examine the relative development over time, we compare the ratio of the Philippine productivity with the corresponding measures for the eight countries in the reference group (R8). The results of these calculations are shown in Figure 7.

When the productivity ratios developed surprisingly similarly until 1985, the CP and TFP ratios leveled out or even increased until 2009. From then on, they show stagnating trends again. The LPH and LPE ratios showed a pronounced negative trend until 1996, then a modest decline until 2010, and then an upward trend.

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671), Nomura and Kimura (2023, pp. 135-139), Nomura and Ho (2024, pp. 140-144), ILO (2024), CEIS (2024).

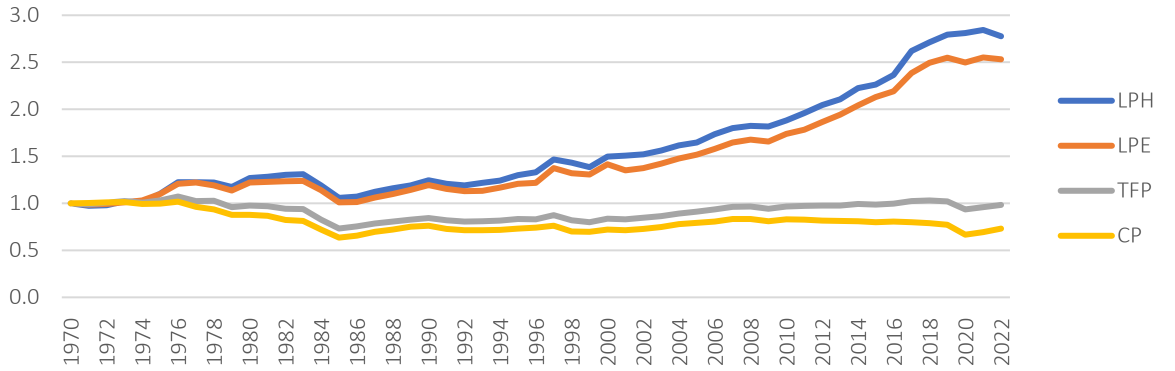

Figure 6. Productivity indicator development, Philippines (1970 = 1)

Source: World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, 631-671), Nomura and Kimura (2023, pp. 135-139), Nomura and Ho (2024, pp. 140-144), ILO (2024), CEIS (2024).

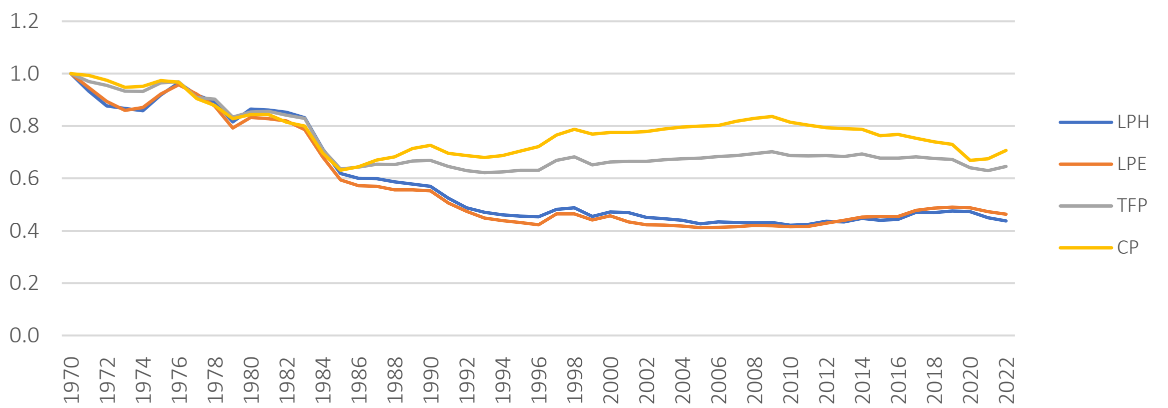

Figure 7. Productivity indicator ratios, Philippines: R8 (1970 = 1)

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3.7. Growth accounting

Growth accounting reports the impact of labor, capital, and TFP on economic growth. The basic principles depart with the Solow Model applied in a Cobb-Douglas function (Solow 1957, 312-320). Economic growth, dY, during a period t is a function of growth in capital, dK, Labor, dL, weighted with α and $(1\text{-}\alpha)$ respectively, and the growth of TFP, A:

$$\frac{dY_t}{dt} = \frac{dA_t K_t^{\alpha} L_t^{1-\alpha}}{dt} = K_t^{\alpha} L_t^{1-\alpha} \frac{dA_t}{dt} + A_t L_t^{1-\alpha} \frac{dK_t^{\alpha}}{dt} + A_t K_t^{\alpha} \frac{dL_t^{1-\alpha}}{dt}. \tag{16}$$

Applying the chain rule to calculate the terms involving the impact of changes in capital and labor inputs:

$$\frac{dK_t^{\alpha}}{dt} = \frac{dK_t^{\alpha}}{dK_t}\frac{dK_t}{dt} = \alpha K_t^{\alpha-1}\frac{dK_t}{dt},$$

$$\frac{dL_t^{1-\alpha}}{dt} = \frac{dL_t^{1-\alpha}}{dL_t}\frac{dL_t}{dt} = (1-\alpha) L_t^{-\alpha}\frac{dL_t}{dt}, \tag{17}$$

and plugging these into equation (16), one arrives at:

$$\frac{dY_t}{dt} = K_t^{\alpha} L_t^{1-\alpha}\frac{dA_t}{dt} + \alpha A_t K_t^{\alpha-1} L_t^{1-\alpha}\frac{dK_t}{dt} + (1-\alpha) A_t K_t^{\alpha} L_t^{-\alpha}\frac{dL_t}{dt}. \tag{18}$$

The growth rate of output can then be found by dividing by Y at time t:

$$\frac{1}{Y_t}\frac{dY_t}{dt} = \left(\frac{K_t^{\alpha} L_t^{1-\alpha}}{A_t K_t^{\alpha} L_t^{1-\alpha}}\right)\frac{dA_t}{dt} + \alpha\left(\frac{A_t K_t^{\alpha-1} L_t^{1-\alpha}}{A_t K_t^{\alpha} L_t^{1-\alpha}}\right)\frac{dK_t}{dt} + (1-\alpha)\left(\frac{A_t K_t^{\alpha} L_t^{-\alpha}}{A_t K_t^{\alpha} L_t^{1-\alpha}}\right)\frac{dL_t}{dt}. \tag{19}$$

By cancelling multiple appearance terms inside the brackets in equation (19), one arrives at equation (20):

$$\frac{1}{Y_t}\frac{dY_t}{dt} = \frac{1}{A_t}\frac{dA_t}{dt} + \alpha\frac{1}{K_t}\frac{dK_t}{dt} + (1-\alpha)\frac{1}{L_t}\frac{dL_t}{dt}. \tag{20}$$

Table 6. Factors for economic growth in A9, 1970–2022

Source: Nomura and Ho (2024, pp. 146-151), World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671), CEIS (2024).

Country	GDP	Labor		Capital		TFP	Country	GDP	Labor		Capital		TFP
	Growth	Hours	Quality	ICT	N–ICT			Growth	Hours	Quality	ICT	N–ICT	
HKG							PHP						
1970–1975	6.5	2.0	0.1	0.2	2.8	1.4	1970–1975	6.3	1.9	0.2	0.2	3.5	0.5
1975–1980	11.2	2.0	0.7	0.2	3.6	4.7	1975–1980	5.5	1.1	0.7	0.1	4.6	–1.0
1980–1985	5.4	0.9	0.6	0.3	3.0	0.6	1980–1985	–0.5	1.2	0.4	0.2	3.2	–5.5
1985–1990	7.9	0.2	1.0	0.3	2.3	4.1	1985–1990	5.7	1.0	0.7	0.1	1.2	2.7
1990–1995	6.0	0.6	0.9	0.4	2.7	1.4	1990–1995	3.1	1.0	0.1	0.1	2.2	–0.3
1995–2000	2.9	1.5	0.5	0.6	1.8	–1.5	1995–2000	4.4	0.7	1.0	0.3	2.3	0.1
2000–2005	4.1	0.5	0.3	0.4	1.0	1.9	2000–2005	4.7	1.1	0.2	0.2	1.5	1.7
2005–2010	3.8	0.2	0.3	0.3	0.9	2.1	2005–2010	4.9	0.9	0.5	0.1	2.2	1.2
2010–2015	2.7	0.3	0.6	0.3	0.5	1.0	2010–2015	5.7	0.8	0.4	0.1	4.0	0.4
2015–2022	0.4	–0.6	0.4	0.2	–0.1	0.5	2015–2022	4.4	0.7	0.3	0.1	3.5	–0.2
IDN							SGP						
1970–1975	8.3	1.4	0.8	0.0	4.1	2.0	1970–1975	8.9	2.6	0.5	0.3	4.9	0.6
1975–1980	7.7	1.4	0.5	0.1	4.2	1.5	1975–1980	8.6	2.3	0.6	0.3	3.5	1.9
1980–1985	4.7	1.4	0.5	0.1	2.7	0.0	1980–1985	6.6	1.4	1.3	0.6	4.2	–0.9
1985–1990	7.5	0.9	1.2	0.2	2.9	2.3	1985–1990	7.7	2.1	0.7	0.8	2.5	1.6
1990–1995	7.4	0.5	2.4	0.2	3.5	0.8	1990–1995	8.6	2.1	1.7	0.7	3.2	0.9
1995–2000	0.7	1.1	1.0	0.1	3.4	–4.9	1995–2000	6.2	1.1	1.0	0.6	3.0	0.5
2000–2005	4.4	0.5	1.4	0.2	2.1	0.2	2000–2005	4.8	0.5	1.0	0.5	1.5	1.3
2005–2010	5.4	1.1	0.6	0.1	3.1	0.5	2005–2010	7.1	2.4	0.4	0.4	1.9	2.0
2010–2015	5.3	0.5	2.1	0.1	3.4	–0.8	2010–2015	4.7	1.1	0.6	0.8	1.9	0.3
2015–2022	3.7	0.5	0.6	0.2	2.7	–0.3	2015–2022	3.3	0.0	0.8	0.6	0.8	1.1

Table 6 (cont.). Factors for economic growth in A9, 1970–2022

Country	GDP	Labor		Capital		TFP
	Growth	Hours	Quality	ICT	N–ICT	
JPN						
1970–1975	4.4	–0.4	1.0	0.2	2.7	0.9
1975–1980	4.7	0.7	0.8	0.2	1.5	1.5
1980–1985	4.3	0.5	0.6	0.4	1.4	1.4
1985–1990	4.9	0.4	0.6	0.5	1.6	1.8
1990–1995	1.3	–0.2	0.4	0.2	1.0	–0.1
1995–2000	1.0	–0.6	0.4	0.3	0.5	0.4
2000–2005	1.2	–0.3	0.5	0.2	0.1	0.7
2005–2010	–0.1	–0.4	0.4	0.1	0.1	–0.3
2010–2015	1.1	0.0	0.2	0.1	–0.1	0.9
2015–2022	0.3	0.2	0.2	0.1	0.1	–0.3
KOR						
1970–1975	9.4	1.6	0.2	0.1	4.2	3.3
1975–1980	7.8	1.3	0.6	0.4	6.0	–0.5
1980–1985	8.9	1.1	1.7	0.4	3.5	2.2
1985–1990	9.8	1.6	1.4	0.5	4.1	2.2
1990–1995	8.2	1.0	1.6	0.4	3.7	1.5
1995–2000	5.6	0.0	0.7	0.6	2.4	1.9
2000–2005	4.9	0.2	1.2	0.4	2.3	0.8
2005–2010	4.5	–0.1	1.0	0.2	2.1	1.3
2010–2015	3.0	0.6	0.6	0.1	1.5	0.2
2015–2022	2.5	–0.7	0.4	0.1	1.3	1.4
MYS						
1970–1975	7.4	1.3	0.4	0.0	3.3	2.4
1975–1980	7.8	1.3	0.8	0.1	4.1	1.5
1980–1985	5.1	1.3	0.8	0.1	4.6	–1.7
1985–1990	6.5	1.3	0.7	0.2	2.3	2.0
1990–1995	9.2	1.0	1.1	0.4	5.8	0.9
1995–2000	5.1	1.3	0.6	0.5	3.3	–0.6
2000–2005	5.3	0.7	0.8	0.8	1.4	1.6
2005–2010	4.9	1.0	0.5	0.5	1.9	1.0
2010–2015	6.3	1.1	0.4	0.4	1.9	2.5
2015–2022	3.9	0.5	0.6	0.2	1.8	0.8
THA						
1970–1975	5.5	0.9	1.4	0.1	2.8	0.3
1975–1980	7.5	2.7	1.1	0.2	3.2	0.3
1980–1985	5.3	1.0	1.8	0.3	3.2	–1.0
1985–1990	9.9	1.5	1.7	0.4	4.1	2.2
1990–1995	8.1	0.7	1.8	0.7	6.1	–1.2
1995–2000	0.7	–0.2	1.8	0.1	1.9	–2.9
2000–2005	5.3	0.1	1.8	0.4	0.6	2.4
2005–2010	3.7	0.5	0.8	0.7	1.4	0.3
2010–2015	3.0	–0.7	1.6	0.5	1.0	0.6
2015–2022	1.9	–0.3	0.6	0.1	1.3	0.2
VNM						
1970–1975	4.3	3.1	0.4	0.0	1.1	–0.3
1975–1980	4.4	1.7	0.7	0.0	3.2	–1.2
1980–1985	3.0	1.9	0.3	0.0	1.8	–1.0
1985–1990	3.1	1.5	0.1	0.0	2.5	–1.0
1990–1995	8.3	1.0	0.1	0.0	3.8	3.4
1995–2000	8.0	1.0	0.1	0.1	6.0	0.8
2000–2005	8.4	0.3	1.1	0.1	6.1	0.8
2005–2010	7.8	1.3	0.7	0.1	7.1	–1.4
2010–2015	5.1	0.1	0.4	0.2	3.5	0.9
2015–2022	6.3	0.3	0.8	0.2	3.2	1.8

Source: Nomura and Ho (2024, 146-151), World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671), CEIS (2024).

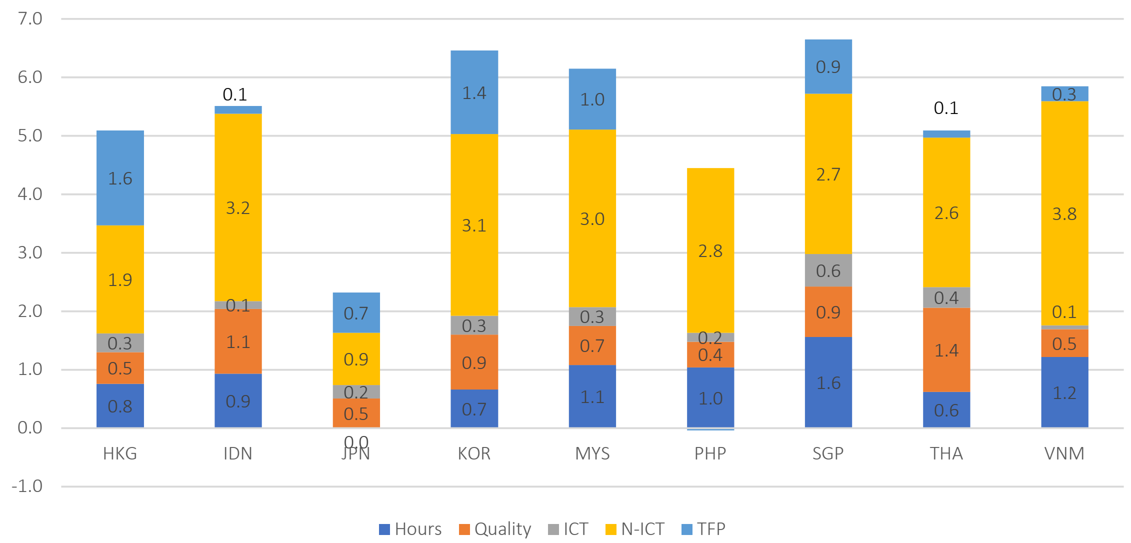

Figure 8. Contribution to economic growth, 1970–2022

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Table 7. Contribution to economic growth in A9, 1970–2022, in percent with percentage shares in brackets

Source: Nomura and Ho (2024, pp. 146-151), World Bank Group (2025), Maddison (2001, pp. 142-151), Bolt and Van Zanden (2025, pp. 631-671), CEIS (2024).

Country	Labor		Capital		TFP	GDP
	Hours	Quality	ICT	N–ICT		Growth
HKG	0.8 (14.9)	0.5 (10.6)	0.3 (6.3)	1.9 (36.3)	1.6 (31.8)	5.1
IDN	0.9 (16.9)	1.1 (20.1)	0.1 (2.4)	3,2 (58.3)	0,1 (2.4)	5.5
JPN	0.0 (–0.4)	0.5 (22.1)	0.2 (10.0)	0.9 (38.5)	0,7 (29.9)	2,3
KOR	0,7 (10.2)	0.9 (14.6)	0.3 (5.0)	3.1 (48.1)	1,4 (22.2)	6.5
MYS	1.1 (17.6)	0.7 (10.9)	0.3 (5.2)	3.0 (49.4)	1,0 (16.9)	6.2
PHP	1,0 (23.6)	0.4 (10.0)	0.2 (3.4)	2.8 (63.9)	0,0 (–0.9)	4.4
SGP	1,6 (23.5)	0.9 (12.9)	0.6 (8.4)	2.7 (41.2)	0.9 (14.0)	6.7
THA	0.6 (12.2)	1.4 (28.3)	0,4 (6.9)	2.6 (50.3)	0.1 (2.4)	5.1
VNM	1.2 (20.9)	0.5 (8.0)	0.1 (1.2)	3.8 (65.5)	0.3 (4.5)	5.9
Mean	0.9 (16.6)	0.8 (14.7)	0.3 (5.2)	2.7 (50.6)	0.7 (13.0)	5.3

Resting on the data and calculations from the World Bank and the APO Productivity Database, it is possible to reproduce APO's calculations published in 2024 (Nomura & Ho, 2024, pp. 146-151) with some adjustments. The results are presented in Table 6 and summed up in Figure 8 and Table 7.

The calculations show that TFP contributed a share of between 14 and 31.8 percent of economic growth among the high achievers and between –0.9 and 4.5 percent among the low achievers, 1970–2022, with the Philippines at the very bottom. As for 1975–1985, it was disastrous. At the same time, the absolute contribution from labor and capital is surprisingly even for most countries, independent of how they achieved it.

3.8. Counter factual analysis

Where would the Philippines have been today if its TFP had contributed as much to the economy as it did for its neighboring countries? One might answer that question by conducting a counterfactual exercise assuming that the contribution of TFP had been the same in the Philippines as among the others. The average annual contribution from TFP to economic growth in Hong Kong, Japan, South Korea, Malaysia, and Singapore was 1.1 percent from 1970 to 2022. If the rate had been similar for the Philippines, instead of negative, the average annual growth rate of the Philippines would have increased from 4.4 to 5.5 percent, against an average of 5.2 for the well-performers. In other words, the lack of TFP contributing to economic growth may explain the entire divergence against the well-performers. Compared with the weak performers, the picture is somewhat different. Against Indonesia, Thailand, and Vietnam, the Philippines lost in almost every field.

4. DISCUSSION

So, what caused the relative decline of the Philippine productivity? The island state is known for its family dynasties, where generations of powerful families are in economic and political control and rivalry. Voters are critical to the system. Nevertheless, they tend to vote for the family dynasty they think is less bad. The rationale seems to be that without being backed by a dynasty, you have no chance to be elected or govern properly. This system is also mirrored in the management culture, where leadership-employee relations can be characterized as strictly hierarchical with a high degree of loyalty. For promotions, e.g., managers often tend to pick their allies, favorites, and friends over the most qualified, hard-working, and skilled staff.

The relationship building in the culture requires loyalty and limited opposition. Hence, employees are not likely to report bad or inefficient management or organization. This may also pave the way for corruption, since hard and good work is not necessarily decisive for promotion. This keeps people in poverty (Olson, 1982; Acemoglu & Robinson, 2006, 2008; McCoy, 2009; Mendoza, 2016; Mendoza et al., 2022).

Source: Transparency International (2025), 4-5 and https://www.transparency.org/en/cpi/2024

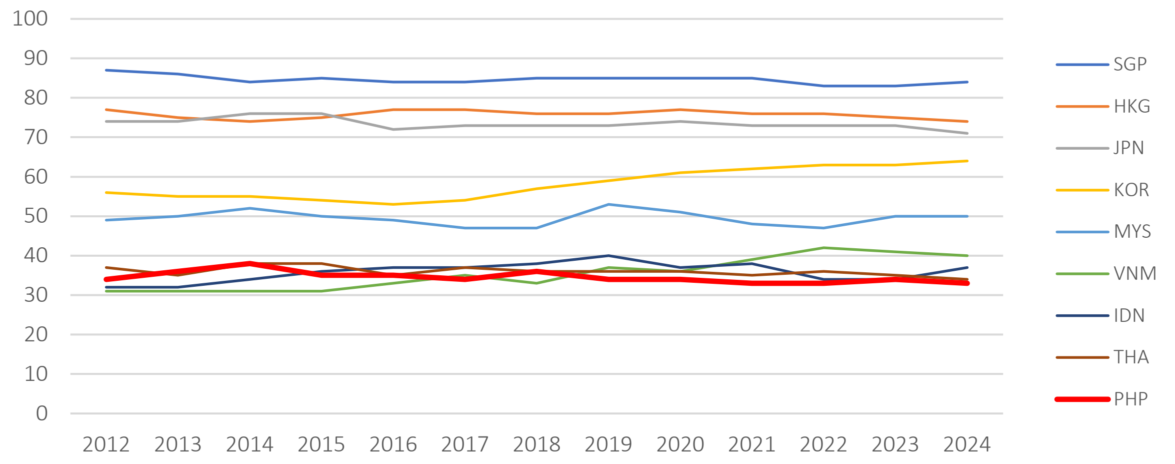

Figure 9. Composite perceived corruption index, 2012–2024

According to Transparency International (2025), public corruption in the Philippines is higher than in the eight countries it is compared with in this study. This is concluded based on 13 public corruption parameters collected from the World Bank, the World Economic Forum, and independent sources.

The Philippines failed the most from the mid-1970s to the mid-1980s and again in the first years of the 1990s. These were also the periods where the TFP contribution to economic growth was strongly negative. The first period coincides with the dictatorship of President Ferdinand Marcos. He was first elected in 1965. Before the 1973 election, he introduced Martial Law on September 23, 1972. It was formally lifted in 1981, but the Marcos dictatorship did not end before the People Power Revolution in February 1986.

During the first two decades of Marcos' reign, the economy saw a relative decline, when negative growth occurred in the. Looking at the growth accounting, the relative decline was basically due to negative growth in TFP. From 1983 to 1985, GDP per capita contracted by twelve percent, and productivity, by all measures, fell correspondingly.

Senator Benigno Aquino planned to challenge Marcos during the 1973 election. He was arrested and falsely sentenced to death for murder. During a heart disease, the USA came to his rescue by offering him treatment for his condition. After three years, he returned to the Philippines. Upon his arrival on August 21, 1983, police officers assassinated him. It led to domestic protests and violent police and military actions to stop the opposition.

On February 7, 1986, a rushed election was held. This time, Corazon Aquino, the widow of the late Benigno Aquino, challenged the dynasty. Marcos was again accused of voter fraud. The US Congress condemned the election and voted to cut military support until Marcos stepped down. Filipinos actively boycotted businesses and establishments supportive of the Marcos regime. Schools suspended classes and many stopped paying their bills. General strikes and civil disobedience became common. When Cardinal Sin and the Catholic church actively supported the opposition, it was in reality game over. Military units changed sides, and the Marcos family had to flee the country on February 26, 1986. Bello (2019, 2023) characterizes the rule from 1965 to 1986 as a transition from a serving to a predatory state, to enrich the dynasty. This was, according to him, possible through a cooperating World Bank. Komatsuzaki (2019, pp. 159-184) argues that bad governance was the major reason for the lack of foreign direct investments and building of infrastructure, where the Philippines was the worst performer in the area for decades.

Corazon Aquino was elected president through a snap election. Under the new rule, important political and economic institutions, such as a free market economy, were restored. However, the Philippines still lacked confidence among

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foreign investors, and capital imports were improving slowly.

A significant setback came with the 7.8 strong Richter scale earthquake on Luzon on July 16, 1990. It destroyed huge parts of the infrastructure, made thousands homeless, and reportedly killed 1,621 people. It was another huge setback for the national economy (Benson 1997). GDP per capita fell until 1993, as TFP had a negative impact on growth.

Nevertheless, new and better infrastructure was built, and economic contraction turned to expansion from 1994. The divergence against the eight countries of comparison gradually stopped and turned to convergence after 2011. To a large degree, it was brought about by better governance and management, attracting more FDI. However, political dynasties, corruption, and inefficient management structures still constitute considerable challenges.

CONCLUSIONS

The purpose of this paper is to explain why the Philippines turned from being a relatively wealthy Southeast Asian country in the 1950s to falling behind its neighbors for decades thereafter. By recalculating and revising GDP and purchasing power parity figures, the paper confirms that the Philippine economy experienced a decline relative to its neighboring countries from the late 1950s until 2011.

The paper presents new and revised comparable annual purchasing power parities series of GDP, labor, capital, and total factor productivity for nine East and South-Eastern Asian countries. They all reveal a relative decline for the Philippines according to all the mentioned GDP and productivity parameters until approximately 2011 and thereafter modest catching-up effect. In particular, total factor productivity of the Philippines fell back compared to the neighboring economies. The paper also conducts growth accounting and a counterfactual analysis. Both exercises confirm that total factor productivity (TFP) was the weakest link in the Philippine development and can to a large degree explain the negative divergence against its neighbors.

Important reasons for the weak development seem to have been a dysfunctional and corrupt political system and management culture, which have also constrained foreign direct investments (FDI) and important infrastructure investments.

Future research is recommended to examine the change in pattern from 2011 onwards, when the island state has experienced converging growth towards its neighbors, with improved productivity development and higher FDI volumes.

AUTHOR CONTRIBUTIONS

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