

Foreign Direct Investment or External Debt and Domestic Saving: Which has Greater Impacts on Growth?

Horas Djulius

Abstract. *The choice taken by developing countries in meeting the lack of development funds has a varying effect. This study clarifies the role of foreign direct investment (FDI) compared to foreign loans and domestic savings in short- and long-term economic growth of Indonesia. Data were obtained from World Bank and Bank Indonesia and used in error correction model to explain the linkage between predictors and economic growth. We show that in the short run, the three explanatory variables significantly affect economic growth. In the long run, compared to FDI and foreign loans, domestic savings positively and significantly affect economic growth. This study emphasizes the importance of sustaining domestic savings to maintain the stability of economic fundamentals in the long term.*

Keywords: *foreign direct investment, domestic saving, external debt, economic growth.*

Abstrak. *Pilihan yang diambil oleh negara berkembang dalam memenuhi kekurangan dana pembangunan memiliki dampak yang bervariasi. Studi ini memperjelas peran investasi asing langsung dibandingkan dengan pinjaman luar negeri dan tabungan dalam negeri terhadap pertumbuhan ekonomi jangka pendek dan jangka panjang, di Indonesia. Data diperoleh dari Bank Dunia dan Bank Indonesia dan digunakan dalam model koreksi kesalahan untuk menjelaskan keterkaitan antara beberapa variabel penjelas dengan pertumbuhan ekonomi. Penelitian ini menunjukkan bahwa dalam jangka pendek, ketiga variabel penjelas secara signifikan mempengaruhi pertumbuhan ekonomi. Dalam jangka panjang, dibandingkan dengan investasi asing langsung dan pinjaman luar negeri, tabungan domestik secara positif dan signifikan mempengaruhi pertumbuhan ekonomi. Studi ini menekankan pentingnya mempertahankan tabungan domestik untuk menjaga stabilitas fundamental ekonomi dalam jangka panjang.*

Kata Kunci: *investasi asing langsung, tabungan domestik, pinjaman luar negeri, pertumbuhan ekonomi.*

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Introduction

Several countries have failed to justify their sovereign debts, triggering a debt crisis (Das et al, 2010). This failure should be a valuable lesson to countries that consider external debt as a source of development financing. Some of these countries, including Indonesia, are experiencing a shortage of domestic financing sources. In addition to tapping domestic savings, these countries borrow funds and inviting foreign direct investment (FDI) to pursue sustainable economic growth. Based on data from World Bank, the percentage of Indonesia's foreign debt is greater than that of FDI. The Indonesian government should take into account several failure cases in securing foreign debt to safeguard the economy and maintain political stability. Although foreign debt is ineffective and efficient from a short-term perspective, it should be taken into account in a long-term context. Of several Association of Southeast Asian Nations (ASEAN) member countries, Indonesia, Malaysia, and Thailand are the countries that can take advantage of foreign debt to increase economic growth, because a causal disagreement between foreign debt and economic growth exists in these countries (Zouhaier & Fatma, 2014; Ijirshar et al, 2016; Siddique et al, 2015).

Some parties doubt whether foreign capital, especially foreign debt, can provide long-term benefits to the recipient country. Nevertheless, a clear distinction exists between foreign debt and FDI as foreign financing in addition to domestic savings. FDI can complement domestic financial resources to empower a country effectively to implement its development program and improve the welfare of its citizen (Osinubi and Amaghionyeodiwe, 2010). FDI can also contribute positively to the growth of host country economies (Saqib et al, 2013). On the contrary, external debt can negatively influence economic growth (Ezeabasili et al, 2011; Farhana, 2014). The ratio of total external debt to gross domestic product and foreign debt as part of gross national income interacts negatively with economic growth (Zouhaiera and Fatma, 2014). External debt burden negatively affects the national income that reflects economic growth (Ajayi & Oke, 2012). External and internal debt thus forms a significantly negative impact on economic growth. Between the two, external debt generates greater adverse effects than internal debt (Atique and Malik, 2012).

Apart from foreign financing, domestic financing should be maximized to achieve economic growth. The impact of domestic savings on economic growth has attracted international attention both among researchers and policy makers in developed and developing countries. Several studies have demonstrated a direct causal relationship between savings and economic growth (Aghion et al, 2016; Jangili, 2012; Tang and Ch'ng, 2012; Tang and Lean, 2013; Budha, 2012). Few studies have found a two-way causal relationship between savings and economic growth (Najarzadeh et al, 2014).

External debt and FDI are macroeconomic variables that can increase the rate of capital formation for economic growth in addition to domestic savings and they are utilized to help finance budget deficit and accelerate economic activity. Thus, both domestic and foreign financing must be managed to increase economic growth. Hence, the novelty of this research is the use of error correction model in comparing the impact of funding sources

on Indonesia's economic growth. This study clarifies the role of FDI, compared to domestic savings and foreign loans, in the short-term economic growth and analyzes the contribution of these three variables to Indonesia's long-term economic growth.

Method

To examine the role of each predictor variable in both short and long terms, we use error correction model (ECM). The dynamic ECM is a time series data analysis approach that incorporates difference and lag variables. We use ECM because it can explain the influence of one variable on other variables in short and long terms.

The variables used in the research are gross domestic product (GDP), which is a proxy of economic growth, as dependent variable and FDI, external debt (DEBT), and domestic savings (DOMSAV) as independent variables. Data for the 1981–2015 period are obtained from World Bank and Bank Indonesia. The FDI variable used is expressed in FDI inflows (US dollar). External debt is the amount of foreign loans made by the Indonesian government to another country (US dollar). Domestic savings cover the savings of the household, private corporate, and public sectors (% of GDP).

Long-Term Model

$$GDP = \alpha_0 + \alpha_1.FDI + \alpha_2.DEBT + \alpha_3.DOMSAV + \xi \quad (1)$$

The long-term model is converted into short-term ECM model as follows:

Short-Term Model

$$DGDP = \delta + \delta_1 DFDI + \delta_2 DDEBT + \delta_3 DDOMSAV + \delta_4 FDI(-1) + \delta_5 DEBT(-1) + \delta_6 DOMSAV(-1) + \delta_7 ECT(-1) \quad (2)$$

Where: DGDP is changes in gross domestic product; DFDI is changes in foreign direct investment; DDEBT is changes in external debt; DDOMSAV is changes in domestic saving; FDI(1) is FDI in previous period; DEBT(-1) is external debt in previous period. DOMSAV(-1) is domestic saving in previous period; ECT(-1) is error correction term in previous period.

The static equation for the relationship between GDP, FDI, DEBT, and DOMSAV is the same as in Equation (1) or is expressed as follows:

$$\hat{\varepsilon} = GDP - \beta_0 - \beta_1 FDI - \beta_2 DEBT - \beta_3 DOMSAV \quad (3)$$

Result and Discussion

Result

The ECM estimation results are used to determine the behavior of each independent variable in influencing the movement of economic growth, both short and long term, which is reflected in GDP as a dependent variable. The stationarity test is conducted by unit root testing to avoid the existence of spurious regression, which connects two or more variables that seem statistically significant but do not have a true relation.

Table 1. Unit Root Test

Variable	Level		1 st difference		2 nd difference	
	ADF Statistics	Prob	ADF Statistics	Prob	ADF Statistics	Prob
GDP	0.98	0.99 ^x	-3.67	0.01 ^{***}	-8.12	0.0000 ^{***}
FDI	-0.43	0.89 ^x	-5.21	0.00 ^{***}	-7.83	0.0000 ^{***}
DEBT	2.42	0.99 ^x	-2.39	0.15 ^x	-22.04	0.0001 ^{***}
DOMSAV	-0.07	0.94 ^x	-3.65	0.01 ^{**}	-7.28	0.0000 ^{***}

^x) Non stationary data, ⁾ Significant at level 90%, ^{*)} Significant at level 95%, ^{***)} Significant at level 99%
 Source: Data processing

Based on the unit root test using Augmented Dickey–Fuller (ADF), all independent and dependent variables are non-stationary at the first difference level and stationary at the second difference level (See Table 1).

Table 2. Cointegration Test

Variable	ADF Stat	Mac Kinnon Critical Values			Prob
		1%	5%	10%	
ECT	-2.71	-3.65	-2.95	-2.62	0.08

Source: Data processing

Through the cointegration test, the residual is expected to be stationary at the first difference level. Thus, the estimation result is free from spurious regression. The cointegration test shows the existence of cointegration among observed variables and a long-term relationship among research variables (See Table 2).

The estimation of static equation between FDI, external debt, and domestic savings and GDP is shown in Table 3.

Table 3: Static Equation

No	Variable	Coefficient	p-value
1	Intercept	3.35E+10	0.0005
2	FDI	2.792009	0.0034
3	DEBT	-2.247806	0.2538
4	DOMSAV	2.764630	0.0000

R² = 0.99; F stat = 1803.743; Prob = 0.00

Source: Data processing

Short-Term equations estimated through ECM are shown in Table 4. Given that ECT (-1) is significant, ECM can be used to analyze the relationships among observed variables. In the short term, FDI, external debt and domestic savings significantly influence the GDP of Indonesia.

Table 4. ECM Result

No	Variable	Coefficient	p-value
1	Intercept	1.20E+10	0.2079
2	D(FDI)	3.430365	0.0198
3	D(DEBT)	-2.631712	0.0269
4	D(DOMSAV)	2.297796	0.0000
5	FDI(-1)	0.530235	0.7359
6	DEBT(-1)	-2.818066	0.0898
7	DOMSAV(-1)	0.101282	0.2044
8	ECT(-1)	-0.220549	0.0847

$R^2 = 0.94$; F stat = 58.22; Prob = 0.00

Source: Data processing

After obtaining the error correction term, we estimate the short-term ECM using the ordinary least square method. Subsequently, the short-term regression coefficient is obtained (Equation 2), and the long-term regression coefficient (Equation 8) is derived as follows:

$$\alpha_0 = \delta_0 / \delta_7 \tag{4}$$

$$\alpha_1 = (\delta_4 + \delta_7) / \delta_7 \tag{5}$$

$$\alpha_2 = (\delta_5 + \delta_7) / \delta_7 \tag{6}$$

$$\alpha_3 = (\delta_6 + \delta_7) / \delta_7 \tag{7}$$

The equation for the long-term relationship is as follows.

$$GDP = 5.45 \times 10^{10} - 1,41 FDI - 13.82 DEBT + 0,54 DOMSAV \tag{8}$$

From a long-term perspective, FDI has a negative and significant relationship to GDP. Foreign loan has a negative but insignificant relationship, and domestic savings has a positive and significant relationship to GDP. Compared to FDI and foreign loan, domestic savings positively and significantly affect economic growth. Strengthening the source of funding (domestic saving) will affect the economic growth in Indonesia.

Discussion

The estimation results show that FDI has a positive and significant relationship to economic growth in the short term. The findings are in line with the research conducted in Pakistan (Javaid, 2016). Other studies have found that FDI positively and significantly affects sub-Saharan countries' economic growth in Africa (Rjoub, 2017). The positive effects of FDI on economic growth are also observed in other Asian countries, such as Thailand (Roy & Mandal, 2012) and Pakistan (Rahman & Shahbaz, 2011). FDI will increase employment, especially for those who use relatively labor-intensive production techniques, in the short term. In the long run, the direct effect of FDI on economic growth has a negative and significant relationship. Several other studies have reported a negative relationship between FDI and economic growth (Oteng-Abayie & Frimpong, 2006; Apergis et al, 2008). Almfraji

and Almsafir (2014) found the relationship between FDI and economic growth is positive, even though in some cases it is negative or even null. Abbas et al (2015) said that foreign direct investment plays a very important role in economy, especially in developing countries.

This suggests that foreign investment packages offered to Indonesia, such as technology transfer, increased capacity of managers in the country, and access to world markets, do not materialize in the long run. This situation is challenging in the present context, especially from a short-term perspective, because Indonesia still needs FDI. Nevertheless, FDI as a component of capital inflows into Indonesia is a relatively stable capital flow and has a small risk compared to other capital flows, such as investment portfolio or foreign debt. FDI is also less vulnerable to currency fluctuations (e.g., portfolio investments) or heavy interest expenses (e.g., foreign debt).

Foreign loans are still often relied on to finance the development negatively affect the economic growth in the short term. The findings of the present study are consistent with those of several studies that suggest a significant negative relationship between external debt and economic growth (Ezeabasili et al, 2011; Farhana, 2014; Zouhaier and Fatma, 2014; Ajayi and Oke, 2012). However, in the long run, external debt does not significantly affect economic growth. This may be because the capital coming in through this loan is largely in the form of physical value beyond control (possibly overpricing). The repayment of debt and interest comes from the outgoing capital in the form of convertible currency. The growth-promoting effect generated by foreign loans is possibly still smaller than the growth-defeating effect that arises in the process. The receipt of foreign capital derived from foreign debts can pose many long-term problems, both economic and political burden to some developing countries, leading to a decrease in the level of well-being of citizens. Therefore, developing countries should be able to balance the financing of development both from outside and within the country through several measures, such as maximizing domestic savings.

Domestic savings, which consist of short- and long-term government and community savings, have positive and significant impact on economic growth. This finding indicates that domestic savings play a bigger role than foreign financing, such as FDI and external debt. This result is in line with the research conducted in Lean and Song (2009), which reveals a significant relationship between savings and economic growth. The results support the Harrod–Domar model, which proves that the savings rate positively or directly affects GDP (Jagadeesh 2015). The key to improving sustainable economic growth and development in Indonesia is the creation of domestic sources to save and capitalize productively. Domestic savings should be allocated effectively and efficiently during development implementation.

Conclusion

From the results discussed in the previous section, several conclusions can be drawn: First, foreign direct investment has a positive relationship in influencing economic growth in the short term, but the effect becomes negative in the long term. Second, external debt in the short term affects economic growth negatively, but the effect becomes insignificant in

the long term. Third, domestic savings have a positive relation to economic growth in short and long terms. Fourth, domestic financing affects economic growth more consistently than foreign financing (foreign direct investment and external debt).

This result some policy recommendation: First, government should strengthen the capital formation through domestic saving. Second, government should coordinate with the monetary authority to make a condusive policy to increase the domestic saving. Third, investment should be increase by the capital formation through domestic saving.

References

- Abbes, S.M., Mostéfa, B., Seghir, G.M., & Zakarya, G.Y. (2015). Causal Interactions Between FDI and Economic Growth: Evidence from Dynamic Panel Co-Integration. *Procedia Economics and Finance*. Vol. 23: 276-290. DOI: [https://doi.org/10.1016/S2212-5671\(15\)00541-9](https://doi.org/10.1016/S2212-5671(15)00541-9).
- Aghion, P., Comin, D., Howitt, P., & Tecu, I. (2016). When Does Domestic Savings Matter for Economic Growth? *IMF Economic Review*. Vol. 64(3): 381–407.
- Ajayi, L.B. & Oke, M.O. (2012). Effect of External Debt on Economic Growth and Development of Nigeria. *International Journal of Business and Social Science*. Vol. 3(12): 297–304.
- Almfraji, M.A., & Almsafir, M.K. (2014). Foreign Direct Investment and Economic Growth Literature Review From 1994 to 2012. *Procedia-Social and Behavioral Sciences*. Vol. 129: 206-213. DOI: <https://doi.org/10.1016/j.sbspro.2014.03.668>.
- Apergis, N., Lyroudi, K. & Vamvakidis, A. (2008). The Relationship Between Foreign Direct Investment and Economic Growth: Evidence from Transition Countries. *Transition Studies Review*. Vol. 15(1): 37–51.
- Atique, R. & Malik, K. (2012). Impact of Domestic and External Debt on The Economic Growth of Pakistan. *World Applied Sciences Journal*. Vol. 20(1): 120–129.
- Budha, B. (2012). A Multivariate Analysis of Savings, Investment and Growth in Nepa. *MPRA Paper No. 43346*.
- Ezeabasili, V.N., O. Isu, H. & Mojekwu, J.N. (2011). Nigeria's External Debt and Economic Growth: An Error Correction Approach. *International Journal of Business and Management*. Vol. 6(5): 156–170.
- Farhana, P. (2014). Impact of Foreign Debt on Growth in Bangladesh: an Econometrics Analysis. *International Journal of Developing and Emerging Economics*. Vol. 2(4): 1–24.
- Ijirshar, V.U., Joseph, F. & Godoo, M. (2016). The Relationship Between External Debt and Economic Growth in Nigeria. *International Journal of Economics & Management Sciences*. Vol. 6(1): 1–5.
- Jagadeesh, D. (2015). The Impact of Savings in Economic Growth: An Empirical Study Based on Botswana. Vol. 2(9): 10–21.
- Jangili, R. (2012). Causal relationship between saving, investment and economic growth for India – what does the relation imply? *MPRA Paper No. 40002*.

- Javaid, W. (2016). Impact of Foreign Direct Investment on Economic Growth of Pakistan An ARDL-ECM Approach. (*Unpublished Dissertation*). Sweden: Umea University Sweden. Retrieved from <http://sh.diva-portal.org/smash/get/diva2:944306/FULLTEXT01.pdf>.
- Lean, H.H., & Song, Y. (2009). The Domestic Savings and Economic Growth Relationship in China. *Journal of Chinese Economic and Foreign Trade Studies*. Vol. 2 (1): 5-17. DOI: <https://doi.org/10.1108/17544400910934315>.
- Najarzadeh, R., Reed, M. & Tasan, M. (2014). Relationship Between Savings and Economic Growth: The Case For Iran. *Journal of International Business and Economics*. Vol. 2(4): 107–124. Available at: <http://dx.doi.org/10.15640/jibe.v2n4a7>.
- Osinubi, T.S. & Amaghionyeodiwe, L.A. (2010). Foreign Private Investment and Economic Growth in Nigeria. *Applied Econometrics and International Development*. Vol. 10(2): 105–127.
- Oteng-Abayie, E.F. & Frimpong, M.J. (2006). Bounds Testing Approach to Cointegration: An Examination of Foreign Direct Investment Trade and Growth Relationships. *American Journal of Applied Sciences*. Vol. 3 (11): 2079–2085.
- Das, U.S., Papapioannou, M., Pedras, G., Ahmed, F., & Surti, J. (2010). Managing public debt and its financial stability implications. *IMF Working Paper No. WP/10/280*. Washington DC: IMF.
- Rahman, M.M. & Shahbaz, M. (2011). Do Imports and Foreign Capital Inflows Lead Economic Growth? Cointegration and Causality Analysis in Pakistan. *Munich Personal RePEc Archive*, MPRA Paper.
- Rjoub, H. (2017). The Impact of FDI Inflows on Economic Growth: Evidence From Landlocked Countries in Sub-Saharan Africa. *Journal of Social Sciences*. Vol. X(1): 153–168.
- Roy, S. & Mandal, K. (2012). Foreign Direct Investment and Economic Growth : An Analysis for Selected Asian Countries. *Journal of Business Studies Quarterly*. Vol. 4(1): 15–24.
- Saqib, N., Masnoon, M. & Rafique, N. (2013). Impact of Foreign Direct Investment on Economic Growth of Pakistan. *Advances in Management and Applied Economics*. Vol. 3(1): 35–45.
- Siddique, A., Selvanathan, E.A., & Selvanathan, S. (2015). Economics the Impact of External Debt on Economic Growth: Empirical Evidence From Highly Indebted Poor Countries. Vol. 4(8): 1–31.
- Tang, C.F. & Ch'ng, K.S., 2012. A Multivariate Analysis of the Nexus between Savings and Economic Growth in the ASEAN-5 Economies. *Margin: The Journal of Applied Economic Research*. Vol. 6(3): 385–406.
- Tang, C.F. & Lean, H.H. (2013). The Role of Savings on Economic Growth in Malaysia: a View from Generalized Variance Decomposition Analysis. *Economic Computation and Economic Cybernetics Studies and Research*. Vol. 3(47): 199–214.
- Zouhaier, H. & Fatma, M. (2014). Debt and Economic Growth. *International Journal of Economics and Financial Issues*. Vol. 4(2): 440–448.