Relationship between Economic Growth and Employment in Vietnam

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ABSTRACT

The paper examines the relationship between employment and economic growth during the period 1991–2012 in Vietnam and obtains forecasts for employment from 2013 to 2020, using theories of production function for establishment of econometric models. The results show that the employment elasticities of economic growth are -0.49, 0 55 and 0.66 for agriculture, manufacturing and service sectors respectively and 1 71 for Vietnamese economy as a whole in the period. The results also indicate that an annual growth rate of 6% - 7% can help create from 55.322 to 56.243 million jobs by 2015 and from 61.739 – 64.519 million ones by 2020. Additionally, the research offers several important policy recommendations to promote economic growth and job creation in Vietnam in the next period.

1. INTRODUCTION

After over 25 years of economic reform, Vietnam has escaped from poverty, backwardness and underdevelopment and started an extensive, intensive and overall integration into the world economy. To reach such achievements, the government has reformed its management mechanism, developed a multi-sector economy, and made the best use of internal and external resources to promote the socioeconomic development. In this development, employment policy plays an important role in both individual and social life.

Labor market can either promote or restrict economic growth. Hence, examining the relationship between economic growth and employment is one of the important tasks for policy makers. This problem has been explored from different aspects for years: factors affecting employment in Vietnam by Đặng (2002), impacts of economic growth on employment in different European countries by Herman (2011), Andrea *et al.* (1995), Padalino *et al.* (1997), and Seyfried (2003), etc.

Most researches in Vietnam employ qualitative approaches whereas economic models are used by some foreign researchers for examining the employment elasticity of growth. The socioeconomic development strategy adopted by the Vietnamese government for the period 2011–2020 sets a target growth rate of 7% - 8% per year (Vietnam's Government, 2011). Hence, the question is how many jobs are needed to improve personal income and living standard

To find answers to the aforementioned question, the paper examines the relationship between economic growth and employment in Vietnam for the coming years, which is considered to be a basis for prediction of job creation as well as the policy on employment in each sector and the national economy up to 2020.

2. THEORETICAL BASES AND METHODS

2.1 Theoretical bases

Economic growth has been much discussed by researchers. According to Phan (2006), economic growth is an increase in overall output of an economy in a given period. Thus, it can be understood as an increase in GDP or GNP or personal income in a given period. Economic growth reflects a quantitative change in an economy.

Labor is a special commodity that can be traded in the market like other services (Phan, 2006). Employees, another concept relating to labor, are defined as "people

from 15 years old and above, capable of working, working under labor contracts, receiving salaries and subject to the management of the employers" (Vietnam's National Assembly, 2012).

Employment is considered as an important macroeconomic category. According to Vietnam's Labor Code, "employments are activities that generate incomes that the law does not prohibit." (Vietnam's National Assembly, 2012) Employment is measured by such indexes as employment or unemployment rates, structure of jobs by industries, economic sectors, or demographic features, etc. Employment can be examined from extensive and intensive economic growth. Regarding extensive growth, employment is more important than the quality of the labor force, and economic development is determined by ways of making use of idle labor while the intensive growth depends on education, R&D, IT and innovation. Thus, to promote intensive economic growth, it is essential to enhance public education level and quality of workforce, etc.

Various models are used to determine the relationship between economic growth and employment. Kapos (2005) and Dopke (2001) find a positive relationship between them in which economic growth can create new jobs at a level varying over periods and countries. This reflects different reactions by labor markets to the economic growth Schmid (2008) suggests that both extensive and intensive growth models are important to the possibility of job creation. Thus, economic growth as a reaction to increases in aggregate demand can be achieved in different situations, such as increases in inputs, productivity of factors or both of them.

Kapos (2005) finds the relation between growth rates and employment in many countries and estimates employment elasticity, thereby predicting employment status in these countries. In addition, Herman (2011) examines the effect of economic growth on employment and income in EU countries between 2000 and 2010. The main findings of this paper show "the existence of a low employment elasticity of economic growth in EU, but this has significant differences from one country to another."

However, concerning economic theories on the relationship between economic growth and labor, most economists agree that four important factors affecting economic growth are capital (K), labor (L), natural resource (R) and technology (T). According to Đinh *et al.* (2008), the relationship can be generalized through the following production function.

$$Y = F (K, L, R, T) \tag{1}$$

The factors K and L can be directly measured and the factor R is considered as a supplement to the accumulated capital (K). Thus, the production function can be rewritten as Y = F (K, L).

In this paper, production function is used to analyze the relationship between economic growth and employment in Vietnam as well as predict trend of job creation in the next period.

2.2 Research Methods

Approach: As the most suitable functional form for analysis of the origin of growth, Cobb-Douglas production function is used by most researchers to examine the relationship between economic growth and employment, which is performed as follows:

$$Y = AL^\alpha K^\beta \tag{2}$$

Where:

A: total factor productivity

L: labor input

α: elasticity of output with respect to labor

β: elasticity of output with respect to capital

Sum of two elasticity coefficients ($\alpha + \beta$) shows returns to scale of the production function, if:

($\alpha + \beta$) > 1, returns to scale are increasing

($\alpha + \beta$) < 1, returns to scale are decreasing

And if ($\alpha + \beta$) = 1, returns to scale are constant.

From the production function (2), the transcendental logarithmic function is generalized as follows:

$$\ln Y = \ln A + \alpha L + \beta K \tag{3}$$

$$\left(\frac{\partial Y}{Y}\right) = (\alpha)\left(\frac{\partial L}{L}\right) + (\beta)\left(\frac{\partial K}{K}\right) + \left(\frac{\partial A}{A}\right) \tag{4}$$

The function (4) is used to determine the output elasticity of labor in respond to different scenarios of GDP growth rate and indicate the relationship between the amount of employment in prediction and the amount of employment in reality.

Data: The paper uses data on growth and employment in Vietnam during the period 1991–2012 collected by the General Statistics Office of Vietnam (GSO).

3. RESEARCH RESULTS AND DISCUSSION

3.1 Overview of Sample

From 1991 to 2012 statistics show that the highest GDP of Vietnam is VND2,412,778 billion, the lowest is VND548,063 billion and the average is VND1,322,104.5 billion (according to 2010 constant price). Contribution from agriculture to the GDP reaches the highest value of VND435,414 billion, the lowest of VND168,449 billion and the average of VND285,703.6 billion; whereas contribution from manufacturing sector to the GDP reaches the highest, lowest and average values of VND930,593 billion, VND140,448 billion and VND479,412 billion respectively.

During the period of 1991–2012, the biggest number of job created was 51.699 million and 30.135 million was the lowest, and the average is 39.580 million jobs per year. These figures in agriculture sector are 25.045 million, 21.907 million and 23.967 million respectively; in manufacturing sector: 10.955 million, 3.390 million and 6.318 million; and in service sectors 16.256 million, 4.837 million, and 9.294 million respectively. The output and employment statistics of the economy and sectors are shown in Table 1.

Table 1. Gross Domestic Income, Capital and Labor by Sector in 1991 - 2012

Year	GDP (VND billion) (in 2010 constant price)				Capital (VND billion) (in 2010 constant price)				Labor (thousand people)			
	Total	Agri.	Manu.	Service	Total	Agri.	Manu.	Service	Total	Agri.	Manu.	Service
1991	548,063	168,449	140,448	239,166	59,354	9,319	26,116	23,920	30,135	21,907	3,390	4,837
1992	595,743	180,036	158,409	257,299	90,828	11,535	44,415	34,878	30,856	22,340	3,474	5,043
1993	643,868	185,939	178,407	279,522	123,891	11,026	68,511	44,353	31,579	22,756	3,562	5,262
1994	700,745	192,199	202,294	306,252	122,691	11,533	47,850	63,309	32,303	23,156	3,655	5,493
1995	767,599	201,427	229,808	336,364	137,284	18,219	46,777	72,288	33,031	23,535	3,756	5,740
1996	839,293	216,289	263,037	365,966	157,722	20,571	56,757	80,394	33,761	23,874	3,888	5,999
1997	907,710	219,388	296,235	392,087	188,056	24,640	63,689	99,726	34,493	24,196	4,021	6,276
1998	960,038	227,124	320,923	411,991	193,034	24,671	68,668	99,695	35,233	24,504	4,157	6,572
1999	1,005,866	239,013	345,584	421,270	211,927	29,980	78,375	103,572	35,976	24,792	4,300	6,884
2000	1,074,137	250,089	380,383	443,666	234,808	33,822	86,366	114,620	36,702	25,045	4,445	7,212

2001	1,148,198	257,550	419,919	470,728	274,633	38,852	97,236	138,545	38,180	24,244	5,383	8,552
2002	1,229,493	268,281	459,715	501,496	314,251	27,540	133,044	153,667	39,276	24,312	6,048	8,916
2003	1,319,748	277,996	507,890	533,862	354,918	29,997	146,562	178,359	40,404	24,323	6,667	9,414
2004	1,422,555	290,124	559,787	572,645	401,762	33,546	163,846	204,370	41,579	24,407	7,193	9,979
2005	1,588,646	342,811	605,516	640,319	447,135	31,320	195,730	220,085	42,775	23,563	7,524	11,688
2006	1,699,501	355,831	649,657	694,013	516,382	39,077	221,946	255,360	43,980	24,365	8,488	11,127
2007	1,820,667	369,905	697,499	753,263	656,057	43,994	284,727	327,336	45,208	23,932	8,565	12,711
2008	1,923,749	387,262	726,329	810,158	707,225	50,325	294,844	362,055	46,461	24,303	8,986	13,172
2009	2,027,591	394,658	769,733	863,200	762,843	47,401	319,516	395,926	47,744	24,606	9,562	13,576
2010	2,157,828	407,647	824,904	925,277	830,278	51,062	355,442	423,774	49,049	24,279	10,277	14,493
2011	2,292,483	424,047	879,994	988,442	770,087	46,821	330,882	392,384	50,352	24,363	10,719	15,270
2012	2,412,778	435,414	930,593	1,046,771	785,755	40,781	343,159	401,815	51,699	24,488	10,955	16,256

Source Authors' calculations from data of GSO (2013b)

3.2 Results from the Model of Relationship between Employment and Economic Growth

The results show that the average growth rate was 7.3%/year in 1991 -2012 period, - or 9.5% in manufacturing sector; 7% in service sector and 4 7% in agricultural sectors, to be more precise. However, the growth rate tended to decrease from approximately 8% in the early years of this period to 5.8% in the last five years. The growth rate was rather stable in service sector and fell remarkably in manufacturing and agricultural sectors (to 5.9% and 3.3% per year respectively).

It is worth noting that the labor market experienced only slight changes in this period when job creation increased by 2% to 4 % per year (this increase was 6% and 0.5% in manufacturing and service sector respectively). Moreover, the growth of employment in the agricultural sector shows a downward tendency and even a negative growth rate at times. This shows that manufacturing and service can attract labor from the agricultural sector according to the Lewis theory of economic growth (Todaro & Smith, 2009).

The increase in labor's income is at an average rate of 4.6%/year and has a tendency to fall in this period. In the last five years this rate is 3%/year, and in 2012 it raises by only 2% compared to 2011.

The analysis of the result indicates a highly positive correlation between economic growth and income (R=0.97), which explains that economic growth helps improve the workers' income. The correlation, however, between economic growth and employment is not obvious in recent years particularly, reflecting the quality of growth of the economy as a whole. The factor capital/technology (not labor) is considered to be a strong driving force for economic development. The results of this analysis are presented in Table 2.

Table 2. Estimate Results

Variable	Symbol	Regression coefficient	Statistical value	
			t	Sig.
Model 1: Production function Y = 0.001132*K$^{0.22}$*L$^{1.71}$				
Obs. n=22; R^2 Adj= 0 99; Thống kê F-statistics =2354.61; Sig. F=0.000				
Total factor productivity	TFP	0.001132	-3.7235	.001
Output elasticity of labor	α	1.71	7 3952	.000
Output elasticity of capital	β	0.22	4 3743	.000
Model 2: Agricultural production function Y = 1.89*10^{20}*K$^{0.75}$*L$^{-4.19}$				
Obs. n=22, R^2 Adj= 0.87; F-statistics =71 11, Sig. F =0.000				
Total factor productivity	TFP	1.89*10^{20}	3.7920	.000
Output elasticity of labor	A	-4.19	-3.216	.001
Output elasticity of capital	B	0.75	9.0532	.000
Model 3: Manufacturing production function Y = 24.33*K$^{0.43}$*L$^{0.55}$				
Obs. n=22; R^2 Adj= 0 94; F-statistics =174 56; Sig.F=0.000				
Total factor productivity	TFP	24.33	3.0434	.007
Output elasticity of labor	α	0.55	1.5245	.144
Output elasticity of capital	β	0.43	2.2809	.034
Model 4: Service production function Y = 92.74*K$^{0.22}$*L$^{0.66}$				
Obs. n=22; R^2 Adj= 0.99; F-statistics=1026.21; Sig F=0.000				
Total factor productivity	TFP	92.74	11.3991	.000
Output elasticity of labor	α	0.66	6.4192	.001
Output elasticity of capital	β	0.22	4.5559	.000

Source: Authors' calculation using Data Analysis in MS Excel 2010.

The results of the analysis of regression models show that F-statistic and t-statistic indicate an appropriate presence of input data.

Regarding the national economy, α equaling 0.22 implies that a 1% increase in capital makes GDP rise by 0.22%; and β equaling 1.71 implies that a 1% increase in labor results in a growth rate of 1.71% The sum of (α + β) > 1 explains that production function exhibits increasing returns to scale. The economic growth rate is higher than that of both labor and capital.

In agriculture, α equaling 0.75 implies that a 1% increase in capital makes agricultural output rise by 0.75%; and β equaling -4.19 implies a 1% increase in labor makes the output fall by 4.19%. This is totally appropriate to the law of diminishing marginal product. The sum of (α + β) < 1 indicates decreasing returns to scale. The growth of agricultural output is lower than that of labor and capital.

In manufacturing sector, α equaling 0.43 implies that a 1% increase in capital makes industrial output rise by 0.43%; and β equaling 0.55 implies a 1% increase in labor results in an increase of 0.55% in industrial output. The β value, however, is not statistically significant (sig. = 0.144 >5%), implying that labor does not affect the economic growth in the surveyed period while TFP plays a more important role.

In service sector, α equals 0.22, showing an increase of 1% in capital leads to a growth of 0.22% in output while β value of 0.66 shows that an increase of 1% in labor makes output rise by 0.66%; (α + β = 0.88) < 1 indicates decreasing returns to scale. The growth rate of the service sector is lower than that of labor and capital.

3.3. Prediction of employment in 2013–2020

According to the socioeconomic development strategy adopted by the Vietnamese Government for the period 2010–2020, the economic growth rate is expected to reach 7-8%/year (Government, 2011). The above econometric models can help us make predictions of job creation in the coming period.

In reality, the Vietnamese growth rate in 2012 and 2013 is relatively low, below 6% while the government strategy aims at a growth rate of 7% or 8%; therefore, to be consistent with the present situation, the paper suggests one more scenario for the period 2013–2020 with the growth rate of 5% and 6%. The prediction of job creation in the next period is presented in Table 3 below:

Table 3. Scenarios of Growth and Employment in Vietnam during 2013–2020

Year	Growth rate of 5%		Growth rate of 6%		Growth rate of 7%	
	GDP, VND billion (2010 price)	Employment (thousand people)	GDP, VND billion (2010 price)	Employment (thousand people)	GDP, VND billion (2010 price)	Employment (thousand people)
2012	2,412,778	51,796	2,412,778	51,796	2,412,778	51,796
2013	2,533,417	52,652	2,557,545	52,945	2,581,672	53,238
2014	2,660,088	53,522	2,710,997	54,120	2,762,390	54,720
2015	2,793,092	54,407	2,873,657	55,322	2,955,757	56,243
2016	2,932,747	55,306	3,046,077	56,549	3,162,660	57,809
2017	3,079,384	56,220	3,228,841	57,804	3,384,046	59,418
2018	3,233,353	57,149	3,422,572	59,087	3,620,929	61,072
2019	3,395,021	58,094	3,627,926	60,398	3,874,394	62,772
2020	3,564,772	59,054	3,845,602	61,739	4,145,602	64,519

Source Authors' calculations from dataset of GSO

According to constructed scenarios, 54,407 million new jobs are created by 2015 and 59,054 million created by 2020 if the economic growth rate is 5%. Meanwhile, 55,322 million and 61,739 million jobs will be created by 2015 and 2020 respectively with an assumption that the average economic growth rate will be 6% per year. With a rate of 7%, the number of newly created jobs will be 57,809 million by 2015 and 64,519 million by 2020.

4. CONCLUSION AND RECOMMENDATIONS

The research results show that there really exists a relationship between employment and economic growth, which allows a prediction about jobs created for 54,407 and 59,054 million people by 2015 and 2020 respectively if the average growth rate is 5%/year. These figures will be 55,322 and 56,243 million jobs by 2015, and 61,739 and 64,519 million jobs by 2020 respectively for the growth rate of 6% and 7%.

Perhaps, a scenario for the economy with the average growth rate of 6-7% is feasible for present economic situation. Through the aforementioned results, authorities should consider the following issues to ensure high employment rates in the future:

First, policies on macroeconomic stability that Government is implementing should be consistent in order to promote economic growth. Macroeconomic stability is an

essential precondition for ensuring employment and income for Vietnamese laborers in the future. In the period 2013–2020, hence, it is necessary to focus on such specific measures as: Maintaining steady growth rate, implementing strict financial policy, reducing budget expenditures, orienting investment toward national key projects; adopting flexible monetary policies, controlling growth of credit and reducing inflation; supporting the frozen real estate market, and helping companies deal with difficulties, etc.

Second, there should be new policies encouraging investment. Economic growth is considered as a basis for improving employment status and increasing income. In order to maintain a high growth rate until 2020, it is essential to focus on measures to mobilize all possible resources, such as financial resource from economic sectors as well as natural resources, etc.

Third, policies on employment support need to be implemented more effectively due to the fact that Vietnam is entering a period of demographic bonus and about one million people reach working age annually. These policies should focus on extending production in manufacturing and construction sector, especially small scale and labor-intensive industries, encouraging development of private sector, and supporting self-employment in rural areas. Additionally, enhancing performance of the employment centers is also a solution to reduce unemployment rate.

Finally, vocational training courses should be promoted to improve labor productivity. Despite remarkable achievements in 1991–2012, Vietnam only followed an extensive growth model that proved to be defective and inappropriate to new economic conditions. In 2013–2020, however, Vietnam's Government adopts an intensive growth model. In the next period, vocational training should be promoted in response to changes in technology, organization, or management, etc. Training process could be implemented by companies or local training centers.

This paper only examined national economy and basic economic sectors due to difficulties in collecting data on employment status and economic growth in Vietnam. Thus, the research could not examine data of specific provinces and economic regions. Future researches may have to pay attention to this aspect■

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