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Analysis of the sources of economic growth of Viet Nam

**Tran Vo Hung Son
Chau Van Thanh¹**

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1. The authors of this paper are lecturers of the University of Economics, Ho Chi Minh City, Vietnam.

1. Introduction

After unification in 1975, Viet Nam implemented two five-year plans (1976-1980 and 1981-1985) to rebuild and develop the economy. This ten year period was characterised by slow economic growth despite some efforts to solve problems arising from the old economic mechanism such as: (i) agricultural reform: shifting from a cooperative management system based on work-days to an output contract system which had significant success in rapidly increasing agricultural production without significant material investment; (ii) reform in prices, wages and money in 1985: raising prices in the public sector to cope with the market price, increased wages and monetary reform. However, after this reform, the inflation rate in 1986 was 775 per cent so that further changes to renovate the economy were clearly needed: *doi moi* began. The *doi moi* period, since 1986 to date, has had positive results: during 1986-1990 real GDP growth was on average 3.9 per cent, from 1991-1995 8.2 per cent, and in both 1996 and 1997 remained at around 9 per cent.

Starting in 1997 and continuing into 1998, the financial crisis strongly harmed some Asian economies such as Thailand, South Korea, and Indonesia, and may yet have negative effects on Viet Nam's economic growth. However, despite an expected slow-down, the situation of the Vietnamese economy till the end of 1998 can be said relatively stable, having largely avoided the chaos and bad effects felt in other Asian countries. What are Viet Nam's prospects? Will growth continue at the high level witnessed throughout the 1990s or will it now falter and fall?

Economic growth derives from various sources such as capital, labour, natural resources and technology-management, the first three of which are more-or-less readily quantifiable. The technology factor (productivity or, more broadly, efficiency) is determined by factors such as technology improvement, renovation in organisation and management, and restructuring weak mechanisms through launching good, appropriate economic policies. The objective of this paper is to analyse the economic growth of Viet Nam in the period of renovation. What has been the contribution of the different factors - capital, labour and technology-productivity - in the economic growth of Viet Nam? What are their trends? The analysis of this paper points to some policies to maintain a sustainable high economic growth for Viet Nam.

The remainder of this paper first presents the main features of Viet Nam's economic development for the recent period and then analyses economic growth applying the growth accounting equation to the case of Viet Nam. Finally, we interpret the results and suggest policies for sustainable economic growth for Viet Nam.

2. Some main features of Vietnam's economic development

2.1 Before the reform (*doi moi*): 1976-1985

The economic development of Viet Nam since unification can be divided into two periods: (i) before *doi moi* (1976-1985) and (ii) after *doi moi* (1986 to date), though in the former period there were some

efforts to renovate policies. This periodisation allows us to examine development performance through the 5 year plans or each 10 years period.

The main features of the period from 1976 to 1985 were that national income increased 3.7 per cent per annum (according to the material product system of national accounting), with agricultural production increasing 3.8 per cent each year and industrial production at 5.2 per cent a year. However the country relied on imports for basic goods, including 1.5 million tonnes of rice and 60 million meters of cloth each year and there were signs of instability with a large budget deficit and growing foreign debt in both non-convertible and convertible currencies (reaching 8.5 billion roubles and US\$ 1.5 billion). By the end of the period (1986) inflation had reached 774.7 per cent.

2.2 The doi moi period I: the five year plan 1986-1990

During the 1986-90 five year plan government implemented three large programmes for production of food, consumer goods and exports. The main motivation for these policies was the renovation of the economic mechanism.

The well-known resolution No. 10 (issued on April 5, 1988) on renovating agricultural management officially allowed the implementation of the output contract system to household farmers instead of only signing the output contract according to different stages of work in production as had been done since 1981. The decision 217/HDBT gave the right of autonomy in doing business for state-owned enterprises (SOEs) and indicated that the government would no longer continuously subsidize SOEs. In December 1987, the government issued the law of foreign investment in order to attract foreign capital to the country. By the end of 1988, the SOEs stopped receiving capital from the government budget and were now required to obtain bank loans and pay interest. The same practice was applied for other activities such as the state construction companies. Taxes applied to the private sector now also applied for SOEs (previously, instead of taxes, SOEs paid a percentage of their revenue to the national treasury to recover the capital provided by the national budget) and the private sector was encouraged to participate in business activity. The banking system was also restructured as well as reorganised to cope with the new situation.

Exports were encouraged by a reduced reliance on quotas and the issue of licenses for export activity passed to the local government rather than being controlled by central authorities. In addition the exchange rate moved from VND 18 dong per USD (in October 1987) to VND 4,200 to 4,575 per USD by December 1989, mainly by adjusting toward a market mechanism. Many price controls were abolished: the government stopped providing subsidies through prices for SOEs, applied market prices for all material goods, and no more food stamps were provided by the state commercial store.

The results of these changes were as follows:

- GDP increased 21.2 per cent (an annual average increase of 3.9%);
- Agriculture: paddy cultivation expanded from 18 million tonnes per year to 21.5 million tonnes, shifting from importing rice to exporting rice (1989: exported 1.4 million tonnes; 1990: exported 1.5 million tonnes). Viet Nam became the third largest rice exporter in the world.

- Industry: production of electricity, steel, cement increased. Crude oil output rose from 40,000 tonnes (1986) to 2.7 million tonnes (1990).
- Exports: the annual average increase in exports was 28 per cent, rising to pay the import bill: the ratio of exports to imports in the period of 1976-1984 was 1:4, in 1990 this ratio was 1:1.
- Super-inflation was controlled: the annual rise in the consumer price index fell from 3 digits per year has to 34.7 per cent in 1989 (though it increased again to 67.4 per cent in 1990).
- Gross capital formation steadily rose to 10.6 per cent of GDP and 12.9 per cent in 1990.

2.3 The doi moi period II: the five year plan 1991-1995

The strategy for this period was “stabilisation and social-economic development to the year 2000” and there have been significant improvements in the situation as follows:

- GDP increased by 48.3 per cent, an annual average increase of 8.2 per cent;
- Agriculture: annual food production reached to 25 million tonnes (1991-1995) with annual average growth of 5 per cent (exceeding population growth so that food per capita increased to reach 372.8 kg per capita in 1995). Rice exports increased nearly 2 million tonnes per year.
- Industry: average growth of 13.5% per year (compared to 1989 in which it was -3.3%). This industrial development partially comes from the results of large investments in the past in heavy industries such as petroleum, electricity, cement, paper, steel. The increase in crude oil exploitation and capacity by large factories (cement, paper, sugar, hydrolic power) have contributed significantly to growth of industrial production. But more important was the renovation in management and policies: the factories received autonomy in their making decision in business and production.
- Gross capital formation as a per cent of GDP continuously increased from 14.3 per cent in 1991 to 26.6 per cent by 1997.
- Structural transformation: the share of sector I (agriculture) has decreased while that of sectors II and III (industry and services) increased (see Table 1).

Table 1: Share of output by sector (per cent)

	1991	1992	1993	1994	1995
Sector I: agriculture	40.5	33.9	29.9	28.7	27.5
Sector II: industry	23.5	27.3	28.9	29.6	30.1
Sector III: services	35.7	38.8	41.2	41.7	42.4

- Inflation: the inflation rate decreased year by year as follows: 1991: 67.5%, 1992: 17.5%, 1993: 5.2%, 1994: 14.4%, 1995: 12.7%, 1996: 6%, 1997: 5%.

In addition to these improvements in economic performance there were important developments in international relations. On July 11, 1995 the United States declared the normalisation of diplomatic relations with Viet Nam. Later that same month Vietnam signed a cooperation agreement on economic relations, commerce and science-technology with the European Union and also joined Asean. Annual conferences on ODA have brought forward pledges of around US\$ 2 billion each year and 1,604 foreign investment projects registered from 1988 to 1995 (with a total capital of US\$ 19 billion of which the implemented capital so far amounts at US\$ 7,306 million).

3. Analysis of the sources of economic growth of Viet Nam

3.1 Methodology

The growth accounting method (as suggested in Gillis *et al.*, 1996) is based on the production function:

$$Y = f(K, L, R, a) \quad (1)$$

which relates the level of output Y to the inputs of capital (K), labour (L), farming land and natural resources (R) and productivity or technology (a). Equation (1) can be rearranged to calculate the factor contribution to the output growth as follows:

$$g_Y = w_K \cdot g_K + w_L \cdot g_L + w_R \cdot g_R + a \quad (2)$$

where g is the growth of each variable and w the share of inputs in income. For simplicity, we can write:

$$g_Y = (w_K \cdot g_K) + (w_L \cdot g_L) + a \quad (3)$$

where $a = g_Y - (w_K \cdot g_K) - (w_L \cdot g_L) \quad (4)$

Usually, data on g_Y , w_K , g_K , w_L and g_L can be found and calculated from the national statistics year-books. So, "a" is treated as a residual.

However, data on w_K , w_L , g_K are not available in most of the developing countries. Therefore, we can apply two simple methods: (1) The perpetual inventory method and (2) The rate of investment (or gross fixed capital formation) as a percentage of GDP method, in order to calculate the results of the growth accounting equation and estimate the contribution of capital, labour and total factor productivity to growth.

As $w_K \cdot g_K = \frac{iK}{Y} \cdot \frac{dK}{R} \cong i \cdot \frac{I}{Y}$, where i is the capital interest rate and I/Y is the share of investment in

GDP, equation (3) now can be rewritten as:

$$g_Y = i \cdot \frac{I}{Y} + w_L \cdot g_L + a \quad (5)$$

The results of the first method, the perpetual inventory method, depend very much on g_K and the initial capital stock of the base year (K_0).

The share of income from labour is not available. Therefore for Viet Nam, we will use the value of w_L which Alwyn Young calculated for South Korea and Taiwan in the period 1960-1973.

3.2 Results for Viet Nam

Table 2 shows the growth rates of output and labour and the investment rate for the periods used for our analysis¹. Table 3 is derived from these data using equation (5) and assuming $i = 0.1$ and $w_L = 0.7$. Finally, Table 4 is then derived by standardising by output growth for that period.

Table 2: Growth in output and labour and investment rate by period (per cent per annum)

Period	g_Y	I/Y	g_L
1987-1989	4.77	11.30	3.60
1990-1992	6.56	14.73	3.31
1993-1995	8.82	23.73	2.73

Table 3: Growth decomposition analysis

Period	g_Y	$(i \cdot I/Y)$	$w_L \cdot g_L$	a
1987-1989	4.77	$0.1 \cdot 11.30$	$0.7 \cdot 3.60$	1.12
1990-1992	6.56	$0.1 \cdot 14.73$	$0.7 \cdot 3.31$	2.77
1993-1995	8.82	$0.1 \cdot 23.73$	$0.7 \cdot 2.73$	4.54

Table 4: Contribution to growth of different factors (per cent)

Period	Y	K	L	a
1987-1989	100	23.7	52.8	23.5
1990-1992	100	22.5	35.3	42.2
1993-1995	100	26.9	21.7	51.4

3.3 Interpretation

Capital is always a necessary factor for the development. Usually, developing countries cry out for capital and the Harrod-Domar model is often used to calculate the capital needed for development. According to the Solow-Denison model used above, the contribution of capital to Vietnam's economic development was around 25 per cent in each period, increasing slightly in the latest period. This finding can be explained by the *doi moi* which had a great effect at this period so that technology/productivity (a) has increased significantly, thus drowning out the effect of capital in the growth equation.

The increased role of technology in the last period can also be explained by the effects of the big investments in heavy industries in the past which then started to operate, together with the foreign capital investment flows and capital loans as well as, foreign aid to Viet Nam. While the share of labour's contribution to growth decreased from 52.8% to 35.32% then to 21.7%, the factor a increased significantly from 23.5% to 42.23%, and then to 51.4% (more than half) through the three periods. This again can be explained by the effects of the *doi moi* policies of Viet Nam, which have succeeded in transforming the economy from central planning to a market economy. Thus in the next years, in order to maintain high economic growth, though capital is necessary, continuous improvement of development policies, renovation of organisation and management etc. are the most important issues because these can contribute to the growth more than other factors. Financial assistance from international agencies will be more effective if this capital is used in association with good and open economic management, a clear legal framework for economic activity and efficient government policies.

¹ All data used in this paper are taken from the Viet Nam Statistics Yearbooks.

4. Comments and conclusions

Four main points should be made:

1. Viet Nam should concentrated more on the progress of economic reform and economic management in order to maintain a sustainable economic growth. The high achievements in the previous decade have proven that these activities have significantly contributed to the economic growth of the country.
2. The economic position of Viet Nam is still weak. Although the annual average economic growth is 8.2% per year (period 1991-1995), the starting point of Viet Nam is low (GDP per capita is only around US\$ 220 so that it needs about ten years to increase its per capita GDP to US\$ 400). Thus, Viet Nam must maintain a high economic growth rate in order to raise faster its standard of living. The material structure of Viet Nam is very weak and not appropriate for the efficient performance of invested capital. There needs to be significant investment upgrading.
3. The human resources needed for the new economic situation are huge but they are not provided appropriately both in quantity and quality. Therefore, the education system in Viet Nam must be restructured and have significant investment in order to provide high labour productivity for the economy.
4. The economic management mechanism is still new, and requires upgrading of the capability of the government's macroeconomic management. For example, 'Dutch disease' must be avoided in keeping too long the appreciation of the dong which will have negative effects on output. Before the Asian financial crisis, the Viet Nam currency was kept stable at approximately VND 11,000 per dollar. In 1998 after the effect of financial crisis, the dong has been changed to VND 14,000 per dollar. The adjustment of the exchange rate has as its objective to enhance exports but at the same time it must keep the economy stabilised. Finally, policies to support companies that play an important role in the economy are strongly recommended; but these that do not play a major role, must accept the discipline of the market.

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