

Business Capital Funding Through the Financial Sector to Reduce Unemployment in Indonesia

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Abstract

This research aimed to study the role of the financial sector and foreign investment in increasing domestic production output. Where the increase in production output will increase the factors of production, one of which is labor. The data used in this study are annual time series data from the 2004 to 2021, and this study employed the Error Correction Model (ECM) approach to estimate the short-term effect and OLS to determine the long-term effect. The results showed that funding growth through the financial sector to the industrial sector in Indonesia has grown consistently since 2004 which has continued to encourage improved economic performance after the 1998 crisis. There is also a relationship between financial variables and fiscal policy on unemployment in both the short and long term. There are several ways to deal with unemployment both in the long term and in the short term, such as when an economic slowdown occurs. By increasing FDI, bank credit and funding in the capital market, the private sector can continue to expand its business. This private expansion phase will increase the output of goods or services. With the increase in production output, employment will continue to be positive.

Keywords: Unemployment, investment, fiscal policy, financial sector.

JEL Classification: B22, B26, C61, C87, E24, G28, G38

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1. Introduction

Funding through bank credit is the most frequently chosen funding option and not even a few producers choose bank credit as the main funding, on the other hand the rapid growth in bank loans can exacerbate moral hazard and adverse selection problems that undermine the stability of the banking system, increasing the possibility banking crisis (Fielding & Rewilak, 2015). Producers basically have other funding options to meet their funding needs for expansion through funding in the capital market either through equity-based funding or funding through debt securities (Coşkun et al., 2017). Funding that goes to corporations is generally used for further

business development which in the long term can absorb labor due to an increase in production volume.

The increase in production volume is expected to encourage economic performance to reach full-employment. So that it can overcome unemployment which is a problem in the economy and inhibits the increase in public consumption and investment. This will provide income for the state through taxes, and of course with the increase in production volume it can attract the attention of foreign investors to invest in the country. The entry of foreign investors can be utilized by domestic producers to collaborate either through direct investment or investment

through companies that already exist in the country (Fon et al., 2021). Foreign Direct Investment (Foreign Direct Investment) is generally considered as an instrument of how to stimulate the economic growth of any country, for that the governments of countries are trying to encourage the entry of foreign direct investment by various steps (Szkorupová, 2015). The impact of FDI on unemployment and wages has become a topic of interest to workers and policy makers in developed countries, prompting the attention of economists and the emergence of a growing literature (Le Riche et al., 2021).

By linking funding through the capital market, banking credit and foreign investment, this research can show the performance of the economic sector and its role in employment. The Central Statistics Agency (BPS) recorded the number of unemployment in Indonesia is at 9.1 million people in August 2021. This number increased from 8.7 million people in February 2021, but decreased compared to 9.8 million people in the same period last year. Experts have explored this aggregate relationship using different data and approaches. Where by opening up job opportunities through increasing productivity, it can increase labor force participation in finding full-time work. Bearing in mind, it is widely understood that an adverse shock in the unemployment rate can trigger two opposite phenomena in relation to the labor force participation rate: on the one hand, people who wish to have a job may abandon their search due to a lack of job offers (disheartened), worker effect on the other hand, previously unemployed persons may decide to seek work if they are in a household affected by unemployment (additional worker effect). The third possibility is that, in the end, there is no effect because these two effects cancel each other out. Thus, a third hypothesis emerges, namely the unemployment invariant hypothesis which states that there is no relationship between the unemployment rate and the labor force participation rate (Congregado et al., 2021).

Harrod-Domar growth theory was developed by two economists after Keynes, namely Evsey Domar and R.F. Harrod or this theory is an extension of Keynes's analysis of national

economic activity and labor problems. Keynes's analysis is considered incomplete because it does not discuss long-term economic problems, while Harrod-Domar's theory analyzes the conditions necessary for the economy to develop in the long term. This theory shows the conditions needed for the economy to grow and develop steadily (steady growth) (Jhiang, 2012). Harrod and Domar give a key role to investment in the process of economic growth, especially regarding the dual nature of investment. First, investment creates income, and second, investment increases the productive capacity of the economy by increasing the capital stock. The first character can be referred to as the demand impact and the second as the investment supply impact, therefore as long as net investment continues, real income and output will continue to increase which will ultimately reduce unemployment in the long run (Coşkun et al., 2017).

Foreign direct investment (FDI) by multinational companies (MNEs/Multinational Enterprises) is one of the most studied phenomena in international business (Paul & Feliciano-Cestero, 2021). One theory that makes it easier to explain the role of FDI by MNEs is the Schumpeter Theory. This theory was first put forward in his German-language book in 1911 which was later published in English in 1934 under the title *The Theory of Economic Development*. Then Schumpeter described his theory further about the development process and the main factors that determine development in his book published in 1939 under the title *Business Cycle*. One of Schumpeter's important opinions, which is the basis of his development theory, is his belief that the capitalist system is the best system for creating rapid economic development. However, Schumpeter predicted pessimistically that in the long term the capitalist system would stagnate. Economic development is caused by changes, especially in the industrial and trade fields. According to this neo-classical growth theory, the key lies in entrepreneurs, namely people who have the initiative to develop national products. Schumpeter believes that economic development is created by the initiative of innovative entrepreneurs, namely groups of people who

organize goods that are needed by society as a whole. They are the ones who create innovative innovations in the economy. Reforms are created in the form of: expanding new goods, using new ways of production, expanding the market for goods to new areas, developing new sources of raw materials, conducting reorganizations in companies or industries (Schumpeter, 1983).

In this paper, we study the relationship between bank lending, capital market funding and investment on unemployment in Indonesia (Le Riche et al., 2021). The analysis used is the ECM (Error Correction Model) analysis to see the short-term effect and the OLS (Ordinary Least Square) method to see the long-term impact. In conducting this analysis, we contributed to the literature in two ways. First, we provide further empirical evidence on the relationship between venture capital through the capital market, bank credit and investment to real unemployment. Second, by using the ECM model we can estimate the adjustment time for errors that occur due to changes in variables. Several previous literatures have not explained further the relationship between financial variables (bonds, stocks, FDI and credit) to the unemployment rate in the short term. The first chapter in this paper provides a theoretical framework and previous research, in the second chapter this study will explain the research methods used to see the interaction between endogenous and exogenous variables, then in the third chapter this study will explain the results of the research conducted. using the method (described in the second section). The fourth chapter in this research contains

the results and discussion which also includes economic interpretation. And the fifth chapter which is the last chapter will be the part that explains the conclusions of this research.

Then, what are the effective variables used to be a short-term solution when the economy is experiencing a slowdown or even tends to weaken? How to keep the unemployment rate from experiencing a boom when the economy crashes? Some of these questions will be discussed further in this study. With the aim of creating a policy that is able to balance between long-term and short-term policies so as to create a more flexible economic foundation according to the prevailing economic conditions.

2. Research Method

This study uses the Ordinary Least Square (OLS) to determine the long-term model and the Error Correction Model (ECM) to determine the short-term effect of the dependent variable on the independent variable either partially or simultaneously (Yuliadi, 2007). The data used in this study comes from data on credit distribution, capital market issuance, bond issuance, foreign direct investment (Foreign Direct Investment) and unemployment where the observation period is during 2004-2021. The variables used to analyze unemployment (as independent variables) are the variables of credit distribution, stock issuance, bond issuance and FDI. The data was obtained from a number of official websites of domestic institutions such as the Financial Services Authority (OJK), Central Bureau of Statistics (BPS) and the Investment Coordinating Board (BKPM).

Table 1. Operational Definition

Variable	Operational Definition	Source
Unemployment	Unemployment in Indonesia	BPS
Credit	Total value of Banking Credit Distribution	OJK
Bond Emissions	The total value of the issuance of corporate bonds issued by the corporation in the Indonesian Capital Market	OJK
Stock Issue	The total value of the issuance of corporate shares through the mechanism of Initial Public Offering and Right Issue	OJK
FDI	The value of FDI entering Indonesia	BPS and BKPM

The specification of the model in this study follows the model created by (Yuliadi, 2007). Based on the previous model, this research modifies the model by changing the independent variable and making changes to the dependent variable as follows:

Long term model:

$$\text{Unemployment}_t = \beta_0 + \beta_1 \text{Stock}_t + \beta_2 \text{Bond}_t + \beta_3 \text{Credit}_t + \beta_4 \text{FDI}_t + \mu_t \quad (1)$$

Where:

Unemployment: Open Unemployment

Shares: Shares Issued Value in Indonesian Capital Market

Bonds: Bonds Issuance Value in the Indonesian Capital Market

Credit: Value of Banking Loans

$\beta_1, \beta_2, \dots, \beta_6$: regression coefficients,

t : year (2004-2021)

μ : error term

Short term model:

$$\Delta \text{Unemployment} = \beta_0 + \Delta \beta_1 \text{Stock} + \Delta \beta_2 \text{Bond} + \Delta \beta_3 \text{Credit} + \Delta \beta_4 \text{FDI} + \Delta \beta_5 \text{ECT}_{t-1} \quad (2)$$

Where:

$\Delta \text{Unemployment}$: Unemployment Variables in the short term

$\Delta \beta_1$ Stock: Stock Emission Variables in the short term

$\Delta \beta_2$ Bond: Variable Bond Issues in the short term

$\Delta \beta_3$ Credit: Variables of short-term bank lending

$\Delta \beta_4$ FDI: FDI variable in the short term

$\Delta \beta_5$ ECT_{t-1}: Short-term estimator error correction model

The data used in this analysis is time series data which looks at the long-term and short-term effects along with the error adjustment time required if there is a change in the short term using the Engle-Granger ECM model. In short-term regression analysis, this study wants to explore Granger Causality between research variables (Gujarati & Porter, 2013).

3. Result and Discussion

In both OLS and ECM models, there are 2 independent variables, which have a significant

effect on the dependent variable partially. Table 2 which represents the regression results from the model that has been discussed in the previous section which includes the estimation results with the OLS model and the estimation results with the ECM model. Table 2 shows that FDI and Credit variables have a significant effect on unemployment in the long run. Meanwhile, in the short term, the variables that significantly affect unemployment are bonds and FDI variables. The results of the regression carried out are in line with the Harrod-Domar theory that the economy experiences growth if there is an acceleration of production capacity through investment with implications besides increasing output, it also affects employment (Cieřlik & Ghodsi, 2021).

Table 2. OLS and ECM Regression Results

	OLS	ECM
	Result	Result
C	11823088 (0.0000)***	-89039.02 (0.8855)
Stock	0.366750 (0.9308)	1.074097 (0.8145)
Bond	-14.3316 (0.1447)	-18.65702 (0.0609)*
Credit	-0.477819 (0.0199)**	0.499875 (0.6512)
FDI	-216.0052 (0.0009)***	-164.741 (0.1000)*
ECT		-0.857532 (0.0471)**

***Sig. at α 0.01, **Sig. at α 0.05, *Sig. at α 0.1

The negative and significant relationship between FDI on unemployment and credit for unemployment in the long-term model shows that the main factor in the process of reducing unemployment is the need for an increase in capital by producers so as to allow an increase in production volume which will ultimately increase the need for labor and reduce unemployment. Meanwhile, in the short-term model, variables such as bonds and FDI are more reliable to reduce unemployment. This is understandable considering that when the funds needed by

producers to increase production capacity cannot be obtained through credit (either because the bank no longer has funds to distribute or because the credit interest rate is already too high), then the short-term solution that can be taken by producers is by issuing bonds (both bonds with a tenor of 5 years or more) (Azimi, 2022).

In other literature, Gong et al., (2020) suggests that business expansion can be encouraged in the short term and in the long term, especially to overcome unemployment that occurs due to changes in the economic structure in an area with a focus on increasing FDI entering the region. the. For the case in Indonesia, the government can implement a Special Economic Zone program to accommodate companies that will invest so that they can absorb workers after the production facilities are completed. In addition, according to Giofré, (2021) and Nejati & Bahmani, (2020) if a small portion of FDI is invested, it will provide at the macro level. And if these funds are spent on things like investments that focus on human capital then the factors of production really drive the economy in the long run.

Furthermore, this study will also look more deeply into whether there is causality between the variables by looking at the value of Granger causality. Although regression analysis is concerned with the dependence of one variable on another, it does not necessarily imply causation. In other words, the existence of a relationship between variables does not prove causality or direction of influence. But in regressions involving time series data, the situation may be somewhat different because, as one writer put it, time doesn't go backwards. That is, if event A occurred before event B, then perhaps A caused B. However, it is impossible for B to cause A. In other words, events in the past can cause events today. This is the idea behind the so-called Granger Causality Test (Gujarati & Porter, 2013).

Table 3 has summarized the results of the Granger causality test where the credit variable causes Granger causality to the stock variable, the credit variable causes Granger causality to the bond variable, the FDI variable causes Granger causality to the Bond variable, the FDI variable causes Granger causality to the credit

variable, and finally the credit variable causes Granger causality to the FDI variable. The credit variable is the variable that has Granger causality to all other independent variables, while the stock and bond variables are not the cause of the Granger causality. Granger causality can be interpreted as a reciprocal relationship between endogenous variables that occur in the model. (Gujarati & Porter, 2013). Where this relationship has economic linkages, thus allowing for interrelationships (Fon et al., 2021). As described by Le Riche et al., (2021) and Carrère et al., (2020) in their research results regarding the linkage of endogenous variables which are financial sector variables such as FDI and credit or bonds, in which the amount of supply of credit or bonds depends on interest rate. Although the interest rates paid by producers who choose to issue bonds as funding are generally still cheaper than funding through banks (Lerskullawat, 2017).

Table 3. Granger Causality Test Results

	Granger Causality			
	Saham	Obligasi	Kredit	FDI
C				
Stock		0.7693	0.3753	0.4542
Bond	0.3088		0.4147	0.4349
Credit	0.0586*	0.0898*		0.0225**
FDI	0.2808	0.0651*	0.0931*	

In the short-term estimation using the ECM method, it is known that the ECT value is 0.857532, meaning that an error adjustment can be made, $1/0.857532 = 1.166$ period or 1.166×12 months = 14 months. This means that if there is a change in the dependent variable, it will take 14 months for adjustments to be made. Further research can be seen in the research written by Giofré, (2022) and Szkorupová, (2015) where the adjustment time of financial variables through the transmission of

bank credit and capital market funding to absorb labor which in the short and long term will reduce unemployment as a result of increased production volumes. Where every increase in production volume there will be an increase in the need for production factors including labor. Lerskullawat,

(2017) also explains further how the transmission from the banking sector and the capital market through bank loan channels through monetary policy by the government to encourage the ability of the financial sector to fund producer funds needs.

Table 4. Classical Assumption Test Results

Variable	OLS		ECM	
	Classic Assumption	VIF	Classic Assumption	VIF
C				
Stock		1.4941		1.96627
Bond		4.64097		1.07431
Credit		7.91511		1.38964
FDI		5.76796		1.89166
ECT				1.78371
R-squared	0.790226		0.534449	
F-stat	12.24288		2.525587	
Prob(F-stat)	0.000239		0.093071	
Durbin-watson	1.836946		1.713568	
Prob. F(4,13)	0.4148			
Prob. F(2,11)	0.8336			
Prob. JB	0.785662		0.293212	
Prob. F(5,11)			0.9147	
Prob. F(2,9)			0.8822	

***Sig. at α 0.01, **Sig. at α 0.05, *Sig. at α 0.1

The results of the classical assumption test conducted in this study indicate that the model is valid. So that it is possible to be used by policy makers who are focusing on reducing the unemployment rate through production transmission. The production transmission is meant by providing investment-friendly policies

and policies that will encourage credit growth by banks and facilitate bond issuance in the capital market. (Christiano et al., 2021).

4. Conclusion

The results of this study indicate that FDI and credit are the main components that can be

utilized in reducing unemployment in Indonesia in the long term, but accuracy is also required in the distribution of credit and FDI funds that need to be prioritized for production activities so as to allow an increase in production volume which in increasing production volume is also required to increase the factors of production and one of them is the need for increased labor. However, if there are economic problems that cause an economic slowdown, the government can focus on maintaining an increase in FDI and replacing funding through business capital loans into funding through bonds where bonds do not burden producers' finances in the short term and will only mature in the long term (Alter & Schüler, 2013).

In section 3, we also discussed the length of time for error adjustment, where the error adjustment time is 14 months. These results indicate the time required if the government takes an expansionary policy to reduce unemployment through increasing production volume (Baziki et al., 2022). 14 months will be a long time if there are economic problems that lead to an increase in the unemployment rate, but within 14 months, if the government can optimize policies combined with monetary policy (to support credit increases) then the government can produce policies to control unemployment. If it is better, both in the short and long term, the adjustment of the national unemployment rate to full-employment will be easier to implement (Dahlhaus & Vasishta, 2021).

In line with the results obtained in this study that credit and FDI can be used to formulate long-term policies in an effort to overcome unemployment (Setyadharma & Fadhillah, 2021). Where the benefits of FDI will be felt immediately as a result of the establishment of new production centers that absorb labor. On the other hand, bank credit in the long term can be useful for reducing the unemployment rate where bank credit can be boosted by a people's business credit program or a loan program with low interest rates that can be used by entrepreneurs to increase production capacity and absorb labor. However, in the short term, when there is an economic slowdown or shocks that endanger the unemployment rate

due to declining economic activity, policy makers can focus on utilizing bonds and FDI as a short-term solution. Where by utilizing bonds (which generally mature in the long term) to stabilize the company's cash, it will be very useful to prevent a wave of layoffs due to reduced company cash. On the other hand, FDI can be utilized in the short term to continue to absorb labor.

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