

Sectoral composition of growth and poverty reduction in Vietnam

MA. Pham Thu Hang*,¹, Assoc.Prof.Dr. Le Quoc Hoi²

¹Academy of Banking, No. 12, Chua Boc Road, Dong Da District, Hanoi, Viet Nam

²National Economics University, 207 Giai Phong Road, Hai Ba Trung District, Việt Nam

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Abstract. This paper examines the impact of the sectoral composition of growth on poverty reduction in Vietnam during the period 1998-2008. It is found that an increase in the proportion of the agricultural sector will lead to a higher poverty rate and that economic growth has a positive impact on poverty reduction in Vietnam. These results support our hypothesis that the sectoral structure of economic growth affects poverty independently from overall economic growth. Moreover, these results also demonstrate that the process of restructuring the economy towards reducing the proportion of agriculture and increasing the share of industry will have a positive impact on poverty reduction in the future.

Keywords: Composition of growth, poverty reduction, Vietnam.

1. Introduction

The relationship between economic growth and poverty reduction has been virtually admitted by a number of studies in the literature. However, it is also evident that there is a sizeable difference in the impacts of a given rate of growth on poverty. Therefore, it is not easy to come to the conclusion that the sectoral composition of growth affects poverty reduction through economic development. The answer to this problem was found to be different from one country to another. From the different findings discovered in various countries, many incomprehensible questions as to which pattern of economic growth has the biggest impact on poverty reduction, have arisen in developing countries.

One of the Millennium Development Goals to 2015 proposed by UNDP is that poverty reduction has been the most prominent target for all countries over the world, especially for developing countries. Vietnam, one of the developing countries in the world, has experienced a high economic growth with a huge reduction in the incidence of extreme poverty since the economic renovation started in the mid 1980s. A question raised is that whether the pattern of Vietnam's growth matters for poverty reduction. Debate on how Vietnam deals with this question will affect the willingness of policy makers to pursue more rapid economic growth and poverty elimination in the future. This paper attempts to find the answer to the central question, "Does the sectoral composition of growth affect poverty reduction independent of the aggregate rate of growth in Vietnam?" In addition, we also try to answer the following sub-question, "Which is

* Corresponding author. Tel.: 84-4-936927815
E-mail: ph.thuhang@gmail.com

the sector having the most impact on poverty reduction in Vietnam?"

This paper is organized as follows. Section 2 reviews the various existing literature on the link between the pattern of economic growth and poverty. Section 3 presents an empirical model used to test the impact of sectoral composition of growth on poverty reduction. The empirical results and discussion are presented in Section 4, and Section 5 provides concluding remarks.

2. Literature review

Lewis (1954) was the first to propose a dual-sector model, based on the assumption that developing countries have dual economies with a traditional agriculture sector and a modern industry sector. He showed that because the wealth of an economy is produced by the industry sector, the agriculture sector therefore it should not be invested in due to its low productivity. He also ascertained the important role of the modern industry sector in producing economic growth as well as increasing incomes for the poor through rural-urban migration.

In the 1950s, Kuznets postulated a correlation between the distribution of income and economic growth. Kuznets provided a U-shape curve hypothesis that economic equality increases over time while a country is developing, and then after a certain average income is reached, inequality would begin to decrease. Kuznets also provided empirical results that during the first period of development, the more GDP increases, the bigger the gap between the rich and the poor. But this trend would be converse in the second period when the economy reached a high level of development. Growing inequality in the Kuznets' hypothesis is not considered as a negative factor and increasing the wealth of one part of the population should promote investment and consumption. Kaldor (1970) also claimed that a certain level of inequality is necessary for economic growth.

Oshima (1993) in a study for Asian developing countries, confirmed the practicability of Lewis' theory in the way that in the agricultural sector the labor force does not always have low productivity. According to this study, growth in the agricultural sector would narrow the gap between rural and urban development by focusing on rural land reform policy and by support of the government. Additionally, the process of improving the income gap between large enterprises and small-scale farms in rural areas would be improved. This would enable the poor rural dwellers to escape poverty and improve the quality of life. This view is also firmly asserted by a study of Mellor in 1976.

Another persuasive advocate of the agriculture-first view, Loayza and Raddatz (2006) also explained how poverty responds to changes in the economic structure of growth. The first concern is that the shortage of effective economic growth is a difficult problem in developing countries in the reduction of poverty. Hence, no lasting poverty alleviation happened where there was a lack of sustained production growth while growth size seemed not to be a sufficient condition for poverty reduction. Loayza and Raddatz also proved that sectors, which have stronger effects on poverty reduction, must be more labor intensive in relation to their size. Hence, agriculture is the most important sector to reduce poverty, followed by manufacturing. The services sector seems not to help the poor to improve their lives.

Apart from the research about the connection between economic growth and inequality as in the rule of Kuznets' curve, many researchers provided opposite ideas. Results attained from Taiwan by Warr and Wang (1999) proved that the growth of industry was always strongly associated with poverty reduction despite the fact that Taiwan was in the first or the second developing period as defined by Kuznets' curve. Taiwan had many outward oriented trade policies implemented

effectively; therefore industrialization could induce significant improvements in poverty reduction in both rural and urban areas.

The research of Warr (1999) on sectoral growth and poverty reduction in Southeast Asia provides an opposing case against the industry-first view. In his paper, cross-sectional data sets were pooled for four Southeast Asian countries including Thailand, Indonesia, Malaysia and the Philippines over the period 1990 to 1999. The results proved that the reduction in poverty depended on the rate of aggregate growth and change in the structure of the economy. He also found that while poverty reduction is highly related to the growth of agriculture and services, there is no significant connection between poverty and industry growth.

In contrast to Southeast Asia, in the context of India, Ravallion and Datt (1996, 2002) showed that rural economic growth has more impact on poverty than urban economic growth, and growth in the service sector has more impact than the agricultural sector. This may come from the fact that services increased demand for labor in poor areas, especially unskilled labor and low-skill workers.

According to a study by Warr (1999), structure of economic growth clearly affects poverty reduction. In addition to sectoral growth, economic policies, including trade policies and industrial policies, also had influence on the sectoral composition of growth.

Montalvo and Ravallion (2009) assessed the contribution to poverty alleviation of the sectoral and geographic areas in China's growth through the expansion of the Ravallion-Chen study. They used the empirical equation of Ravallion and Datt (2002) to test if the pattern on growth matters in poverty reduction at the provincial level. They provided results to support the view that the agricultural sector has been the main driving force in poverty reduction in China. In addition, they found that it was the sectoral unevenness in the growth process rather than its geographic unevenness, that handicapped poverty reduction.

In order to make comparisons with the research results of Datt and Ravallion (2007), Warr (1999) eliminated trends and inflation rate and worked only with the growth rates of three sectors. Warr found weak evidence of any significant poverty-reducing effects of non-primary sector growth. These results were quite similar to results estimated by Datt and Ravallion. For the secondary and tertiary sector, he respectively pointed out significant negative coefficients in just one or two provinces. These results revealed the importance of primary sector growth in China to reduce poverty. However, he could not reject the null hypothesis that the parameters of the secondary and tertiary sectors are equal. Additionally, through the success in China, the idea of a trade-off between compositions of economic growth turns out to be a moot point in making policy choices in the reform period. Hence, policies focusing on agriculture and access to agricultural land need to be improved in order to make better lives as for Chinese people.

Although the methods and models used have much in common, the conclusions of Ravallion and Montalvo (2009) and Warr (1999) have a few minor differences as follows. While Warr confirmed the importance of both the industrial sector and service sector, Ravallion and Montalvo did not confirm the role of the industry sector in poverty reduction in China. The agricultural sector has the more important role. This implies that achievements in the agricultural sector and agricultural policy reform in China will improve the lives of the poor.

Christiaensen, Demery and Kuhl (2010) also provide evidence that the participation of poor households in agriculture was the most important factor in poverty reduction. This paper also provides evidence that agriculture has always occupied an important role in the process of poverty reduction in terms of density, although the share of the agricultural sector tends to decrease. Moreover, the growth rate of the agricultural sector is always smaller

than that of the industry and service sectors as the economy grows. This follows the rules of Engel that agriculture is still the most important in the process of raising living standards for poor countries. Developing the agricultural sector will have the greatest benefit for the poorest groups in society.

In another view of this issue, the research by Suryahadi, Suryadarma and Sumarto (2009) estimated the impact of economic growth on poverty in Indonesia with the change in poverty rate as a dependent variable and the rate of economic growth as an independent variable. In this study, they assumed that there was no effect of the inter-provincial migration. After estimating, they came to some notable conclusions. The first was that growth in the agriculture and service sectors was the key to poverty alleviation in rural areas. Second, they found that there was a linkage between urban growth and rural poverty. Third, they also proved that the industrial sector had a relative minor impact on poverty reduction in rural areas.

Apart from these above researches about poverty reduction and growth, there have been many studies on economic growth and poverty reduction in Vietnam. Balisacan, Pernia and Estrada (2003) suggested that the faster the growth rate was, the less the role of distributive factors that directly influenced the well-being of the poor. In conclusion, they affirmed that the growth process that occurred in Vietnam had a strong pro-poor bias and economic reforms could reinforce both growth and poverty reduction in the long run.

In 2006, Thang Nguyen, Trung Le, Dat Vu and Phuong Nguyen released a paper for the Chronic Poverty Report in 2008-2009. This paper analyzes the impact of the labor market, commodities, and financial and housing markets on the poor, including chronically poor people. This study is particularly interested in the role of agricultural growth to help the poor move out of poverty and prevent the non-poor from falling into poverty. They concluded that

while agricultural growth has proven to be an important factor in increasing the opportunities of rural households and reducing poverty, effective policies to maintain stable growth and high farm incomes are central to maintaining rapid poverty reduction.

Another study of the link between economic growth and poverty elimination is the research of Le Quoc Hoi (2008). He concluded that there is a negative association between the poverty rate and subsequent GDP growth rate, and no empirical evidence of the relation between inequality and the growth rate of GDP. Additionally, he showed that a higher initial poverty level could result in greater inequality in the future.

Recently, Drewby and Cesvantes-Godoy (2010) also provided research on the role of the agricultural sector to reduce poverty in four poor countries, including Vietnam. In their study, the authors pointed out the fundamental reasons that agriculture is important for the group of poor people in developing countries. Agriculture is seen as a fundamental factor to promote economic development in breadth, stabilize food prices, and generate income for the poor. By comparing changes in agricultural sector indices and indicators of poverty, Vietnam is recognized as a country where the growth rate of the agriculture sector has contributed greatly to improving the lives of the poorest groups in society.

3. Empirical model

In this section we will study empirically the impact of sectoral composition of growth on poverty reduction in Vietnam. Inherited from the model in the previous study (Montalvo and Ravallion, 2009), we use the empirical model as follows:

$$\begin{aligned} \text{LnPOV}_{it} = & a_0 + \sum_{j=1}^3 a_j \ln S_{ijt} + a_4 \ln \text{GDPpc}_{it} \\ & + a_5 \ln \text{GINI}_{it} + u_{it} \quad (1) \end{aligned}$$

In which, i represents province and t is year. POV is the poverty rate. Poverty rate is defined as the proportion of people living below the poverty line and poverty rate can be calculated by income. We use poverty rates that are calculated from Vietnam household living standard surveys (VHLSS) from 1998 to 2008 published by the General Statistics Office of Vietnam.

S_{ijt} is measured by $\frac{Y_{ijt}}{Y_{it}}$, of which Y_{ijt} is output value per capita of sector j in province i in year t . Y_{it} is total output per capita of province i in year t . So $\frac{Y_{ijt}}{Y_{it}}$ is the share of agriculture, industry and service sectors in each province when j has the value of 1, 2 and 3 respectively.

GDPpc is GDP per capita which is calculated by real value with constant value of 1994. This indicator is measured by the ratio of GDP in each province to the population of that province.

GINI is the Gini coefficient that is most widely used to measure income inequality in an economy. It is calculated based on the Lorenz curve, which describes the cumulative distribution of income (or expenditure) as a function of the cumulative distribution of households (Cowell, 1995). Based on the availability and convenience of calculation, the Gini coefficient is calculated based on income rather than by expenditure. The Gini coefficient is calculated by the formula of the economist Deaton (1997) as follows:

$$G = \frac{N+1}{N-1} - \frac{2}{N(N-1)u} \left(\sum_{i=1}^n P_i X_i \right)$$

In which u is income of the population, P_i is the P rating of income such that the richest people get a rank of 1 and the poorest a rank of N .

The data used in this paper come from the General Statistics Office of Vietnam. The data consists of 61 provinces in Vietnam. Data on GDP growth, Gini coefficient, GDP per capita are only available from 1998 to 2008 at

provincial level so we can examine the relationship between poverty and composition of growth in the period 1998-2008. Data on poverty rates and Gini coefficients are calculated using data from VHLSS undertaken by the General Statistics Office in 1998, 2002, 2004, 2006 and 2008. The correlation of GDP growth rates and independent variables is weak. Therefore, the potential weak signs of the relationship may change when the regression is estimated.

To determine the relationship between the pattern of economic growth and poverty we construct the following null hypothesis:

H_0 : The sectoral pattern of economic growth affects poverty independent of the aggregate rate of growth.

We estimate equation (1) in order to know whether the sectoral pattern of growth makes sense or not based on the null hypothesis $H_0: a_1 = a_2 = a_3 = 0$. If we reject this null hypothesis, we will test the following null hypothesis $H_0: a_1 = a_2 = a_3$ to know whether the impact of sectoral structure on poverty is the same. The third testing is to review the relevant variables for the model, we rely on the following hypothesis $H_0: a_1 + a_2 + a_3 = a_4$. If the null hypothesis is not rejected, equation (1) becomes equation (2) as follows:

$$\ln \text{POV}_{it} = a_0 + \sum_{j=1}^3 a_j \ln Y_{ijt} + a_6 \ln \text{GINI}_{it} + u_{it} \quad (2)$$

Based on the selection of a suitable model according to equations (1) or (2) we estimate the influence of the sectoral composition of growth on poverty.

We first use pooled-OLS to run the model and then use panel data. We check if pooled-OLS or panel data is more efficient. In this paper, we use two techniques of panel data: fixed effects or random effects. When using a fixed effect, we rely on an assumption that there is a correlation between the error term of the entity and predictor variables. If the correlation happens among error terms, the inference may be incorrect and we need to use random effects.

Unlike a fixed effect model, in a random effect model, the variation across all entities is assumed to be not correlated with independent variables. In this model, we need to identify individual characteristics that affect or do not affect predictor variables. We will use the Hausman test to decide which model is better.

We also construct interaction variables between Gini coefficient and sectoral composition of growth to consider the impact of inequality on the link between sectoral composition of growth and poverty. In particular, we have the interaction model as follows:

$$\ln\text{POV}_{it} = a_0 + \sum_{j=1}^3 a_j \ln S_{ijt} + a_4 \ln \text{GDPpc}_{it} + a_5 \ln \text{GINI}_{it} + \sum_{j=1}^3 a_{6j} \ln S_{ijt} \ln \text{GINI}_{it} + u_{it} \quad (3).$$

Through the three equations above we can test the possibility of the relationship between poverty reduction and sectoral compositions of growth.

4. Empirical results and discussions

4.1. The baseline results of the impact of sectoral composition of growth on poverty reduction

Table 1 provides the results of estimating equation (1) with the sample of 61 provinces of Vietnam. We test the relationship between sectoral composition of growth in each province and its poverty. The testing results show that the null hypothesis is rejected, implying that the structure of growth has absolutely no effect on poverty. Therefore, we can conclude that the effect of sectoral composition of growth on poverty reduction is independent of the overall rate of growth (measured by GDP growth rate). We also reject the null hypothesis that the total share of every sector is equal to total output. Therefore, we will use equation (1) to examine the link between composition of growth and poverty reduction.

Table 1: Results of OLS regression of equation (1).

Explanatory variables	OLS
Intercept	2.53 (0.61)***
Agriculture	-0.012 (0.12)
Industry	0.52 (0.09)***
Service	0.03 (0.15)
GDPpc	-0.78 (0.09)***
Gini	0.45 (0.21)**
N	305
R-Square	0.48
Test $\log S1 = \log S2 = \log S3 = 0$	F (3, 299) = 21.76 Prob > F = 0.000
Test $\log S1 = \log S2 = \log S3$	F (2, 299) = 22.91 Prob > F = 0.000
Test $\log S1 + \log S2 + \log S3 = \log \text{gdppc}$	F (1, 299) = 20.91 Prob > F = 0.000

The dependent variable is the poverty rate. Standard errors are in parentheses. *, **, *** denote significance at 10%, 5% and 1% levels respectively.

OLS regression may be inappropriate due to the lack of observed variables and unobserved variables. Thus, we use a random effect model

and a fixed effect model to correct this problem. The results of fixed and random effect models are presented in Table 2:

Table 2: Panel data estimation results of equation (1).

Explanatory variables	Random effect	Fixed effect
Intercept	2.81 (0.68)	3.35 (0.92)
Agriculture	0.47 (0.11)***	0.36 (0.27)
Industry	-0.14 (0.15)	-0.44 (.21)**
Service	0.01 (0.18)	0.06 (0.25)
GDPpc	-0.78 (0.11)***	-0.77 (0.15)***
Gini	0.43 (0.21)**	0.55 (0.27)**
N	305	305
R-Square	0.48	0.46
	chi2(5) =	6.32
Hausman Test	Prob>chi2 = 0.2765	

*The dependent variable is the poverty rate. Standard errors are in parentheses. *, **, *** denote significance at 10%, 5% and 1% levels respectively.*

The results of the Hausman test from Table 2 show that the random effect model is better than the fixed effect model so we will use the results of the random effect model for discussion. It can be seen that agriculture is the sector that has the greatest impact on poverty in Vietnam. In particular, a decrease in the share of the agricultural sector in the economy will lead to a reduction in poverty. Conversely, the industry and service sectors have no effect on poverty. These results are consistent with the fact that most poor people in Vietnam are economically active in rural or mountainous areas, where agriculture remains the main sector and accounts for the role of utmost importance in creating employment and income. The industry and service sectors do not have impacts on poverty in Vietnam because of the fact that these sectors have been mainly developed in urban areas and in large industrial areas. Therefore, these sectors have not really created incomes and jobs for the poor, who

mainly live in rural areas. On the other hand, in urban areas, although poverty rates are less than in the rural and mountainous areas, the poor also receive negative effects from the process of industrialization.

GDP per capita and income inequality also impact largely the poverty rate. In particular, an increase in GDP per capita will lead to a decrease in the poverty rate. In addition, when inequality increases, the poverty rate also tends to increase significantly. A high Gini coefficient indicates that the rich in society gets richer whereas the poorer groups tend to be relatively poorer. Therefore, the increase in Gini in recent years has been a bad sign for the economy and can be considered as factors to prevent poverty reduction.

Table 3 provides the results of estimating the interaction models between the Gini coefficient and the shares of the agriculture, industry and service sectors. The Hausman test shows that the random effect model is chosen.

The interaction coefficients show that a province with a high Gini coefficient and high industrial share will tend to have higher poverty

reduction. However, the interaction variables between Gini and agriculture and service variables are not significant.

Table 3: Estimation results of interaction variable model.

Explanatory variables	Random effect	Fixed effect
Intercept	-1.07 (2.05)	-2.16 (2.52)
Agriculture	0.84 (0.47)*	1.2 (0.6)**
Industry	2.18 (0.59)***	2.34 (0.75)***
Service	0.16 (0.68)	0.5 (0.74)
GDPpc	-0.83 (0.11)***	-0.86 (0.15)***
Gini	-5.5 (3.73)	-6.36 (4.08)
Agri*Gini	0.38 (0.92)	0.39 (0.95)
Indus*Gini	4.01 (1.04)***	4.37 (1.18)***
Serv*Gini	-0.09 (1.37)	0.29 (1.48)
N	305	305
R-Square	0.52	0.51
Hausman Test	chi2(8) = 7.32 Prob>chi2 = 0.5026	

The dependent variable is the poverty rate. Standard errors are in parentheses. *, **, *** denote significance at 10%, 5% and 1% levels respectively.

Thus, the relationship between agriculture and poverty reduction implies that a reduced proportion of the agricultural sector will result in reduced poverty in the provinces of Vietnam. During the period of economic restructuring in the trend rate of the industrial sector, this seems reasonable. However, the relationship between the industrial sector growth and poverty reduction is not really clear because the process of economic restructuring does not occur uniformly in all provinces. Therefore, in addition to structural studies of the general growth of industry in Vietnam and its impact on poverty, we will examine this relationship further in the provincial structure of the industrial sector, which is relatively high in

Vietnam, and the poverty situation in these provinces.

4.2. The role of sectoral composition of growth in poverty reduction in high-proportional industry provinces

This section examines the relationship between the sectoral composition of growth and poverty reduction in high industry-share provinces. A province with a high proportion of industry is a province with the industrial share greater than 30 percent and with the growth rate of the industrial sector greater than 10 percent. The estimation of results for high industry-share provinces is presented in Table 4.

Table 4: Estimation results for high-proportional industry provinces.

Explanatory variables	Random effect	Fixed effect
Intercept	3.38 (0.98)	3.77 (1.32)
Agriculture	0.51 (0.14)***	0.48 (0.34)
Industry	-0.57 (0.26)**	-0.66 (0.34)*
Service	-0.19 (0.24)	-0.18 (0.32)
GDPpc	-0.59 (0.13)***	-0.66 (0.18)***
Gini	0.67 (0.30)**	0.75 (0.39)*
N	184	184
R-Square	0.53	0.53
Hausman Test	Chi2(5) =	1.35
	Prob>chi2 =	0.9295

The dependent variable is the poverty rate. Standard errors are in parentheses. *, **, *** denote significance at 10%, 5% and 1% levels respectively.

It is clear from Table 4 that the Hausman test shows that the random effect model is chosen. It also can be seen that the role of industry in the province with high industrial share is extremely important for reducing poverty. The results show that in provinces where the share of industry is large, a 1 percent increase in the proportion of the industry leads to a 0.57 percent lowering of poverty. Similar to the baseline model, there is also a positive relationship between the share of agriculture and the poverty rate.

There are several reasons to support the empirical result that the industrial sector plays an important role in poverty reduction in high industry-share provinces. First, the development of industry is associated with the construction of industrial parks such as in Hai Duong, Bac Ninh and some provinces in the Cuu Long (Mekong) River Delta. The development of industrial parks and export processing zones also open up a large economic space and a new channel which has the potential to attract workers. Industrial development is synonymous with the formation and development of a strong labor market,

especially for highly skilled workers in our country. Currently, 80 percent of the salary of workers comes from key economic areas, large cities and industrial concentration.

The impact of sectoral composition of growth on poverty reduction is the greatest in the industry sector, followed by the agriculture sector. Another interesting result is that in provinces with a high proportion of the industry sector, the impact of the agricultural sector on poverty reduction is still quite large. This is consistent with the process of industrialization, which has happened powerfully in all provinces with high industry share. Thus, the impact of the industrial sector on poverty reduction in these provinces is quite evident.

According to the results obtained from Table 4, economic growth and inequality also strongly influence poverty reduction in high industry-share provinces. However, the effects of economic growth in highly industrialized provinces tends to be less than in all provinces in the previous section (see Table 2), although the overall growth rate of these provinces is the highest of all provinces in Vietnam. In contrast, inequality seems to happen more severely in

highly industrialized provinces and the impact of inequality on poverty reduction in these provinces is greater than in other provinces.

Table 5 provides the results on the role of inequality in the impact of economic structure on poverty reduction in Vietnam in provinces of high industrial density. The results of the Hausman test show that the random effect model is chosen. It also can be seen that provinces with high industrial density and high inequality may lead to a higher poverty rate. As mentioned above, as in other developing countries, in Vietnam large flows of migrants from agricultural areas to industrial areas still exist. There are two reasons for this phenomenon. The first reason is that people need more opportunities for getting better jobs

with higher incomes. The second is that reduced land area for agricultural activities and application of science and technology certainly lead to the decline in agricultural workers. However, many people who have migrated to industrial development zones, still fall into poverty and receive low incomes. The development of industrial zones sometimes does not have a positive impact on the creation of jobs for unskilled labor. This suggests that not only does the growth of the industry sector provide a sufficient condition for poverty reduction, but the distribution policy of the government also plays a crucial role. This is probably true for all provinces in Vietnam, especially in provinces with high share of industry and high-income inequality.

Table 5: Estimation results of interaction variables in high industry-share provinces.

Explanatory variables	Random effect	Fixed effect
Intercept	-1.71 (3.16)	-3.59 (3.83)
Agriculture	1.12 (0.59)*	1.44 (0.74)*
Industry	2.05 (0.98)**	2.73 (1.21)**
Service	0.09 (0.99)	0.53 (1.07)
GDPpc	-0.65 (0.14)***	-0.72 (0.18)***
Gini	-7.98 (6.16)	-10.61 (6.93)
Agri*Gini	1.01 (1.19)	0.91 (1.27)
Indus*Gini	4.49 (1.71)***	5.36 (1.95)***
Serv*Gini	0.32 (2.13)	1.39 (2.37)
N	184	184
R-Square	0.56	0.55
Hausman Test	chi2(8) = 4.89 Prob>chi2 = 0.7688	

The dependent variable is the poverty rate between. Standard errors are in parentheses. *, **, *** denote significance at 10%, 5% and 1% levels respectively.

5. Conclusions

Through empirical analysis in the previous section, we can draw the following conclusions about

the relationship between the sectoral composition of growth and poverty reduction in Vietnam.

First, economic structure change with a decrease in the share of the agricultural sector

has a positive impact on poverty reduction. Agricultural development is a good indicator for poverty reduction, but an increase in the proportion of the agricultural sector in the economy will have an adverse effect on the reduction of poverty.

Second, an improvement in GDP per capita has a positive impact on reducing poverty. In the period 1998-2008, the results show that a one percent increase in GDP per capita will help reduce the poverty rate by about 0.78 percent.

Third, the Gini coefficient is proportional to the poverty rate. When the Gini increases by one percent the poverty rate will increase by about 0.43 percent. This is consistent with the fact that the absolute gap between rich and poor population groups in Vietnam has increased significantly while the poverty rate has tended to decrease since 1992.

The final conclusion is derived from estimates of those provinces with a high industry share in Vietnam. In provinces of high industrial density, the industrial sector has contributed positively to poverty reduction. At the same time, in provinces with a high Gini coefficient, the development process tends to increase the relative proportion of the poor. Therefore, the Government of Vietnam needs to implement policies to promote the process of industrial development as well as reduce income inequality.

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Cấu trúc tăng trưởng kinh tế và giảm nghèo ở Việt Nam

ThS. Phạm Thu Hằng*¹, PGS.TS. Lê Quốc Hội²

¹Học viện Ngân hàng, Số 12, đường Chùa Bộc, Quận Đống Đa, Hà Nội, Việt Nam

²Trường Đại học Kinh tế Quốc dân, 207 Đường Giải Phóng, Quận Hai Bà Trưng, Hà Nội, Việt Nam

Tóm tắt. Bài viết nghiên cứu các tác động của cấu trúc tăng trưởng kinh tế theo ngành tới giảm nghèo ở Việt Nam trong giai đoạn 1998-2008. Kết quả nghiên cứu cho thấy sự gia tăng tỷ trọng của ngành nông nghiệp sẽ dẫn đến tỷ lệ nghèo tăng cao và tăng trưởng kinh tế có tác động tích cực tới xóa đói giảm nghèo tại Việt Nam. Kết quả nghiên cứu cũng ủng hộ giả thuyết cho rằng cấu trúc tăng trưởng kinh tế theo ngành và tăng trưởng kinh tế chung có tác động đến vấn đề nghèo đói một cách độc lập với nhau. Hơn nữa, những kết quả này chứng minh thực tế rằng quá trình tái cấu trúc nền kinh tế theo hướng giảm tỷ trọng nông nghiệp và tăng tỷ trọng công nghiệp sẽ có tác động tích cực tới giảm nghèo trong tương lai ở Việt Nam.