

The Involvement in Global Value Chains and its Policy Implication: Evidence of Vietnam

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Abstract

This article examines the involvement pattern in global value chains (GVCs) with its policy implication in Vietnam, in comparison with those of the other Asian countries, by using the OECD value-added-trade data. The study first identified the “smile curve” as the average pattern of the Asian GVCs development paths in total manufactures, in which the domestic value share to exports declines at the early development stage and regains itself at the later stage with the turning point being at 2,015 US dollars as per capita GDP. The study then found that the Vietnamese economy stood at the critical position in its GVCs development path, such that the Vietnamese current per capita GDP is very close to 2,015 US dollars, the Asian average turning point in total manufactures. The sectoral analysis in Vietnam also implied that sophisticated manufacturing sectors needs to be transformed from only assembling activities toward developing domestic capacities to produce parts and components. The Government policies in Vietnam thus matter to nurture local productive capacities, and the “enterprise clustering” and “linkages development” should be the key strategies to facilitate technological transfers from international firms to local ones in line with the GVCs involvement.

Keyword: Global value chains, Vietnam, Value-added-trade data, Manufactures, Local productive capacities

JEL Classification Codes: F14, L60, O53

1. Introduction

The global value chains (hereafter GVCs) have been one of the driving forces for the economic growth in East Asia over the past two decades. According to the World Investment Report 2013 (hereafter WIR, 2013), the GVCs are characterized by the fragmentation of production processes and the international dispersion of tasks and activities among the economies with diversified development stages. The fragmentation theory, proposed by Jones and Kierzkowski (1990, 2005), tells us that a firm's decision on whether to fragment its production processes depends on the differences in location advantages (e.g. the differences in factor prices like wages) and the level of the service-link costs for linking fragmented production processes. The large differences in factor prices and the low service-link costs encourage a firm to facilitate its fragmentation behavior. In this context, the East Asia seems to have the greatest momentum for the GVCs to spread over its area, since the East Asia includes a variety of economies with different factor prices under different development stages and has made policy efforts to reduce the service-link costs through its infrastructure development. In this sense, the East Asia can be said to be the most suitable area for the GVCs, and the GVCs extension and deepening have actually contributed to the economic growth and the greater convergence between the economies in East Asia (see e.g. Kimura, 2006).

Vietnam is not an exception as an economy involved in the GVCs extension. Since the Vietnamese economy has been classified into the latecomers in the ASEAN economies in terms of the lower per capita GDP and wage level, it has been an attractive target for foreign manufacturing industries to relocate their production processes with labor-intensive activities, thereby having accepted a lot of foreign direct investments during the recent decades. In fact, the participation in the GVCs has facilitated the Vietnamese economic growth and accelerated its catch-up momentum toward the ASEAN forerunner economies such as Malaysia and Thailand.

From the long-term perspective, however, the GVCs participation in the form of labor-intensive production activities will not necessarily make the Vietnamese economy sustain its economic growth. As Gill and Kharas (2007) argued in the context of "middle income trap", the growth strategies based on factor accumulation are likely to deliver steadily worse results, which is a natural occurrence as the marginal productivity of factor inputs declines. The heavy dependence on labor inputs for growth through the GVCs participation would simply lead to the "diminish returns" from them. Now that the Vietnamese economy has joined the middle-income group since 2009, it might encounter the danger of "middle income trap", as long as the economy stuck to the labor-intensive activities in the GVCs involvement. There comes the necessity for the Vietnamese economy to transform its structure from factor-driven growth to productivity-driven one through industrial upgrading. In the context of the involvement in GVCs, while the Vietnamese economy accepts foreign investors in its manufacturing activities, it should upgrade its domestic productive capacities by obtaining the technological transfers from foreign investors.

This article examines how the Vietnamese economy has been involved in GVCs and discusses its policy implication, in comparison with those of the other Asian countries by using the OECD value-added-trade

data. The value-added-trade data developed recently by several organizations enable us to identify the contributions of domestic and foreign value added embedded in gross exports. By using this data, WIR (2013) and Taguchi (2014) described the development paths of GVCs for the host economies as follows: the initial stage of GVCs participation reduces domestic value added contribution to exports through depending on the imports of intermediate goods for exporting processed goods, but the domestic value added share for exports is restored at a later stage of GVCs involvement with expanding and upgrading domestic productive capacities including the production of parts and components. The purpose of this article is to clarify what position the Vietnamese economy now stay at in this development process of GVCs, and the policy implication to realize its industrial upgrading. The study also demonstrates the Vietnamese position by total manufactures and individual manufacturing sectors that are classified into eight categories such as food products, textile products, wood products, chemical products, metal products, machinery, electrical equipment and transport equipment.

The rest of the paper is structured as follows. Section 2 reviews previous studies on the economic impacts of GVCs in Asian countries, and clarifies this study's contribution. Section 3 represents the empirical evidence on the GVCs development paths in Asian economies and clarifies the position of the Vietnamese economy as well as its policy implication. Section 4 summarizes and concludes.

2. Literature Review and this Study's Contribution (Omitted)

3. Empirical Evidence

This section first confirms the hypothesis of the GVCs development paths, provides the empirical evidence on the updated GVCs development paths in Asian economies, and clarifies the position of the Vietnamese economy as well as its policy implication.

3.1 Hypothesis of GVCs Development Paths (Omitted)

3.2 Data and Methodologies (Omitted)

3.3 Empirical Evidence on Updated GVCs Development Paths

Table 2-1 to 2-9 and Figure 4-1 to 4-9 represent the estimation outcomes on the GVCs development paths on total manufactures and eight manufacturing sectors. In all cases, the random-effect model is applied in the panel estimation, following the Hausman-test statistics (see Hausman, 1978).

Focusing on the case of total manufactures in Table 2-1 and Figure 4-1, the estimation by a linear equation shows that the coefficient of PCY is insignificant. On the other hand, the estimation by a quadratic equation indicates that the coefficient of PCY is significantly negative; the one of a square of PCY is significantly positive; and the turning point in PCY is in a reasonable level of PCY, namely, 2,015 US dollars

with DVX being 55.3%. This means that the U-shaped smile curve is clearly identified while the linear correlation is not found, as the GVCs development path of Asian economies. This outcome seems to be consistent with Taguchi (2014), although there is some difference in the turning point of per capita GDP. It could also be observed from Figure 4-1 that such forerunners as Malaysia, China, Thailand, Indonesia and Philippines are already passing the turning point by regaining DVX, whereas such latecomers as Cambodia, India and Vietnam are still staying at the declining phase of DVX, during their GVCs participation.

Regarding the analysis of eight manufacturing sectors in Table 2-2 to 2-9 and Figure 4-2 to 4-9, the quadratic estimation shows that the coefficients of PCY are significantly negative; the ones of a square of PCY are significantly positive, and the turning points represent the reasonable levels, in all sectors. On the other hand, in the linear estimation, the coefficients of PCY are insignificant except for only the cases of wood products and transport equipment. The association between DVX and PCY can, therefore, be said to follow the smile curve in all manufacturing sectors.

The smile curves differ, however, in their shapes and turning points according to sectors in the following ways. First, the PCYs in their turning points range from 1,270 to 3,283 US dollars. For instance, the PCYs in textile products (1,448) and food products (1,774) are below the average, while those in metal products (3,283) and transport equipment (2,802) are above the average. Second, the DVXs in their turning points also have a wide range from 45.0 to 79.5 percent. The DVXs in food products (79.5) and wood products (68.1) are above the average, whereas those in electrical equipment (45.0) and machinery (50.6) are below the average. It can roughly be argued that the sectors depending on local resources, such as textile and food products, tend to have the lower per capita GDP and the higher domestic-value share to exports in their turning points, whereas the sectors depending on sophisticated technologies and long production processes, such as metal products and transport equipment, are inclined to have the higher per capita GDP and the lower domestic-value share to exports in their turning points.

From the perspective of individual Asian economies, Figure 4-2 to 4-9 display some variety in the locational positions of smile curves among manufacturing sectors. In the textile products, for instance, all of the economies except Cambodia already pass the turning point in their smile curves. In the metal products, on the other hand, only the smile curves of Malaysia, China and Thailand go through the turning point whereas the others still stay at the stage before the turning point.

To sum up, in total manufactures, the smile curve in which the domestic value share to exports declines at the early stage and regains itself at the later stage is clearly identified with the turning point being at 2,015 US dollars as per capita GDP and at with 55.3% as domestic value share to exports. Looking at the eight-categorized manufacturing sectors, the sectors depending on sophisticated technologies, compared with those depending on local resources, reach the turning point at the higher per capita GDP with the lower domestic value share to exports, so that the majority of individual economies does not pass the turning point.

3.4 Vietnamese Position in GVCs Development Path and its Policy Implication

This section clarifies the position of the Vietnamese economy in the GVCs development paths and extract its policy implication. Focusing on total manufactures in Figure 4-1 again, Vietnam now stands at the critical position such that its per capita GDP in 2014, 2,049 US dollars, is very close to the Asian average turning point, 2,015 US dollars. This means that Vietnam faces the branching-off point on whether the domestic value share to exports regains itself or continues to decline, since the smile curve is not necessarily realized automatically as was mentioned before. On that point, the Government policies to enhance domestic productive capacities matter to keep the smile curve.

Looking at each manufacturing sector, the Vietnamese positions are various and roughly summarized as follows: food products and textile products already pass the average turning point and the textile products particularly enters the phase of regaining the domestic value share to exports; wood products and chemical products nearly reach the turning point and start to regain domestic value share to exports; metal products and transport equipment are far behind the turning point and still stay at the declining phase of domestic value share to exports; and machinery and electrical equipment already pass the average turning point of per capita GDP but still continue to have domestic value share to exports declines. The Vietnamese positions in each manufacturing sector imply that the Government needs to take double-track actions in its GVCs involvement: to consolidate the recovery of domestic value share to exports in the sectors depending local resources such as food and textile products by the maximum use of local productive capacities, and to transform domestic value share to exports into its regaining phase in the sectors depending on sophisticated technologies such as machinery and transport equipment through obtaining technology transfers intensively from foreign investors.

The Vietnamese positions in the GVCs involvement can be illustrated by another angle, i.e., the degree of development in supporting industries in manufacturing sectors. Figure 5 compares the trade structure of transportation equipment and textile products between Vietnam and Thailand. Focusing on transportation equipment in Vietnam in terms of trade value, the import of intermediate goods including parts and components has been far exceeding the export of final goods, while both have been in increasing trends. It is in clear contrast to the case of Thailand where the export of final goods has been exceeding the import of intermediate goods. It implies that Vietnam has less domestic capacities to produce parts and components due to the underdevelopment of supporting industries in the transportation equipment sector. Regarding textile sector, on the other hand, the export of final goods has been more than the import of intermediate goods in Vietnam as well as in Thailand. As for its export-import ratio, that of Vietnam even exceeds that of Thailand. This evidence also suggests the needs for the sectors depending on sophisticated technologies to be transformed from only assembling activities toward developing domestic capacities to produce parts and components.

The serious question then arises on how to nurture local productive capacities in sophisticated manufacturing sectors in the context of the GVCs involvement in Vietnam. WIR (2013) proposed the following key strategies as well as such general policies as workforce skills development, for building

domestic productive capacities of developing economies: “enterprise clustering” and “linkages development”. The enterprise clustering enables the local small and medium-sized enterprises (SMEs) to enjoy “collective efficiency” to enhance their productivity with clustered firms. The linkage development provides the local SMEs with the necessary externalities for successful participation in GVCs as first, second, or third-tier suppliers. These two strategies in line with the GVCs involvement facilitate technological transfers from international firms to local ones, thereby contributing to enhancing the local productive capacities even in sophisticated manufacturing sectors. Kuchiki (2005, 2008) also emphasized the significance in industrial cluster policy for promoting economic restructuring. The Vietnamese Government has so far promoted enterprise agglomeration by setting up special economic zones and inviting foreign and local investors. In particular, since 2011 the Government has established legal frameworks to foster supporting industries in the area such as machinery, transport equipment and electronic products: customs duty exemption for high-tech importing goods, preferential corporate tax for specific industries, financial supports for R&D and human resource development, etc. These policies should be reviewed from the viewpoint of enhancing local productive capacities.

4. Concluding Remarks

This article examined the involvement pattern in GVCs with its policy implication in Vietnam, in comparison with those of the other Asian countries, by using the OECD value-added-trade data.

The study first identified the “smile curve” as the average pattern of the Asian GVCs development paths in total manufactures, in which the domestic value share to exports declines at the early development stage and regains itself at the later stage with the turning point being at 2,015 US dollars as per capita GDP. Regarding the sectoral analysis, the sectors depending on sophisticated technologies and long production processes, such as metal products and transport equipment, tended to reach the turning point at the higher per capita GDP with the lower domestic value share to exports, compared with the sectors depending on local resources, such as textile and food products.

The study then found that the Vietnamese economy stood at the critical position in its GVCs development path, such that the Vietnamese current per capita GDP is very close to 2,015 US dollars, the Asian average turning point in total manufactures, thereby facing the branching-off point on whether the domestic value share to exports regains itself or continues to decline. The sectoral analysis in Vietnam also implied that sophisticated manufacturing sectors needs to be transformed from only assembling activities toward developing domestic capacities to produce parts and components.

The Government policies in Vietnam thus matter to nurture local productive capacities, and the “enterprise clustering” and “linkages development” should be the key strategies to facilitate technological transfers from international firms to local ones in line with the GVCs involvement.

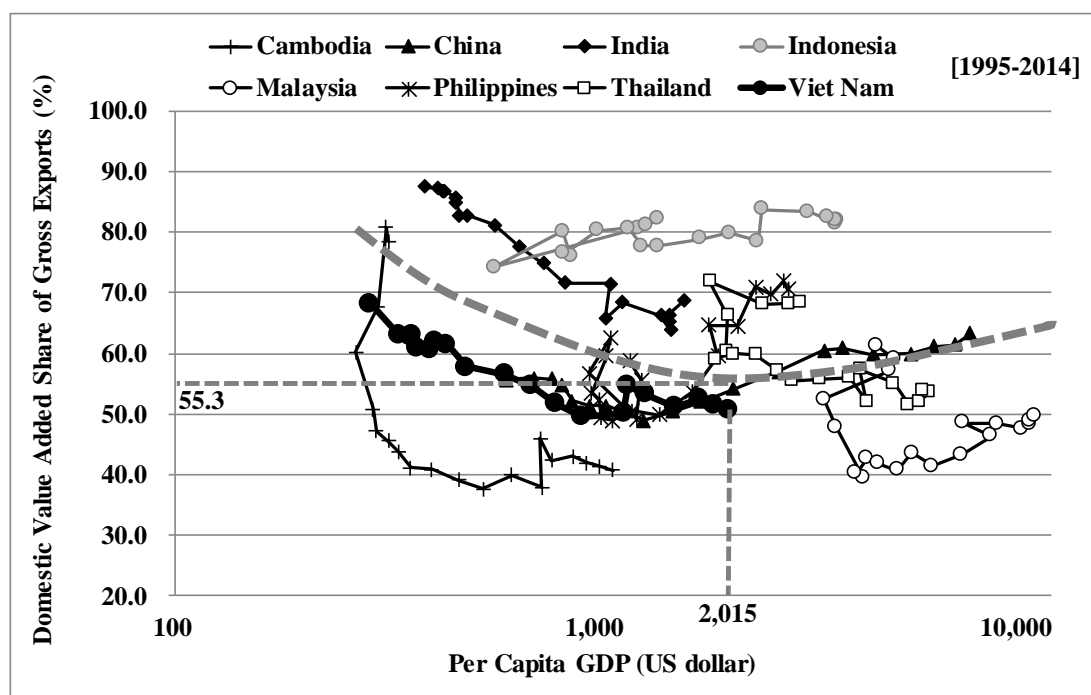
Table 2-1 Estimation on Total Manufactures

Variables	DVX	DVX
Const.	4.258 *** (21.625)	7.604 *** (12.295)
PCY	-0.025 (-1.007)	-0.943 *** (-5.603)
PCY ²		0.062 *** (5.405)
Turning Point USD (share %)		2,015 (55.3)
Adj R ^{**2}	0.000	0.166
Sample size	160	160
Hausman Test		
Chi-Sq. Statistic	0.032	0.000
Chi-Sq. d.f.	1	2
Prob.	0.857	1.000
Estimation Type	Random	Random

Note: DVX denotes domestic value added as a share of gross exports, and PCY denotes per capita GDP. ***, **, * denote the rejection of null hypothesis at the 99%, 95% and 90% level of significance.

Source: Author's estimation based on OECD value-added-trade data and WEO of IMF

Figure 4-1 GVCs Development Path on Total Manufactures



Source: OECD value-added-trade data and WEO of IMF