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The impact of tax policy on social development in Vietnam

Nga Phan Thi Hang[a], My-Linh Thi Nguyen[a], Hoai Thu Ho[a] and Toan Ngoc Bui[b*]

[a]*University of Finance – Marketing (UFM), Vietnam*
[b]*Industrial University of Ho Chi Minh City (IUH), Vietnam*

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A B S T R A C T

The objective of this paper was to examine the impact of tax policy on social development in Vietnam. In particular, tax policy was measured through the ratio of the government's tax revenue to gross domestic product - GDP (TAX), and social development is measured through unemployment (UNE). The research data were collected from the General Department of Taxation of Vietnam and the World Bank. We used the Autoregressive Distributed Lag (ARDL) Model to analyze time series data in the period 1990-2017. The paper achieved great success in finding the first empirical evidence of the negative impact of tax policy on unemployment in Vietnam in the long term. In addition, we found a statistically significant impact of domestic savings and domestic investment on unemployment in the both short and long term. This shows that tax policy plays an important role for unemployment as well as social development in Vietnam.

1. Introduction

The tax policy of a country is expressed by the country's tax system with the objective of collecting the state budget (NSNN) and managing the macro-economy, and the tool to implement the above objective is shown in each specific tax type. Each type of taxes, apart from the role of mobilizing financial resources for the state budget, also has different roles to set up a tax system that fulfills the objectives of the State that the country pursues depending on each economic period. Specifically, the formulation and implementation of tax policy must ensure the objectives: (1) Ensure the reasonable promotion of economic growth; (2) Create adequate jobs for laborers; (3) Stabilize prices, currencies, and fight against inflation; (4) Implement the balance in the international balance of payments. Accordingly, one of the four important objectives of tax policies is to create adequate jobs for laborers. Human beings are both the objectives and the driving force for socio-economic development. At any stage, humans are always at the center of development (Jafari Samimi & Hassanzadeh Jazdany, 2001). Therefore, Marx once said that people are the most basic productive force of the society. People with labor, quality, ability, capability, and active participation in the labor process are the decisive factors for the developmental speed of technical progress. For this reason, employment plays an important role in the national economy, which is the driving force for socio-economic development. In theory, the goods of labor power are constituted in the value of goods and services and are determined by the relationship between supply and demand for labor power through the prices of goods and services in the market. If the labor content in a commodity product is constant, the pay rates will be paid based on the price and quantity of goods produced. When taxes are levied on commodity prices, the income of producers decreases and the pay rates of laborers decline. This will affect the relationship between supply and demand for labor power in the labor market. In reality, the pay is constituted in the cost of goods, depending on each production activity where the average pay rate of each type of labor is also established in the market. Therefore, enterprises cannot lower the pay of laborers below the society's average pay rate; in contrast, enterprises must plan new production and business schemes. Moreover, this will reduce potentials for new investments, narrow production and lose laborers' jobs.

* Corresponding author.
E-mail address: buingoctoan@iuh.edu.vn (T.N. Bui)

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Taxation and labor supply are two of the most important economic issues in the public sector. Taxation is known to be an effective means to implement economic policies aimed at directing the economy towards the macroeconomic objectives such as economic stabilization, employment, economic growth and social welfare (Mojtahed and Ahmadian, 2007). Therefore, it is important to consider the impact of taxation on employment. Taxation has an impact on the return on investment in physical and human capital. As a result, tax changes have an impact on economic growth and employment (Jafari and Hasanzadeh, 2001; Nazari & Goharian, 2001). Expansionary fiscal policy of tax cuts causes an increase in market demand and prices, thereby leading to an increase in wages and employment (Azimi, 2000). How has Vietnam's tax policy through four times of reform since 1990 affected the employment of workers and the unemployment rate in the economy? This is an issue that needs to be studied and evaluated to examine the relevance of the current tax policy and discover how it should be revised in the new period to achieve the goal of creating more jobs for laborer, which contributes to the decrease in the unemployment rate in the whole society. Being aware of this importance, the researchers conducted this paper to answer the above questions and contribute to perfecting tax policy in the new development period.

2. Related previous empirical studies

Taxes are one of the Government's main sources of revenue and are an important theoretical foundation of the economy. In addition, tax policy is one of the most effective policies for the public sector (Keane, 2011). A fair tax policy can help the Government solve many economic and social problems such as budget deficits, unemployment reduction, etc. (Rangriz & Khorshidi, 2011). Tax can be viewed as economic infrastructure that supports sustainable development and social justice through income redistribution and resource allocation (Eissa & Liebman, 1996). According to the concept of IMF, tax is a compulsory, non-compensatory, and non-refundable sum of money, collected by the Government for general purposes (Zanjani & Dehani, 2010). In reality, the tax system is influenced by the political system, the economic situation, and the Government's management practices. The empirical results from most of the developed countries show that tax revenue is the most important source of income and taxation plays an important role in the implementation of economic policies. In terms of employment, improving the level of employment can only be achieved through precise economic management and compliance with the operating principles of the economy. The most important task of the Government is to establish appropriate policies that are typically characterized by tax policies and to make an effort to keep the economy in balance (Kleven & Kreiner, 2004). Taxes are not only a source of revenue for public expenditure, but taxes also change the directions of investment and production, thereby affecting employment in the economy. Thus, it is clear that labor market is affected by the government's economic policies (monetary and fiscal). Therefore, the role of the Government in the labor market when using the tax policies, expenditures and resource allocation is very significant (Blundell, 1995). Taxation creates two effects: substitution effect and income effect. The substitution effect is that when the tax increases reduce the amount of available wages, the opportunity cost of leisure decreases, and then people tend to replace employment with leisure. The substitution effect tends to reduce labor supply. However, leisure is also a commodity like other goods, with choices in consumption. With other constant factors, when the income declines, the laborer must cut leisure time. When the leisure time decreases, the number of working hours increases. Hence, the income effect tends to increase employment. Therefore, the net effect of taxes on employment may be negative or positive, depending on the intensity of substitution and income effects (Pazhuyan, 2001).

The studies on the impact of taxes on employment or unemployment in the world are quite limited. The reason is that the impact of tax changes on the unemployment rate of a country is often indirect through a number of different transmission channels. Typically, Seward (2008) studied the effect of taxes on employment and economic growth in developed countries during the years 1965-1995, using the panel data model. The results show that the 10% increase in income tax causes the 5.3% increase in unemployment and the 2.1% reduction in growth. Thereafter, Thompson and Rohlin (2012) studied the effect of sales tax on employment using the panel data method during the period 2004-2009 in 16 states of the US and they have shown that taxes have a negative impact on employment. In a study undertaken in France, Bahaghel et al. (2012) studied the effect of tax reduction on employment and urban development in the period of 1995-2009 using the 2SLS method. The results obtained from this study show that there is no statistically significant relationship between tax reduction, employment and urban development in France. This result is the same as the result in Lorenceau's study (2010).

The modern financial theory focuses on the impact of corporate income taxes on the use of capital by enterprises. Thereafter, there have been many studies exploring the impact of changes in the use of capital on unemployment. Zellner and Ngoie (2015) studied how corporate income taxes changed in the United States. This study does not directly examine the impact of corporate income taxes on unemployment, but consider how changes in GDP will be related to unemployment, thereby indirectly inferring the impact of taxation on unemployment. The study used Marshall's macroeconomic model to predict that permanent tax cuts will boost GDP growth. The researchers have argued that the 5% reduction in personal and corporate income taxes leads to the 3% increase in GDP. Regarding the studies on personal income taxes, Mertens and Ravn (2013) found that the 1% reduction in personal income taxes resulted in the 1.5% increase in GDP and the 0.5% decrease in unemployment within a year; meanwhile, Zidar's study (2018) estimated that the 1% reduction in personal income taxes caused the 3.4% increase in employment within two years.

Based on the limited number of studies in the world on the direct impact of taxation on employment or unemployment, this paper is expected to contribute to empirical research on this topic.

3. Research methodology

3.1 Suggested research model

Based on the results of previous studies and the status quo in Vietnam, the researchers found that tax policy has played an important role for social development. In particular, tax policy is reflected through the government's ratio of tax revenue to gross domestic product (GDP), and social development is measured through unemployment, the percentage of jobless people in the labor force. The researchers used the ARDL model for this paper with the following equations:

+ *Long-term impact:*

$$UNE_t = \beta_0 + \beta_1 TAX_t + \beta_2 SAV_t + \beta_3 OP_t + \beta_4 GOV_t + \beta_5 CAP_t + v_t$$

+ *Short-term impact:*

$$\Delta UNE_t = \alpha_0 + \sum_{j=1}^{k} \lambda_1 \Delta UNE_{t-j} + \sum_{j=0}^{k} \lambda_2 \Delta TAX_{t-j} + \sum_{j=0}^{k} \lambda_3 \Delta SAV_{t-j} + \sum_{j=0}^{k} \lambda_4 \Delta OP_{t-j}$$

$$+ \sum_{j=0}^{k} \lambda_5 \Delta GOV_{t-j} + \sum_{j=0}^{k} \lambda_6 \Delta CAP_{t-j} + \phi ECM_{t-1} + \varepsilon_t$$

where:

+ *Dependent variable:* unemployment (UNE).

+ *Independent variable:* tax revenue (TAX).

+ *Control variable:* domestic savings (SAV), trade openness (OP), government expenditure (GOV), and domestic investment (CAP).

+ *Error correction mode* (ECM).

Table 1
Variables used in the research model

Variable name	Measurement	Source	References
	Dependent variable		
Unemployment (UNE)	The percentage of jobless people in the labor force	World Bank	Rangriz and Khorshidi (2011), Seward (2008), Zellner and Ngoie (2015), Mertens and Ravn (2013)
	Independent variable		
Tax revenue (TAX)	The ratio of the government's total tax revenue to gross domestic product	General Department of Taxation, World Bank	Seward (2008), Thompson and Rohlin (2012), Mertens and Ravn (2013), Zidar (2018)
Control variable			
Domestic savings (SAV)	Gross domestic savings to gross domestic product	World Bank	Nantob, N.Y. (2014)
Trade openness (OP)	The sum of exports and imports of goods and services to gross domestic product	World Bank	Najid Ahmad, Arslan Ahmad, and Kausar Yasmeen (2013)
Government expenditure (GOV)	Total government expenditure to gross domestic product	World Bank	Macek, R.(2014), Macek, R. and Janků, J. (2015)
Domestic investment (CAP)	Gross domestic investment to gross domestic product	World Bank	Macek, R. and Janků, J. (2015)

Source: The authors' synthesis

3.1 Research data

The paper uses time series data on an annual basis in the period 1990-2017. The data on tax revenue were collected from the General Department of Taxation of Vietnam. The data on unemployment, domestic savings, trade openness, government expenditure and domestic investment were collected from the World Bank.

3.2 Analysis methodology

The paper tests the impact of tax policy on social development in Vietnam, particularly unemployment, according to autoregressive distributed lag (ARDL) model. With the characteristics of Vietnam and the relatively short data series, the study uses the ARDL model to ensure more reliability than other models (according to Pahlavani et al. (2005), the ARDL model is appropriate to the studies with short data series, even the studies with the data series of about 30 observations). The characteristics of the data through the stationarity test are appropriate to use the ARDL model. Simultaneously, the ARDL model allows examining the impact of tax policy on unemployment in Vietnam in the both short and long term. The main contents of the analysis process include stationarity test, cointegration test, and regression analysis according to the ARDL model.

4. Research results

4.1 Stationarity test

The paper tests the stationarity of data series through the stationarity test proposed by Dickey and Fuller (1979), with the hypothesis H_0: the data series is not stationary.

Table 2
Stationarity test

Variable	Original data series I(0)	First-order differential data series I(1)
Unemployment (UNE)	0.0120**	0.0000***
Tax revenue (TAX)	0.1325	0.0000***
Domestic savings (SAV)	0.0000***	0.0007***
Trade openness (OP)	0.9847	0.0000***
Government expenditure (GOV)	0.0000***	0.0000***
Domestic investment (CAP)	0.0343**	0.0039***

*Note: ** and *** indicate significance at the 5% and 1% levels, respectively.* Source: The authors' results of analysis

Table 2 shows that the data series of unemployment, domestic savings, government expenditure and domestic investment stopped at the original data series at the 1% and 5% significance levels. At the first-order differential data series, the data series stopped at the 1% significance level. Therefore, these data series are suitable for analysis in accordance with the ARDL model because Pesaran et al. (2001) have argued that if the data series do not stop at the same level, applying the ARDL model is the most appropriate.

4.2 Cointegration test

The paper identified the lag of variables in the ARDL model through the Akaike Information Criterion (AIC). Next, the paper used the bound test method to test the cointegration between the data series, with the hypothesis H_0: There is no cointegration relationship between the data series.

Table 3
Cointegration test

	10%		5%		1%		p-value	
	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
F	2.653	4.023	3.277	4.872	4.863	7.019	0.002***	0.015**

F = 6.485

*Note: ** and *** indicate significance at the 5% and 1% levels, respectively.*

Source: The authors' results of analysis

The test results show that F is greater than the upper-bound critical value (at the 5% significance level) proposed by Pesaran et al. (2001). Therefore, there is a cointegration relationship between the data series at the 5% significance level.

4.3 Results of the research model

The study tests the impact of tax policy on unemployment in Vietnam according to the ARDL model with the following results:

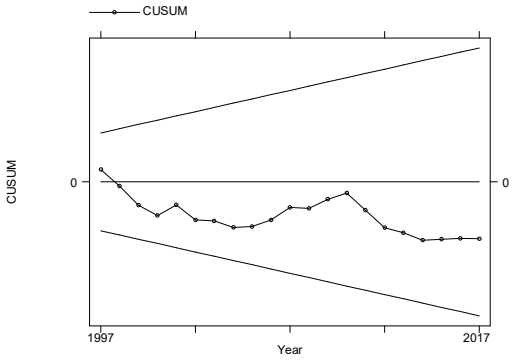
Table 4
The regression results of the ARDL model

Variable	Regression coefficient	Significance level
Long-term impact		
TAX	-0.0607	0,042**
SAV	-0.0268	0,069*
OP	0.0025	0,200
CAP	0.0704	0,000***
GOV	-0.0511	0,469
Short-term impact		
ΔTAX	-0.0339	0,304
ΔSAV	0.0550	0,098*
ΔOP	0.0030	0,195
ΔCAP	0.0831	0,000***
ΔGOV	-0.0604	0,484
ECM(-1)	-1.1807	0,000***
Constant	2.1844	0,080*
R-squared	69.51%	
Prob > F	0.0019***	
White's test	Prob > chi2 = 0.4093	
Breusch-Godfrey LM test	Prob > chi2 = 0.3696	

*Note: *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.*

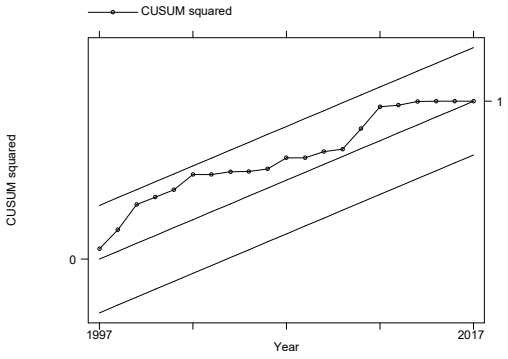
Source: The authors' results of analysis

Plot of the cumulative sum of recursive residuals (CUSUM)



The standard range at the 5% significance level

Plot of the cumulative sum of squares of recursive residuals (CUSUM squared)



The standard range at the 5% significance level

Fig. 1. Stability test of the model

Source: The authors' results of analysis

Table 4 shows that the model is statistically significant at the 1% significance level. White test shows that the research model does not have homoscedasticity. Breusch-Godfrey LM test shows that the research model does not have autocorrelation. Simultaneously, the stability test results of the model show that the cumulative sum of recursive residuals and the cumulative sum of squares of recursive residuals are within the standard range at the 5% significance level (Figure 1). Therefore, the research model has stability and appropriateness. The results of the short-term and long-term impacts are as follows:

- In the short term, domestic savings and domestic investment have a positive impact on unemployment with the regression coefficients of 0.0550 and 0.0831 respectively at the significance levels of 10% and 1% respectively.
- In the long term: tax revenue has a negative impact (-0.0607) on unemployment at the 5% significance level. In addition, domestic savings have a negative impact (-0.0268) on unemployment at the 10% significance level and domestic investment has a positive impact (0.0704) on unemployment at the 1% significance level.
- At the 1% significance level, the short-term adjustment coefficient (ECM) is -1.1807. Accordingly, when unemployment surpasses, the negative adjustment coefficient will pull the unemployment rate towards the balance in the long term.

4.4 Discussion of research results

The research results found the negative impact of tax policy on unemployment in the long term. As tax revenue increases, the Government increases consumption expenditure, increasing the goods and services of the public sector (provided free of charge). Due to the positive external impact, the goods and services provided by the Government have helped increase productivity in the private sector, stimulating investment, thereby increasing the demand for human resources. In addition, tax revenue is also used to build infrastructure in order to create a good investment environment, thereby, attracting investors to take part in the market, expanding the scale of production, increasing the demand for human resources, leading to the decrease in the unemployment rate. In fact, according to the Press Release of the official results of the 2017 Economic Census, the corporate sector has the highest growth rate in terms of the quantity of companies and employees, with nearly 517.9 thousand existing businesses, increasing 176.3 thousand enterprises, equivalent to an increase of 51.6% compared to 2012. The corporate sector attracted more than 14 million laborer, increasing by 28.2%, equivalent to 3.1 million laborers compared to 2012.

Furthermore, the research results found the positive impact of savings on unemployment in the short term and the opposite result in the long term. This result is due to the increase in savings that will reduce the money supply in circulation, thereby reducing private investment in the economy. Therefore, in the short term, when savings increase, private investment will decrease and unemployment will increase. However, in the long term, accumulated savings will be put into circulation and investment, thus helping to increase employment or reduce unemployment in the economy.

Finally, the research paper found the positive impact of the Government's domestic investment on unemployment in Vietnam in the both short and long term, or in other words, the increase in domestic investment will increase the unemployment rate. This result shows that the Government's domestic investment in the research period is still scattered and inefficient (reflected by the relatively high ICOR: 4.98 in the period 1991-2009 and 5.69 in the period 2010-2017). Moreover, the Government's investment has exceeded the private sector investment by raising taxes and domestic loans, leading to a scarcity of the private sector investment, thereby increasing the unemployment rate. However, domestic investment is of long-term characteristics; hence, the positive impact of domestic investment on unemployment will persist in the long term.

5. Conclusion

The paper tests the impact of tax policy on unemployment in Vietnam. With the use of the ARDL model, the research results show that tax policy has a negative impact on unemployment in the long term. Additionally, domestic savings and domestic investment also affect unemployment in the both short and long term. This shows that tax policy has an important role for unemployment as well as employment in Vietnam. The research results are the basis for helping policy makers, regulators, as well as researchers clearly see the impact of tax policy on unemployment in Vietnam. The result provides empirical evidence in Vietnam, thus bringing high practical value. With this result, the research paper has achieved its objective. However, the study still has some limitations; for example, it has not examined some other indicators that also reflect tax policy and may affect unemployment in Vietnam. This is the approach for further studies.

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