Some Comparisons between the Vietnam and China's Economic Structure, Policy Implications

To TrungThanh[1], Nguyen Viet Phong[2] and Bui Trinh[3]

Abstract

In recent years, the China's economy does not afford to gain the growth that depends on capital and the export is not their expectation. The Chinese policy makers may have an orientation for the change of economics growth model from short term to long term. This means that they do not focus strongly on GDP indicator but focus on the investment efficiency, especially the saving indicator. For doing this, they can reduce domestic investment and promote the outward investment to other countries which have cheaper labor costs and many incentive FDI policies. When these companies do business abroad, they will transfer profits back to China that make an increase in property income and create an increase in economics savings. By comparing two economy structures and some macro economic indicators, this paper tried to give some recommendations to policy makers that we should experience the China situation for Vietnam ourself.

1 Introduction

China and Vietnam have a same culture which judges something through their appearances, sometimes the appearance conceals the content. Considering on

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[1]Hanoi National Economics University
[2]Director of Construction and Capital Department – Vietnam GSO
[3]Corresponding Author, Kyoto University

every angle showed that the Vietnam economy and China economy have a lot of similarities such as the economics growth, the inflation, the investment efficiency, the decline of productivity and the demand management policy. Until now, China's economy situation was concealed by the high economics growth rate which makes many people believed their own strength. The trade-off between the sustainability in long-term and the goals in short-term could lead to enormous consequences for future.

When Chinadevalued the yuan, Vietnam's experts worried that cheaper goods from China will overflow into Vietnam and Vietnamese exports will not be able to compete with Chinese. The concern of these experts is remarkable but it seems redundant.

This paper used the input-output analysis approach and the some macro indicators in order to observe on China and Vietnam economic situation.

2 Methodology

This paper, using the input-output tables of Vietnam and China, with non – competitive type as configured in Table 1.

Table 1: National input-output table with non-competitive and extended type is in form:

Sector	Intermediate Demand (or intermediate Consumption)			Final Demand				
	1	2	3	C	G	I	E	GO
1	X^d_{11}	X^d_{12}	X^d_{13}	C^d_1	G^d_1	I^d_1	E_1	X_1
2	X^d_{21}	X^d_{22}	X^d_{23}	C^d_2	G^d_2	I^d_2	E_2	X_2
3	X^d_{31}	X^d_{32}	X^d_{33}	C^d_3	G^d_3	I^d_3	E_3	X_3
Import from country C	M^A_1	M^A_2	M^A_3	M^A_c	M^A_g	M^A_I		M^A
Import from the rest	M^f_1	M^f_2	M^f_3	M^f_C	M^f_G	M^f_I		M^f
VA	V_1	V_2	V_3					
GI	X_1	X_2	X_3					

Relationships in the National input-output table with extended non-competitive type is shown as below:
In the National I-O table with non-competitive type, every factors of intermediate demand and final demand is splitted into demand of domestic product; negative column about "Import from country A" and "Import from the rest" are not exist if splitting import stream of country A and the rest. In which:

X^d_{ij} present element of domestic intermediate input matrix

C^d_i: final consumption of household for domestic product "i"
G^d_i: final consumption of government for domestic product "i"
I^d_i: Domestic gross capital formation of "i"
E_i: Export of product "i"
M^A_j: Import by sector from country A for intermediate consumption
M^f_j: Import by sector from rest of the world for intermediate consumption
M^A_c and M^f_c: Total import from country "A" and rest of the world for household consumption expenditure.
M^A_g and M^f_g: Total import from "A" and rest of the world for final consumption of government
M^A_I and M^f_I: Gross capital formation was imported from country A and rest of the world;

Basic relations

In non-competitive I-O table, relations are shown as below:

$$(A^d + \mathbf{A^m_A} + \mathbf{A^m_f}).X + Y^d + \mathbf{Y^m_d} + \mathbf{Y^m_f} - M^d - M^f = X \tag{1}$$

$$\blacktriangleright A^d . X + Y^d + \mathbf{A^m_A}.X + \mathbf{Y^m_A} - M^d + \mathbf{A^m_f}.X + \mathbf{Y^m_f} - M^f = X \tag{2}$$

In which:

A^d is the matrix of coefficient intermediate cost of domestic product;
A^m_A is the matrix of coefficient intermediate cost of imported product from country A;
A^m_f is the matrix of coefficient intermediate cost of other countries:
Y^d: is the matrix of final demand of domestic product (including export)
Y^m_A and Y^m_f are the vectors of final demand of imported product from country "A" and rest of the world. It includes household's consumption, final government's consumption, gross capital formation and export.
Easily we can see:

$$\mathbf{A^m_A}.X + \mathbf{Y^m_A} = M^A \tag{3}$$

$$\mathbf{A^m_f}.X + \mathbf{Y^m_f} = M^f \tag{4}$$

MA and Mf are also export of country A and rest of the world
On the other hand, relation (2) is re-written as:

$$A^d . X + Y^d = X \tag{5}$$

Or:

$$X = (I - A^d)^{-1}.Y^d \tag{6}$$

Thus, relation (6) became standard relation of Leontief's domestic and non-competitive relation. Reversing domestic Leontief's matrix $(I-A^d)^{-1}$ reflects the sensitiveness and dispersion of sectors in the national economic.

From relation (6), factor of income is defined as:

$$V = v.(I-A^d)^{-1}.Y^d \tag{7}$$

$$\Delta V = v.(I-A^d)^{-1}.\Delta Y^d \tag{8}$$

In which: V is gross value added, v is the coefficient matrix of value added and output factor. The equation (7) and (8) shown value added of Vietnam induced impact by factor of final demand.

Other way, relation (2) could also be written:

$$X - \mathbf{A^m_A}.X = A^d . X + Y^d + Y^m_d - M^d + \mathbf{A^m_f}.X + \mathbf{Y^m_f} - M^f \tag{9}$$

Or:

$$X = (I-\mathbf{A^m_A})^{-1}.(A^d . X + Y^d + Y^m_d - M^d + \mathbf{A^m_f}.X + \mathbf{Y^m_f} - M^f) \tag{10}$$

Matrix $(I-\mathbf{A^m_d})^{-1}$ is called multiplier matrix of import from country A. In equation (9) and (10), demand of import from country A is spread by the domestic demand. Similar, relation (2) could also be written:

$$X - \mathbf{A^m_f}.X = A^d . X + Y^d + \mathbf{A^m_d}.X + Y^m_d - M^d + \mathbf{Y^m_f} - M^f \tag{11}$$

Or:

$$X = (I-\mathbf{A^m_f})^{-1}.(A^d . X + Y^d + \mathbf{A^m_d}.X + Y^m_d - M^d + \mathbf{Y^m_f} - M^f) \tag{12}$$

Matrix $(I-\mathbf{A^m_f})^{-1}$ is called as multiplier matrix of import from the rest of the world. In equation (11) and (12), import demand from the rest of the world spread by the regional demand. Coefficient of import from other countries is defined:

Thus, the National Input-Output table with extended non-competitive type would help us to know how much the output, income and import was induced impact by final demand. So, from the input – output tables of Vietnam and China, we can estimate import from China to Vietnam induced impact to output and income of China

In addition, we also used some other indicators as gross domestic product (GDP) gross national income (GNI), saving, increametal capital output ratio (ICOR), total factor productivity (TFP).for analyzing the economics situation ò China and Vietnam.

3 Realistic Research

3.1 The Comparison on economic structure

One important thing we need to consider is that the Vietnamese and Chinese economic structures are completely different. Looking at China's economics structure through Input output tables, we may see that the China's spillover effects from the the components of final demand as final consumption, gross capital formation and exports spreaded to output and value added are more higher than Vietnam. China's induced effects of household final consumption, gross capital formation and export on value added are 0.77, 0.66 and 0.79, respectively. The figure for Vietnam is 0.64, 0.54 and 0.44, respectively.

Table 2: The comperison of the spillover effects from the the components of final demand on output and income between China and Vietnam

	China			Vietnam		
	C	I	E	C	I	E
Spillover effect on output	1.92	1.96	2.3	2.04	1.17	2.01
Spillover effect on value added	0.76	0.66	0.79	0.64	0.54	0.44

Source: ADB and Author's calculations

These indicators suggest that Chinese exports spread to value added is highest, followed by domestic consumption and investment.

In contrast, in the economics structure of Vietnam, the spillover effect of exports to value added is lowest, but the exports induced impact on imports is very high. Through three input-output tables represented for the three periods, we can see that the spillover of exports to output increase but do not spread much to the value added. Exports had only the strong spillover to imports. Among the final demand factors, the final consumption spread to value added is greatest.

Table 3. Spillover effects of final demand factors to output, income and imports of Vietnam

	Year 2000			Year 2007			Year 2011		
	C	I	E	C	I	E	C	I	E
Spread to production	1.27	1.35	1.53	1.09	1.12	1.7	2.04	1.17	2.01
Percent changed				-14.10%	-17.10%	11.70%	86.90%	4.50%	18.27%
Spread to value added	0.6	0.43	0.69	0.48	0.41	0.59	0.64	0.54	0.44
Percent changed				-20.40%	-5.60%	-13.30%	33.30%	31.22%	-8.94%
Spread to import	1.44	1.70	1	1.28	1.63	1.47	1.31	1.50	1.45
Percent changed				-12.10%	-3.90%	52.00%	2.27%	-8.13%	-1.29%
The rate of value added in total domestic final demand	0.47	0.32	0.45	0.44	0.37	0.35	0.31	0.46	0.27

Source: Calculation of Author based on input-output tables of Vietnam

3.2 The Aggregate demand structure, The short-term and long–term structure

In addition, we can see that there is a conflict between the GDP growth by components of the demand in the short-term (Keynesian) and the long-term sustainability of China. The China's economy (and possibly Vietnam) instability is caused by a over high growth target while GDP growth rely heavily on investment. China's economy by looking at demand side shows that   the consumption contribution to GDP is only 50%, whereas in developed countries such as the United States, the ratio is 83.2%, Japan: 82%, UK: 85 %, India: 70%, Vietnam: 72%.Many people think that China's GDP based on exports, but the fact is that China's net exports are negative contribution to GDP (from the Chinese data). Thus, in order to achieve the GDP growth in the short term (Keynesian), China have to force to raise the investment level while internal resources (saving) does not allow for this in the long term. For many countries in the world, the contribution of final demand factor depends on the structure of the spread of final demand to output and income. The policy of stimulating domestic consumption is always a priority of developed countries. Contribution of the consumption (C) of China declined 4.2 percentage points from 2005 to 2013 (in 2005: 52.4%; 2013: 48.2%). Therefore the GDP growth by all way in the recent period, when the consumption and exports do not be stimulated, China forced to rely on investment for economics development.
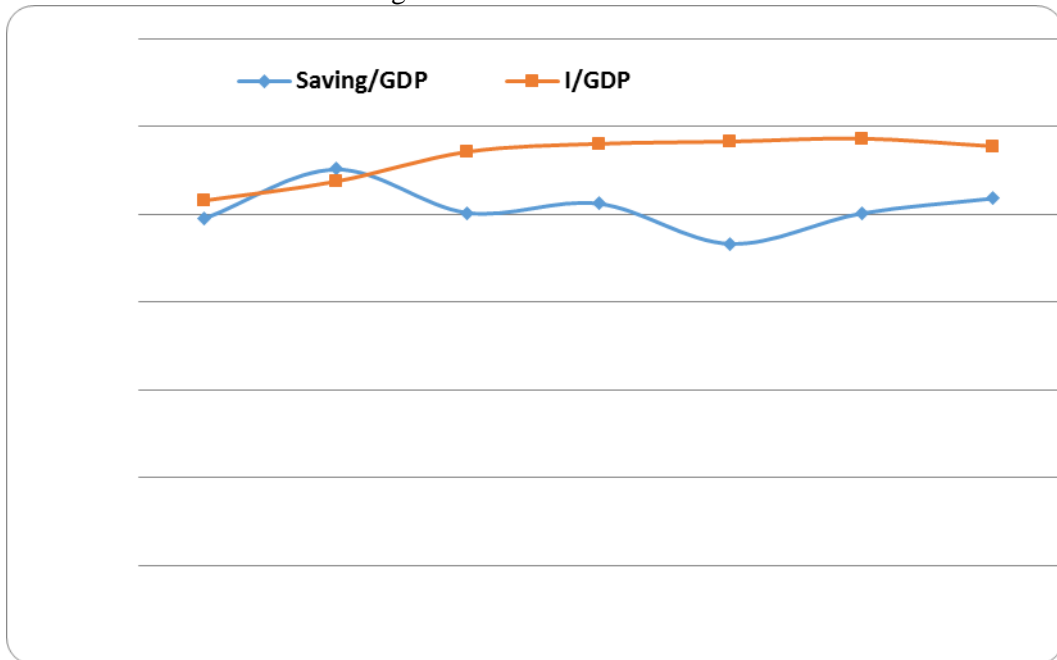
Table 4: China's GDP by components of the demand

Year	Final consumptions		Gross capital formation		Net exports	
	Contribution share (%)	Contribution (percentage points)	Contribution share (%)	Contribution (percentage points)	Contribution share (%)	Contribution (percentage points)
2000	65.1	5.5	22.4	1.9	12.5	1.0
2001	50.2	4.2	49.9	4.1	-0.1	0.0
2002	43.9	4.0	48.5	4.4	7.6	0.7
2003	35.8	3.6	63.3	6.3	0.9	0.1
2004	39.0	3.9	54.0	5.5	7.0	0.7
2005	39.0	4.4	38.8	4.4	22.2	2.5
2006	40.3	5.1	43.6	5.5	16.1	2.1
2007	39.6	5.6	42.4	6.0	18.0	2.6
2008	44.2	4.2	47.0	4.5	8.8	0.9
2009	49.8	4.6	87.6	8.1	-37.4	-3.5
2010	43.1	4.5	52.9	5.5	4.0	0.4
2011	56.5	5.3	47.7	4.4	-4.2	-0.4
2012	55.1	4.2	47.0	3.6	-2.1	-0.1
2013	50.0	3.9	54.4	4.2	-4.4	-0.3
2014	50.1	3.8	55.2	4.1	-4.5	-0.9

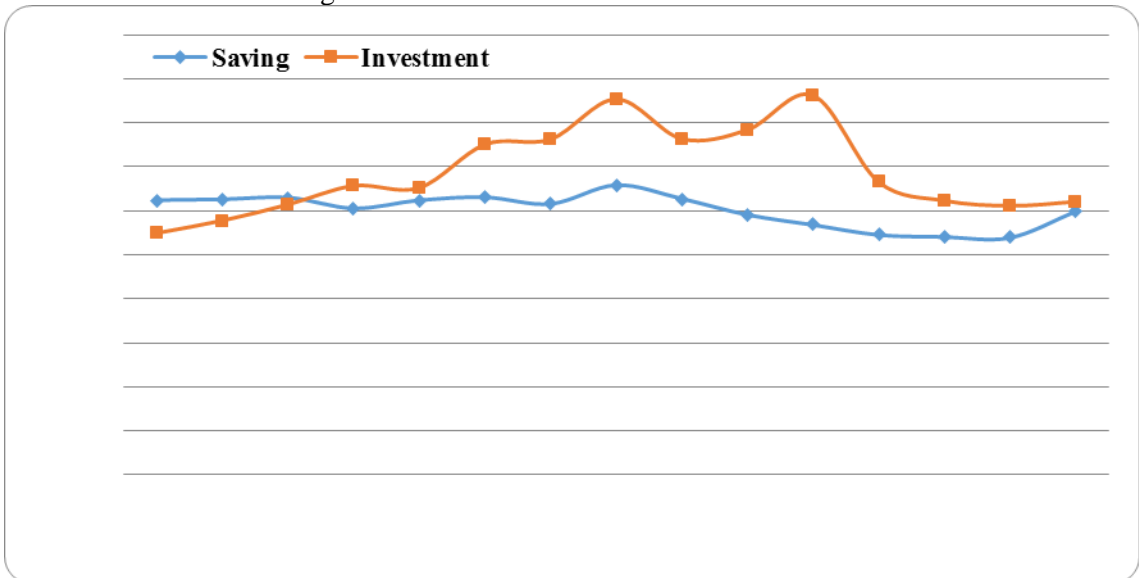Source: http://www.stats.gov.cn/tjsj/ndsj/2014/zk/html/Z0324E.htm

When the gap between saving and investment is more and morelarger, in order to achieve a high growth without sufficient internal resources, the borrowing is inevitable. This leads to borrowing and the budget deficit. In the period from 2007 to 2013, the savings/GDP ratio and the investment/GDP ratio of China is bigger than in the part. In 2007, the this gap was 2.1%, it is 5.9% in 2013.

Chart 01. Saving/GDP ratio and Investment/GDP ratio of China

Source: Calculation of Author from the data of National bureau of Statistics of China website
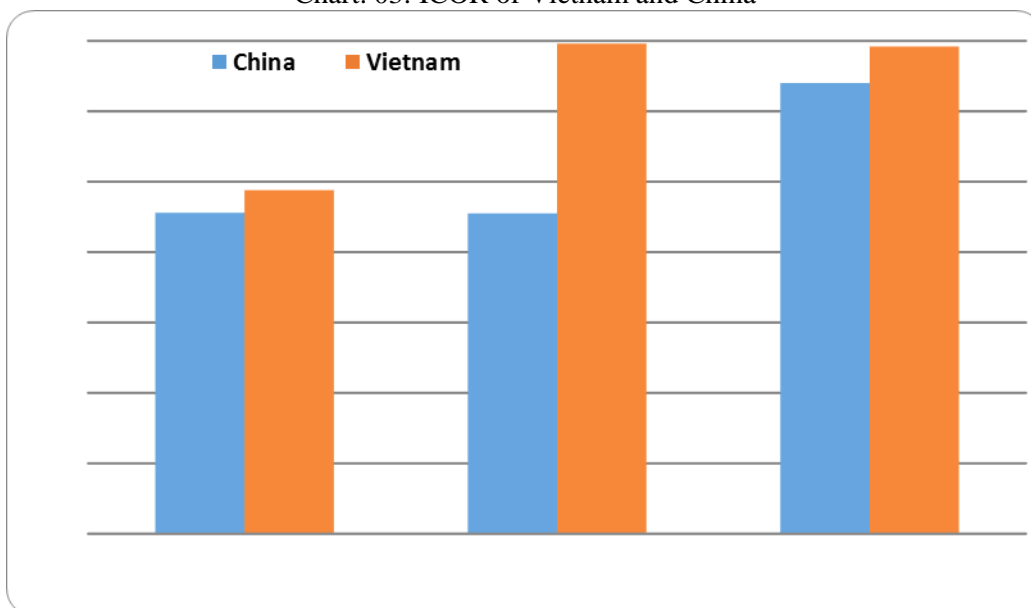
Chart 2. Saving/GDP ratio and Investment/GDP ratio of Vietnam

Source: General Statistics office of Vietnam

While the investment has to borrow, the investment efficiency of China as well as Vietnam is not high. In the recent period, the investment efficiency of China still delines. However, compare with Vietnam, the investment efficiency of China is better. For the period 2001-2005: China must invest 4.56 unit to create one unit of growth (in Vietnam is 4.88 unit); For the period 2006-2010, China must invest 4.55 unit to gain one unit of growth (Vietnam is 6.96 unit); while for period 2011-2014: China has invested 6.4 unit to obtain one unit of growth (Vietnam: is 6.92 unit).
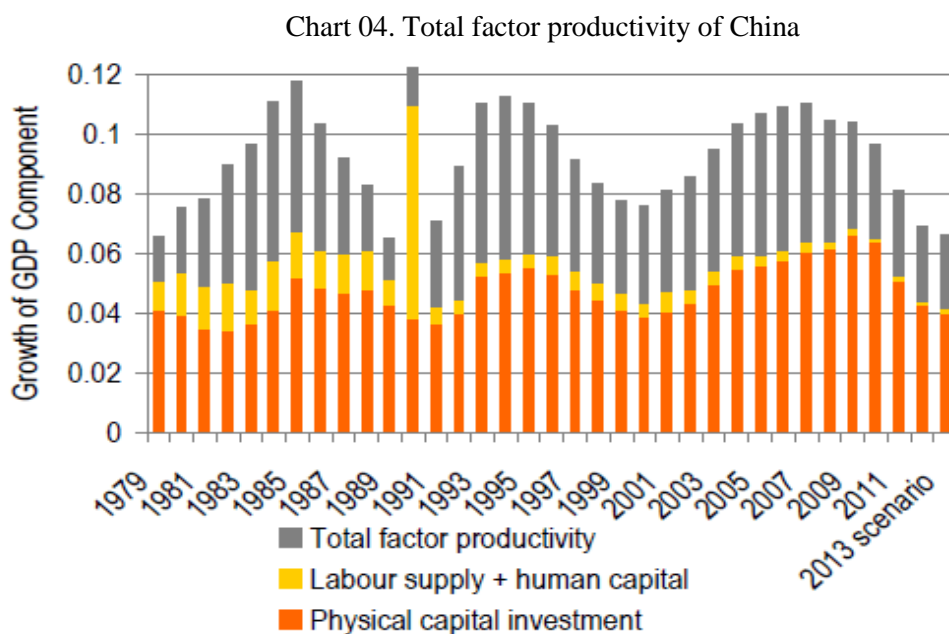
Chart. 03: ICOR of Vietnam and China

Source: Calculation of Author from the data of World Bank

An article by George Magnus research into question: *"Will the Chinese Miracle End Soon?''* Magnus said that the growth rate of total factor productivity of China is decreasing.

In China, the rate of TFP contribution to the economics growth is high in the 2000s (see Chart 07).Nearly 50% of China's TFP growth is the transition of employees from rural regions into the urban regions.The high value added sectors that majority is manufacturing and processing industry for export sectors. Previously, many experts have hinted at the population aging and decreasing the labor contribution to the growth. In recent years, the growth rate of TFP in China also fell down quickly. Hence, in order to achieve high growth rates, they have to rely heavily on investment.

The overinvestment in China to achieve a high growth rate is not a permanent solution. Like Vietnam, the change of the growth model and the recognitionof State for the private sector may be a challenge. China as Vietnam

and Asia need to base on greater efficiency and innovation which depend on policy and institution reforms to get sustainable economics growth.We believe that miracles can fade and the long-term growth will slow down, if solutions is not be implemented.The TFP contribution to the growth of Vietnam is lower than China, so Vietnam should implement the institution reform quickly and more fiercely.The strong anticorruption of China seems like a determined start of this reform process.In order to promote the private sector, China and Vietnam does not only change in the recognition of the State for this sector, but also they need to eliminate the corruption to create the incentive investment and innovations.

Chart 04. Total factor productivity of China

Source: Amiya Capital

Like China, the TFP contribution to growth of Vietnam in the early stages 2000-2006 was 22.6%; however, in the current period, it fell strongly to 6.4% in the period 2007-2014.

Even though the gap between saving and investmen in Vietnam is not as high as China and the saving/GDP ratio, investment/GDP ratio are the same as China, the rate of borrowing is still high due to saving is still money but not come into the production.

3.3 Policy Implications

As China's economy does not afford to gain the growth that depends on capital and the export is not their expectation,the Chinese policy makers may have an orientation for the change of economics growth model from short term to long term. This means that they do not focus strongly on GDP indicator but focus on the investment efficiency, especially the saving indicator. To do this they can reduce domestic investment and promote the outward investment to other countries which have cheaper labor costs and many incentive FDI policies. When these companies do business abroad, they will transfer profits back to China that make an increase in property income and create an increase in economics savings.

One of these actions was realized in the vision of the Chinese policy makers is that promote domestic investment to abroad. This way will solve two problems: China's labor costs were no longer competitive as before; and China also suffer the pollution throughout a long period of the overheating growth. Experts and policy makers often expressed concern about the import surplus from China. If we research deeply the economics structure, we may see that this problem is due to the Vietnam's structure economy which has deviance, without any auxiliary products.The domestic production is outsourcing, while we still seem that manufacturing and processing industrial sectors are the driving force. Thus, to produce we need to import from other countries. If it is not from China, it have to be from others. Therefore, the problem that Vietnam should consider is the economics structure and FDI. The exports of FDI sector should not be considered as an achievement. FDI sector may solve the problem of short-term growth but the domestic resource is being worse. It only benefits China. China devalued the yuan, which brings many benefits for exports and the growth. Vietnam also followed them to devalue VND while the essence of Vietnamese exports is on behalf of China's exports. It means that China have both benefits and Vietnam should have gotten benefits from the Chinese Devaluation of the Yuan but we did not get any benefit because the hasty VND devaluation. Vietnam should not be enchanted with the slogan "*Vietnamese people use Vietnamese products*". Someone joked that Vietnamese goods are really only eggs (poultry).

Regarding Vietnam, the policymakers still do not see this problem because the GDP indicator and FDI attraction remain a measure of "standards" to assess the health of the economy. We have to reconsider the economics development orientation in the long term, should not take the GDP growth indicator to strive. The GDP growth may be high. However, in actual, the real measurements for a national economy are Gross National Income (GNI) and National Disposable Income (NDI) and saving.

In 2006, the GNI/GDP ratio is 97.9% but this figure decreased to 95.1% in 2014, which causes by the FDI sector (net property income)

In recent years, the rate for China is always above 99%. If China promote investment to abroad, this figure will certainly over 100%.

Table 05: GNI/GDP ratio of China and Vietnam

Year	Vietnam			China		
	GNI (trillion dong)	GDP (trillion dong)	Rate (%)	GNI (100 billionyuan)	GDP (100 billion yuan)	Rate (%)
2006	1,038,755	1,061,565	97.9	215,904	216,314	99.8
2007	1,211,806	1,246,769	97.2	266,422	265,810	100.2
2008	1,567,964	1,616,047	97.0	316,030	314,045	100.6
2009	1,731,221	1,809,149	95.7	340,320	340,903	99.8
2010	2,075,578	2,157,828	96.2	399,760	401,513	99.6
2011	2,660,076	2,779,880	95.7	468,562	473,104	99.0
2012	3,115,227	3,245,419	96.0	518,215	519,470	99.8
2013	3,430,668	3,584,262	95.7	566,130	568,845	99.5
2014	3,745,515	3,937,856	95.1	*No data*		

Source: Statistics Year Book of Vietnam and China

In Vietnam, the structure of contribution to GDP growth by components of the demand is that the final consumption (C) accounted for over 72%; Gross capital formation only accounted for about 27% in 2014. However, just review from 2010 until now, the difference between the investment/GDP ratio and Gross capital formation/GDP ratio have changed significantly (lost 1.4 percentage points). This reflected that more and more the amount of investment lost, or the amount of money is called the investment that is not investment.

Table 06: Gross capital formation/GDP and Investment/GDP of Vietnam

Unit: %

Year	Gross capital fomation/GDP	Investment/GDP	Different levels
2010	35.69	38.5	2.8
2011	29.75	33.3	3.5
2012	27.24	31.1	3.9
2013	26.68	30.5	3.9
2014	26.83	31.0	4.2

Source: General Statistics office of Vietnam

With the Vietnam economics situation, the investment efficiency and GNI continued to decline in the recent period, the economics growth is not sustainable, more and more foreign loans, Vietnam could experience the China situation.

Some recommendations for Vietnam:

Firstly, Experts and planners in medium term and long term have to see the essence of Vietnam's economy; they do not only take the GDP growth as an indicator to judges the growth, the structure and long-term orientation of economy.

Secondly, the calculation results of the General Statistics Office shows that there is a trend of the economic structure to move from the Keynesian theory (the aggregate supply curve is horizontal – the demand increase leads to the supply increase while the price remains unchanged) to the classical theory (the aggregate supply curve is vertical – the demand increase only causes the price to increase). It is also appropriated with the inflation trend in the past years of Vietnam. A certain reason for this trend is the nearly saturating development of the local amount of labor and resources. It means that the encouraging policy should also focus on the technology and efficiency instead of only expanding the industries using crude material and labor as previously.

Thirdly, nowadays, the policy-makers and experts in Vietnam have strong thought about economic structure in the preferential rank of industry, services and agriculture. The researches by the General Statistics Office show that it seems to be a wrong structure, as the manufacturing group has not brought much value added but trade deficit.

Fourthly, Vietnam should focus on supply side, processing of domestic consumption's products, and to have good policies for exports, also in processing domestic's products.

Fifthly, The Vietnam's economy needs a level-playing field between all 3 property sectors (State sector, non-state sector and FDI sector).

Sixthly, China's economic growth has shown signs of slowdown in recent years and the trade-off of investment for growth also is going to the limitation. Therefore, the Chinese government has changed the development viewpoint from short-term to long-term, reduced domestic investment and look towards countries with cheaper labor costs, while China still export domestic goods. In the short term, countries that receive investments from China (including Vietnam) will have GDP growth; but in the long term, the imbalance between saving and investment, net property income would take place when foreign enterprises withdraw capitals and profits from these countries. In addition, there are many problems such as obsolete technologies, natural resources and especially environmental pollution ... which these countries will suffer. That main point we should experience the China situation for Vietnam ourself.

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