

## The Relation Between Exports of Main Products And Economic Growth of Key Economic Regions in Viet Nam

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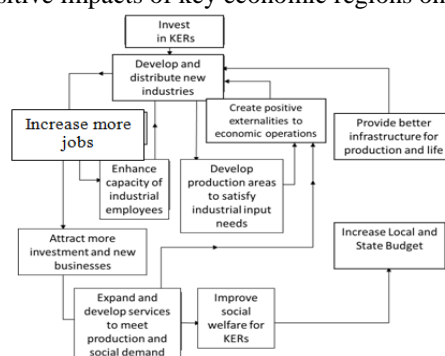
**ABSTRACT :** This paper clarifies the literature of key product export growth and regional economic growth. The paper analyses impacts of key product export on regional economic growth and vice versa. The paper provides recent empirical evidence of the relation. Besides an evaluation of the recent relation between export growth and economic growth in Viet Nam, the paper assesses the relation between key product export and economic growth during 1996-2012 period based on quantitative and qualitative approaches. With constructed models, the paper examines the relation between key product export and economic growth and concludes that it is positive. The research findings show that key product export in every economic region contributes positively to regional economic growth although it varies in different regions. Based on existing literature and empirical analysis, the paper provides a number of strategies to improve key product export contribution to key economic regions in the most effective manner and vice versa. The paper creates a fundament for researchers and policy makers both regionally and nationally in order for developing effective orientations, policies and measures for promoting export and sustainable economic development.

**Key words:** Main Exports; Key Economic Regions; Viet Nam; Regional Economic Growth.

### I. Introduction

Sustainable economic growth meaning quality economic growth has recently clarified by economists to imply economic growth in line with life quality improvement with indicators of higher income, improved education quality, better health care, reduced hunger and eradicated poverty, clean environment, more opportunities in life and employment, freedom and entertaining spiritual life. Exports in key economic regions (KERs) are recognized to be one of the main factors that help attain the mentioned indicators. To create incentives for national development and a connection and collaboration in socio-economic development between different regions in Vietnam, the Prime Ministers approved several decrees and decisions on generation of key economic regions from 1997 and 2009, including Government's Decree 92/2006/ND-CP on development, approval and management of the master plan of socio-economic development in key economic regions, Decision 492/QD-TTg dated 16/4/2009 on establishment of Mekong Delta key economic region, etc. The Government has planned to have four major key economic regions: Northern key economic regions (NKER), Central key economic region (CKER), Southern key economic regions (SKER), and Mekong Delta key economic region (MKER).

Figure 1: Positive impacts of key economic regions on other regions



Source: Le Thu Hoa (2007)

KERs have contributed significantly to GDP growth and economic scale and proved to be a pioneer engine in national socio-economic development in recent years. Similar to nuclear territories, KERs not only have

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contributions to their own economic growth but also to national economic growth and structure. Important services such as imports – exports, financial and monetary services, tourism, and science and technology of KERs have shown their positive impacts on other regions (see Figure 1). Possessing a great number of resources, KERs provide a significant quantity of industrial products and services with high quality, meeting demands of different regions in the country and also being a source of exports. Many areas in KERs become international transaction centers and play a role of vital gates of foreign trade with other countries in the world. Their seaports, airports, railway systems and roads do not only take an important role in the regions themselves but also are places to receive and deliver imported and exported goods for other regions. KERs ensure national economic growth when they are the engine to drive the development of other economic regions. Developing KERs, Vietnam has generated regions that not only promote national socio-economic development but also take other roles of international cooperation and integration, and reception of information about scientific, technological, economic, and cultural development in the world before spreading it to other regions so that they can create a playground for foreign investors and destinations for international tourism experts and investors. The relation between exports and economic growth and the role of exports for economic growth have been analysed in several recent empirical studies. Studies into the relationship between exports of key commodity groups and economic growth have also been carried out widely. A number of studies show a vague role of exports in GDP growth in some nations and groups of nations (Richard, 2001) with limited contribution. The reality has shown no research findings of negative relationship between exports of key commodity groups and economic growth. Most studies agree with a conclusion of a positive relationship between exports and economic growth. David Ricardo and Adam Smith's theories are still the foundations for studies related to exports and economic growth. Adam Smith proposed that international trade acts as a vehicle for productivity improvement by expanding the size of markets to realise economies of scale. David Ricardo also demonstrated that static efficiencies are associated with comparative advantage in international trade. Empirical evidence based on the literature has proved the positive relationship between exports and economic growth. Researchers apply statistical analysis models and methods in their empirical research in different regions and nations in the world. Giles and Williams (2000) had a cross-sectional study of correlations of regressions with exports of key commodity group exports as independent variable and economic growth as dependent variable, and other factors of economic growth as independent variables.

Ram (1985), Beko (2003), Adelman (1984), Chow (1987), and Al-Yousif (1997) consider the relationship between exports of main commodities and economic growth in four countries in Arab Gulf region; Rahman và Mustafa (1997), Ibrahim (2002) and Ekanayake (1999) study 13, 6, and 8 countries in Asia respectively. The relationship is also found in studies of Sharma & Panagiotidis (2005) for the case of India; Shan & Tian (1998) for Shanghai, a very large city in China; and Beko (2003) for Slovenia. The studies do not only show the positive relationship between exports of main commodities and economic growth but also indicates that only when exports expand can economic growth take place. These conclusions have important policy implications. Rahman and Mustafa (1997) suggest countries with short-run and long-run virtuous circles emphasise both higher economic growth and export promotion policies among other factors. In general, it means that depending on different uni- or bi-directional causality between exports and growth, each country will have appropriate policies to develop either or both of these factors.

Although the above mentioned studies look at economic growth from different perspectives such as growth quality, factors contributing to economic growth, factors impacting economic growth, etc., they do not focus on the relationship between exports of key commodity groups and regional economic growth. It is important and also the objective of the study to quantify a number of relationships to prove how key commodity export growth contribute to regional economic growth in order to propose recommendations for regional sustainable economic growth on the basis of export growth. In addition, the study aims at identifying which key exported commodity groups contribute the most to regional economic growth.

## **II. Methodology**

The study uses secondary data (available statistics) of export values of key commodity groups in cities and provinces of KERs for analysis and discussions of regional exports and economic growth and impacts of exports on regional economic growth in KERs. With tables and graphs using Excel, the paper presents comparisons of statistics between years and critical comments to identify the relationship between exports and economic growth in general and exports of some key commodity groups and regional economic growth in particular.

Based on existing data, the author applies statistical analysis and applied economic analysis methods to study the relationship between export growth and economic growth from different angles: exports in different regions, exports in different provinces and cities, exports of exported commodity lines, key exported commodity group, and commodity export structure from 1995-2011, to name a few. Granger cause and effect model (Granger, 1969) is illustrated in the paper. According to Granger (1969), a variable (exports in this exercise) is considered

as Granger’s cause when it affects another variable (GDP) if export values in the past and present help predict GDP values. To examine if exports affects GDP, it is important to test the relationship using Granger model. Accordingly, these two variables of exports and GDP are examined using the following two equations:

$$GDP_t = \sum_{j=1}^p \eta_j Export_{t-j} + \sum_{j=1}^p \gamma_j GDP_{t-j} + v_t \quad (1)$$

$$Export_t = \sum_{j=1}^p \beta_j GDP_{t-j} + \sum_{j=1}^p \alpha_j Export_{t-j} + u_t \quad (2)$$

Assumption H<sub>0</sub> is tested as follows:

H<sub>1</sub>:  $\eta_{j=0, j=1, \dots, p}$ , that means exports has no impacts n GDP and

H<sub>1</sub>:  $\beta_{j=0, j=1, \dots, p}$ , that means GDP has no impacts on GDP.

If no assumptionns are disproved, exports have no impacts on GDP and GDP has no impacts on exports, which means these two variables are independent of each other. If the first assumption is disproved, exports have impacts on GDP. If the second assumption is disproved, GDP has impacts on exports. If both assumptions are disproved, there exists a two way causal relationship between exports and GDP and then the relationship continues to be examined via two regression equations as follows:

$$Export_t = \delta + \phi GDP_t + \varepsilon_{1,t} \quad (3)$$

$$GDP_t = a + \psi Export_t + \varepsilon_{2,t} \quad (4)$$

The relationship is often tested via F tests which are also used by Chow (1987), Marin (1992), Pomponio (1996), McCarville và Nnadozie (1995), Darat (1996), and Heller at al. (1978). Using normal causal link is believed to be irrelevant (Islam, 1998; Shan & Tian, 1998; and Tsen, 2006). Findings based on Granger model show a close relationship between exports and economic growth.

### III. Results And Findings

#### 3.1. Examination of the relationship between exports of key commodity groups and regional economic growth in KERs

To examine the relationship between exports of key commodity groups and economic growth of KERs, it is necessary to consider the relationship between export turnover of key commodity groups and GDP of KERs using four equations (1), (2), (3), and (4).

Data collected from 1995-2010 are data of four KERs and their export turnover which is calculated based on export turnovers of four following groups in KERs: new commodity groups including ship building products, steel, chemicals; agro-forestry and fishery products; fuels and minerals; and processed products (of light industry and small industry).

Regressions show that regression parameters are significant at 1% value and regression models result in significant results proving positive relationship between economic growth and exports. H<sub>0</sub> assumption is disproved, and H<sub>1</sub> is accepted. That means regional GDP increase leads to increased economic growth, creating conditions for further exports of key commodity groups in KERs. According to the assumption, an increase of 1 unit of regional economic growth tends to result in an increase of 1.49 units of exports. Examination of Granger causal link with two variables of exports and GDP show a two way positive relationship between exports and GDP or regional GDP.

#### 3.2. Examination of contribution of exports of key commodity to economic growth of KERs

Examination of contribution of exports of key commodity to economic growth of KERs is undertaken through two equations and its findings can be seen in Table 1. with 360 observations have been conducted and then analysed in the form of panal data. Besides variables of GDP, exports and regional exports, the paper provides information of dummy variables of KERs to analyse impacts of exports of key commodities on regional economic growth and vice versa.

**Table 1:** Results of regressions of impacts of exports of each key commodity group on economic growth in each KER

Dependent Variable: GDP\_VND

Independent variable	Estimation coefficient	Regression equation				
		(1)	(2)	(3)	(4)	(5)

Intercept	Parameter	13824.82	3391.83	14140.15	13618.34	11686.42
	T_statistics	11.23	3.84	11.07	11.63	10.15
GROUP1_VND	Parameter	5.73				3.79
	T_statistics	39.11				33.00
GROUP2_VND	Parameter		2.48			0.39
	T_statistics		23.38			7.67
GROUP3_VND	Parameter			1.21		0.62
	T_statistics			16.72		15.48
GROUP4_VND	Parameter				0.96	0.22
	T_statistics				8.23	13.28
REGION1	Parameter	-6532.24	3722.72	-2703.99	-2345.05	-4040.42
	T_statistics	-4.96	2.99	-1.45	-1.42	-3.27
REGION 2	Parameter	-8793.75	2231.78	-5754.28	-5772.46	-6635.13
	T_statistics	-6.65	2.28	-3.92	-4.36	-5.37
REGION 3	Parameter	-3620.30	7551.83	-4067.05	-3325.40	-7233.29
	T_statistics	-1.95	4.32	-2.49	-1.19	-5.67
R <sup>2</sup>		0.82	0.64	0.46	0.21	0.92

Sources: Author's estimation using Eviews

With dummy variables to examine impacts of exports of each key commodity group on regional economic growth, variables REGION1, REGION2, and REGION3 are false variables of NKER, CKER and SKER. When MKER is analysed, regression coefficient of these variables is zero.

Examination of the relationship between regional economic growth and key commodity group export growth of each commodity group in each region shows that regression parameters are all 1% statistically significant and it is possible to disprove assumption  $H_0$  and accept assumption  $H_1$  or each group of key commodities has positive impacts on regional economic growth. As matter of fact, slopes of these regions are positive and statistically significant at 1 showing contribution of exports of key commodity groups to GDP in the four regions. At the same time, regression results of equations (1), (2), (3), (4) and (5) imply that new key commodity group of industrial and shipbuilding products, steel, and chemicals tends to make the greatest contribution followed by minerals and fuels; agro-forestry and fishery products rank third and the final group is process goods (including light and small industry). Equation (5) shows that:

- If region 4 is studied, slopes of regions 1, 2, and 3 are zero and the intercept is estimated to be  $a_0 = 11686.42$ .
- If region 4 is studied, with  $REGION1 = 1$ ,  $REGION2 = REGION3 = 0$ , the intercept of Region 4 is estimated to be  $a_0 + a_1 = 11686.42 - 4040.42 = 7646$ .
- If region 3 is studied, with  $REGION3 = 1$ ,  $REGION1 = REGION2 = 0$ , the intercept of Region 3 is estimated to be  $a_0 + a_3 = 11686.42 - 7233.29 = 4453.13$ .

As the estimated parameter of the variable of key commodity group export growth has positive value and a positive relationship with economic development, when dummy variables are used to analyse Region 4, the intercept is positive. That means key commodity group exports in every region have positive contribution to regional economic growth. Contribution of exports to regional economic growth varies in different KERS; in particular, estimated intercepts show that if exports of key commodity group increase by 1 unit, region 4 has the greatest contributions followed by regions 1, 2, and 3 respectively to their economic growth.

It can be concluded from the empirical research findings that exports of key commodity groups in MKER has a positive role in its economic growth. Promotion of exports of commodity group 1 tends to raise its GDP at a higher rate compared to that in regions 3, 1, and 2. Promotion of exports of commodity group 2 tends to raise GDP at the highest rate in regions 3, 1, 4, and 2. Promotion of exports of commodity group 3 tends to raise GDP at the highest rate in regions 4, 1, 3, and 2. Promotion of exports of commodity group 4 tends to raise GDP at the highest rate in regions 4, 1, 3, and 2. However, regression results of equations (3) and (4) in table 2 show that it is impossible to conclude if commodity groups 3 and 4 have positive contribution to NKER because the estimated coefficient of dummy variables in Region1 is in  $H_0$  range and 5% statistically significant.

### **3.3. Examination of contribution of regional economic growth to exports of key commodity groups in KERS**

For examining impacts of regional economic growth on exports of key commodity groups, it is important to create dummy variables of regions: REGION1, REGION2, and REGION3 are dummy variables for NKER, CKER, and SKER respectively. When MKER is studied, the regression coefficient of dummy variables is zero. Regression results of five equations (1, 2, 3, 4, and 5) are shown in Table 2. In equation (1), slope of GDP

variable is positive and statistically significant at 1%, which means increased regional economic growth contributing to exports of key commodity groups. Calculation of intercepts of the regions can be used as a basis to conclude that regional economic growth contributes to exports of key commodity groups in regions 3, 2, 1, and 4 in the order of the most to the least significantly.

In equations (2) and (4), slope of GDP variable is positive and statistically significant at 1%, which means increased regional income contributing to promotion of exports of key commodity groups 1 and 4. The intercepts of the regions show that regional economic growth contributes to exports of key commodity groups in regions 3, 1, 2 and 4 in the order of the most to the least significantly. In equation (3), economic growth contributes to exports of key commodity group 1 in regions 4, 3, 2, and 1 in the order of the most to the least significantly. Regression results of equation (4) cannot be used as the basis to conclude if GDP contributes to exports of key commodity group 3 in each region because the regression coefficient is not statistically significant (5%).

**Table 2:** Regressions of impacts of regional economic growth on exports of each key commodity group

Independent variable	Dependent variable	Regression equations				
		(1)	(2)	(3)	(4)	(5)
		EXPORTS_VND	GROUP1_VND	GROUP2_VND	GROUP3_VND	GROUP4_VND
Intercep	Parameter	-6360.45	-1890.74	1722.42	-3689.85	-682.07
	T-statistics	-6.76	-10.68	6.76	-6.52	-5.62
GDP_NOMINAL	Parameter	0.86	0.14	0.18	0.26	0.08
	T-statistics	37.52	51.54	24.64	14.41	14.89
REGION1	Parameter	1007.40	1331.55	-2807.92	1008.72	1437.91
	T-statistics	1.00	7.41	-8.63	1.41	7.29
REGION2	Parameter	2205.96	1243.85	-2406.76	1750.77	504.21
	T-statistics	2.20	6.60	-8.90	3.00	4.16
REGION3	Parameter	6925.43	994.31	-1574.70	2581.43	1899.25
	T-statistics	4.81	4.24	-6.38	3.27	2.93
R <sup>2</sup>		0.81	0.89	0.70	0.38	0.44

Sources: Author's estimation using Eviews

In conclusion, the analyses show that regional economic growth has positive impacts on export growth of key commodity groups in regions in general and in each commodity group in particular, except or commodity group 3.

#### IV. Summary And Discussion

It can be concluded that exports of key commodity of MKER contribute positively to regional economic growth. Promotion of exports of commodity group 1 tends to raise its GDP at a higher rate than that of regions 3, 1, and 2. Promotion of exports of commodity group 2 tends to raise GDP at the highest rate in regions 3, 1, 4, and 2. Promotion of exports of commodity group 3 tends to raise GDP at the highest rate in regions 4, 1, 3, and 2. Promotion of exports of commodity group 4 tends to raise GDP at the highest rate in regions 4, 1, 3, and 2. However, regression results of equations (3) and (4) in table 2 show that it is impossible to conclude if commodity groups 3 and 4 have positive contribution to NKER because the estimated coefficient of dummy variables in Region1 is in  $H_0$  range and 5% statistically significant.

There is a close relationship between export turnover in commodity lines and economic growth. However, how commodity export structure affects economic growth depends on the proportion of export turnover of each commodity group in the total turnover. The new commodity group has been contributing significantly in key economic regions. Fuels and minerals also have greater influence on economic growth in NKER and SKER than that in two other regions. Agro-forestry and fishery products have a more significant role in economic growth in NKER and MKER than two other regions. A similar picture is observed in the remaining commodity groups. These conclusions are useful for policy makers and state administration agencies to develop relevant policies to promote regional economic growth. In addition, exports of processed products have a more significant contribution to economic growth compared to that of raw commodities.

Moreover, the above analyses also demonstrate that regional economic growth plays a positive role in export growth of key commodity groups in the regions in general and of each commodity group in particular, except for group 3 as no conclusions are drawn.

## V. Recommendations

Among several factors contributing to regional economic growth, exports of key commodity groups plays an important part especially when Vietnam is proceeding a more intensive international integration. The study into the relationship between export growth of key commodity groups and economic growth has further proved the relationship with a multi-faced analysis of how exports of key commodity groups influences regional economic growth. Accordingly, region economic development is oriented considering constituting and influential factors of sustainable but rapid economic growth.

The paper has assessed the relationship between export growth of key commodity groups and economic growth in Vietnam in general and in key economic regions in particular both quantitatively and qualitatively in order to find out influential and interactive factors. The research findings show that export of key commodity groups in each studied regions has positive contribution to regional economic growth. Contribution of regional exports to regional economic growth varies in different regions; in particular, the intercept shows that region 3 has the greatest contribution followed by regions 4, 1, and 2. It is an empirical foundation to propose solutions of export and economic growth promotion and inquiries into their impacts on other macroeconomic relationships.

In spite of the findings, the research reveals some limitations while it has not assessed the relationship between exports of key commodity groups in each province and city in each region and regional economic growth. Future studies may require more data or surveys for primary data that can be important for estimation and evaluation of its impacts in each city or province on regional economic growth.

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