International Journal on Emerging Technologies **10**(2a): 220-224(2019)

ISSN No. (Print) : 0975-8364
ISSN No. (Online) : 2249-3255

Financial Development Determinants of FDI on Emerging Markets

Dashkin R.M. and Makarenko D.S.
Kazan Federal University, Russia.

(Corresponding author : Dashkin R.M.)
(Received 05 May 2019, Revised 16 July 2019 Accepted 25 July 2019)
(Published by Research Trend, Website: www.researchtrend.net)

ABSTRACT: The financial development of countries plays an important role in their economic development. Emerging economies, or Emerging Markets, have significantly increased their contributions to the global economy over the past decades. This was largely due to the extensive inflows of investment resources into the economies of this group of countries. What is the role of investment conditions and the financial development of economies in attracting investments from other countries? In this paper, we attempted to comprehensively assess the state of financial development of emerging economies and to determine the determinants of investment activity of foreign investors in relation to emerging markets. This paper is divided into four questions - first of all, we estimated the parameters for investing in emerging markets (a); secondly, we comprehensively described various aspects of the financial development of emerging economies - the depth, efficiency, stability and availability of the financial sector (b); then we conducted a regression analysis of the relationship between the factors of financial development and inflows of foreign direct investment based on data for the years 2000-2016 (c); finally, we looked at trends in investment activity in emerging markets, both from outside investors and from domestic ones (d). A significant part of the work is devoted to describing the characteristics of emerging markets and different approaches to the definition of this group of countries.

Keywords: Foreign Direct Investments; Financial Development; Financial Markets; Investments; Emerging Markets.

I. INTRODUCTION

There are many different concepts of emerging markets. For example, according to Jeffrey C. Hooke[a], emerging markets are poor countries with an average per capita income of less than $ 9,000 per year. This definition covers 156 nations, or 75% of the states in which 84% of the world's population lives [1, 2].

Recently, indexes of analytical agencies have been widely developed, which track indicators of the state of emerging markets and, accordingly, classify countries by certain criteria. According to the S&P methodology[b], compliance with eight criteria, as well as finding per capita GDP per capita above $ 15,000, allows the country to be assigned a developed market status. The set of indicators used and the criteria for the compliance of markets are summarized in Table 1.

According to these criteria (domestic market capitalization, debt ratings, inflation stability and others), the agency identified 23 representatives of emerging markets: Brazil, Chile, China, Colombia, the Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Malaysia, Mexico, Pakistan, Peru, the Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey, United Arab Emirates [3-5].Mature economies (USA, UK, Japan, etc.), according to statistics[c], grow by an average of 2.43% annually, while developing countries are characterized by higher potential economic growth rates - 4.52%, and the average global growth rates are 3.48%. One of the reasons is the effect of a low base - the same absolute increase will be different for economies of different scale: a mature economy will experience a slight increase, while the emerging one will add significantly.

One of the characteristic features of developing economies in recent years has been a significant increase in investment activity of both external investors in relation to these economies and domestic investors.

The interest of foreign investors in developing economies is fueled by the expectations of high returns on invested capital. However, the other side of the investment process is the risks inherent in such markets. High income in most cases indicates the presence of comparable risks. For emerging markets, they come from political instability, regulatory changes, infrastructure problems, national currency volatility, a limited capital market and its low liquidity, a high state share in the economy, and overall economic instability - a high likelihood of panic in markets and speculative operations [6-9].

One of the main characteristics of emerging markets is the high investment activity of foreign investors in relation to these markets. This characteristic can be associated with the degree of development of financial markets among developed and developing countries. Forssbæck and Oxelheim (2011)[d] proved that companies in developed countries are taking advantage of a developed financial market (low cost of capital, debt) to invest in emerging markets. In a later study, Desbordes and Wei (2017), an attempt was made to assess the various effects of the financial development of foreign direct investment and investor countries on foreign direct investment flows. The authors found that the financial development of both sides of the investment process has a significant positive effect on various types of foreign direct investment (business expansion, mergers and acquisitions, greenfield projects) by directly increasing access to external financing and an indirect stimulating effect on the industrial activity of countries [10-12].

II. MATERIALS AND METHODS

We will describe the parameters of investment activity in emerging markets, such as - return and risk on invested capital, country risk premium, default spread, market beta, inflation and currency volatility, the value of money in the economy. The results will lead to conclusions about the conditions of investment in these countries (a) [13, 14].

The financial development of emerging markets also plays a special role in the investment process of companies. Empirical studies confirm that the differences between the economies of countries are largely due to their level of financial development[e]. Research also confirms that financial institutions and financial markets have a powerful impact on economic development, poverty alleviation and economic stability[f]. In addition, as part of the study of the determinants of investment activity of Russian companies, we have seen that the availability of sources of financing for investment activities of companies has a positive effect on their investment activity[g].As part of assessing the availability of funding sources for companies in emerging markets, we decided to focus on three sectors of the financial market - the stock market, the debt market, and the banking system. We studied the main characteristics in accordance with the World Bank's methodology[h] (b) [16, 18].

In addition, we will conduct a correlation-regression analysis of foreign direct investment indicators and the parameters of countries' financial development using the least squares method. The initial specification of the model consisted of 17 observations with the dependent variable FDI. We deleted the variables that were initially weakly correlated with the dependent variable, as well as the variables for which the data were not complete, so 17 observations over the period 2000–2016 were analyzed. After the first iteration, we did not get meaningful variable estimates. As a result of the evaluation of the correlation matrix, we found that many variables are highly interrelated (the correlation coefficient is above 0.6), which creates a multicollinearity problem. We tested for multicollinearity using the calculation of the multiple correlation coefficient (VIF). To eliminate multicollinearity, we used the method of step-by-step regression, based on the sequential elimination of insignificant factors from model (c).

Further, in order to understand the current state of developing economies, we briefly characterize the investment activity of external investors in relation to developing countries using UNCTAD data (d) [15, 17, 19, 20].

III. RESULTS AND DISCUSSION

(a) The following table presents data on average annual return on capital, as well as on market volatility as part of calculating the MSCI World Index (developed markets) and MSCI Emerging Markets index (emerging markets).

Table1:Indicators of profitability and market volatility 1995-2017.

Indicator	Developed	Emerging	Brazil	India	China	Russia
Annual returns	4.1 %	7.2 %	14 %	13.2 %	5.3 %	31.1 %
Monthly volatility	16.2 %	22.7 %	37 %	29.2 %	33.1 %	50.4 %

According to the data, emerging markets are characterized by greater return on capital, as well as higher volatility, which is clearly seen in the example of the largest economies of this group of countries.

Another important characteristic that determines the conditions of investment activity in emerging markets is the indicator of the risk of premium on capital, as well as the default spread. The expected risk premium for mature markets is 5.08%; This indicator is calculated based on the S & P 500 index. The country risk premium is calculated by multiplying the default spread by the relative market volatility of this market (the average for developing countries is the ratio of the standard deviation of the capital market to the standard deviation of the debt market, equal to 1.12). For developed countries, the country risk premium is zero, since it is already included in the initial risk capital premium (5.08%). For developing countries, this figure ranges from 10% to 0.8%.

The systematic risk level can also be assessed by the beta indicator, which characterizes not only the market risk component, but also reflects the exposure of this type of risk on the part of companies. So according to the data[i], for developing companies the total beta is 1.14, for US companies - 1, for the European market - 1.07, for Japan - 0.86. This means that when calculating the cost of capital, an investor in emerging markets will have to assume a greater level of risk, characterized by greater market volatility.

The high level of inflation and the degree of its variability according to the data are characteristics of emerging markets: over the past 20 years, from 1997 to 2017, emerging markets were characterized by higher inflation and its volatility than developed countries. Thus, the average value of the GDP deflator in the world over the period is 4.15%, in developed markets - 1.78%, and countries with emerging markets - 7.47%.

In addition, the standard deviation of this indicator is higher for developing economies - 4.22% versus 0.66% for developed countries.

It is known that emerging markets are most susceptible to the volatility of foreign exchange markets due to their different economic structure from developed countries. According to P. Disyatat, G. Galati[j], the high volatility factor is the high cost of hedging, and sometimes the lack of such an opportunity in the underdeveloped and imperfect capital markets. R. Caballero, A. Krishnamurthy[k] believe that emerging markets are highly dependent on capital flows and a sharp change in their direction leads to significant fluctuations in the foreign exchange market.

Another important characteristic of emerging markets is the higher cost of money in the economy. The average real interest rate of developed countries in the period from 2001 to 2017 was 2.57%, while developing countries (excluding Brazil) - 3.63% (6.37% including Brazil). The difference is insignificant, but it is; moreover, the nominal level of interest rates is significantly higher in emerging markets, and unstable inflation allows smoothing interest rates only in the long run, while in the short run the differences can be significant.

(b) The group of indicators characterizing the availability of the financial sector included data on the development of the branch network of banks, the concentration of the banking sector, and the degree of presence of foreign banks in the banking services market. Following the analysis we conclude that access to financial markets in emerging economies quite lower, but significant steps was made in recent years to improve the situation.

The depth of financial development is characterized by 8 indicators. This group of indicators most accurately reflects the degree of development of the financial system in terms of opportunities for financing investment activities of companies, as it evaluates the credit market, debt and stock markets - the most traditional forms of attracting capital by companies. We can conclude that the stock market as a way of raising funds is more emerging markets is generally banking-oriented due to a weak institutional environment, a smaller degree and number of agency conflicts due to the prevalence of medium and small companies than large corporations, as well as because of the structure of the economy of emerging markets, the banking system is more efficient in traditional, standardized sectors, while the market-oriented system is more efficient in complex, knowledge-intensive industries. Concerning debt market, we noted that there is no growth in new issues of corporate bonds in the non-financial sector in both developed and emerging economies. But we note a significant increase in government debts in developed countries since 2008, which can be explained by the growing budget deficit of some European countries, as well as the active process of QE undertaken by the US regulator in the post-crisis time.

The next group of indicators, evaluating the effectiveness of the financial system, confirms the previously mentioned characteristics of emerging economies about the higher cost of money in the economy and the real interest rate.

(c) Next step is testing of some indicators of the financial development of countries regarding the impact on foreign direct investment flows. As noted, access to finance is an important component of the investment process, and the availability of data for individual countries allows us to test the extent of this relationship. The results of using the least squares method with the gradual elimination of variables showed that the significant factors for the dependent FDI variable are: the ratio of bank capital to total assets with the coefficient -0.0032 at the significance level of 0.05; the ratio of bank loans to deposits with a coefficient of 1.0521 at the same level of significance; the volume of the new issue of corporate bonds with a coefficient 0.1342 at the same level of significance; volume of corporate bonds in circulation with a ratio of 0.1052 at a significance level of 0.1; stock market capitalization with a coefficient of traditional in developed countries than developing. Empirical studies confirm this conclusion. For example, Tadesse (2002) [l] concluded that the financial system of 0.2245 at the same level of significance; and volatility of market prices with a negative coefficient of -0.6721 at the same level ofsignificance. The model is characterized by the R-square determination index with a value of 0.98. This means that it explains 98% of the changes in FDI using selected variables. The model describes the factor dynamics of the indicator quite well.

It is shown that market development through different sectors has different effects of FDI flows. As emerging markets are economies with banking-oriented systems we can explain the biggest impact of credit processes to investment activity (with coefficient of 1,05). As was implied bond and stock markets will also have positive relationships with investment activity (0,13 and 0,22 coefficients).

(d) Finally, according to the UNCTAD[m] report, the main recipients of investments from a group of emerging economies are China, Brazil, Mexico, Russia, India, Indonesia, Chile, Poland, and Turkey (in terms of the average value of incoming investments from 1993 to 2017).

If we talk about the group of emerging markets as a whole (23 representatives according to the S&P methodology), by the end of 2017, these countries became the recipient of 30% of the total global incoming foreign direct investment.

It is noteworthy that over the past decade, this figure has increased significantly. Looking at the retrospective, we can note that the active growth of investment in emerging economies was in the period of liberalization in the mid-1990s, as well as the period of the 2000s; emerging market crises in 1997–1999, 2014–2016, associated with a currency crisis and instability in commodity markets (high export orientation played a negative role, exposing the high dependence of emerging markets on external conditions) directly affected the decline in foreign investors' interest in emerging markets.

Table 2: Coefficients for variables in the determinant model of FDI.

Item	Coeff.	St. Dev.	t-stat.	p-value
Const	75,1853	7,0663	10,64	2,39e-026
Bank capital to total assets (%)	-0,0032	0,1761	-0,018	0,9854**
Bank credit to bank deposits (%)	1,0521	0,3057	3,441	0,0006**
Corporate bond issuance volume to GDP (%)	0,1342	0,0413	3,243	0,0012**
Outstanding domestic private debt securities to GDP (%)	0,1052	0,0777	1,354	0,01757***
Stock market capitalization to GDP (%)	0,2245	0,0168	0,351	0,0056 ***
Stock price volatility	–0,6721	0,0658	-10,21	2,23e-024***

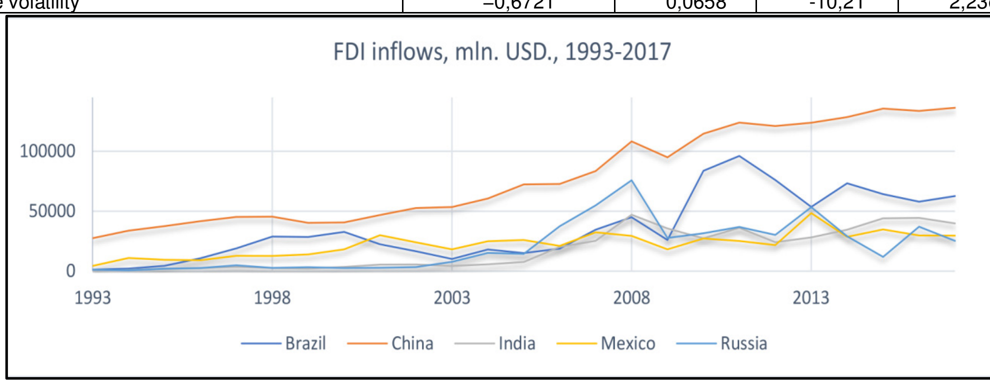

Fig. 1.

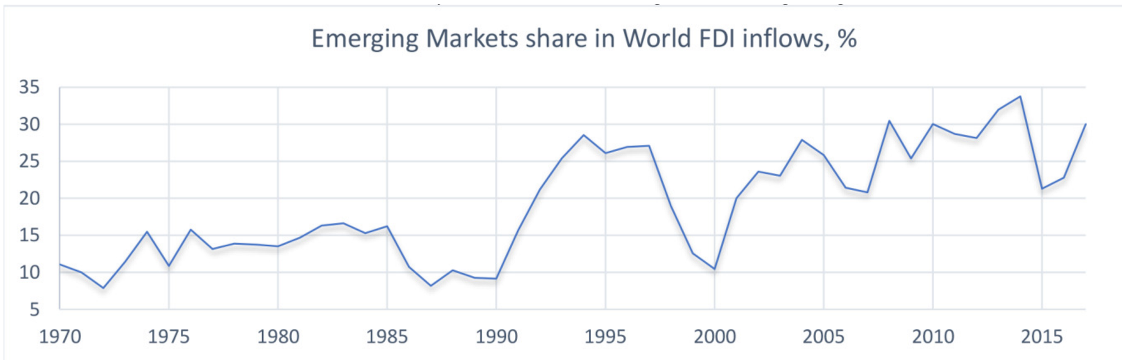

Fig. 2.

IV. SUMMURY

The analysis of the level of financial development of countries suggests that the overall level of financial development of developing economies is generally lower than the level of developed countries. In addition, emerging capital markets are characterized by low efficiency due to poor information transparency, which leads to the fact that the valuation of many assets is distorted, since there is no discounting of all available information in asset prices.

According to the results of the regression analysis of the FDI model, we found that certain indicators of financial development have a positive effect on the level of FDI. Such variables are the indicators characterizing the level of development of the banking, stock and debt markets of developing countries.

Emerging Markets have received significant investment in recent years. Summarizing, a number of conclusions can be made: first, the interest of foreign investors is fragmented, unstable, which can be clearly seen in times of emerging market crises; second, in spite of this, emerging markets have significantly improved their investment attraction positions over the past decades; thirdly, the investment activity of the emerging markets themselves has been stable and upward in the last 20 years; fourth, leading positions on investment activity are occupied by 4 out of 5 representatives of the group of BRICS countries, as well as such countries as Mexico, Indonesia, Chile and Malaysia.

V. CONCLUSIONS

Summing up the discussion on the parameters of investment, we note that the presented characteristics of emerging markets provide an opportunity for investors who are willing to take on significant risks in search of high yields. Due to significant risks and high profitability, investments in developing countries are more than investments in developed economies. This in turn creates significant risks for the developing countries themselves.

The direction of further research in this area will be the investment activity of companies in emerging markets. It is supposed to test the influence of factors of the investment climate in emerging markets, as well as the degree of financial development of the economies of emerging markets on the investment behavior of companies operating in these markets.

The study may be interesting both for the scientific community in the study of issues related to emerging markets and their condition, as well as for representatives of the investment community, considering the potential investment of assets in the jurisdictions of developing countries.

ACKNOWLEDGEMENTS

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

REFERENCES

[1]. Amato, J.D., & Gerlach, S. (2002). Inflation targeting in emerging market and transition economies: Lessons after a decade. *European Economic Review*, *46*(4-5): 781-790.

[2]. Balakrishnan, R., Danninger, S., Elekdag, S., & Tytell, I. (2011). The Transmission of Financial Stress from Advanced to Emerging Economies.*Emerging Markets Finance and Trade*,*47*: 40–68.

[3]. Damodaran Data on Betas. URL:

[4]. http://people.stern.nyu.edu/adamodar/New_Home_Page/datacurrent.html#discrate

[5]. Dashkin, R.M. (2017). Determinants of investment activity of russian companies. *Astra Salvensis*, 397-405.

[6]. Desbordes, R., & Wei, S. (2017). The effects of financial development on foreign direct investment. *Journal of Development Economics*, *127*: 153-168. doi:10.1016/j.jdeveco.2017.02.008

[7]. Emerging Markets: Identification, New Developments and Investments. John V. Reynolds/Nova Science Publishers, Inc., Hauppauge, N.Y., 2010.

[8]. Forssbæck, J., & Oxelheim, L. (2011). Corporate financial determinants of foreign direct investment. *Quarterly Review of Economics and Finance*, *51*(3): 269-282. doi:10.1016/j.qref.2011.05.002

[9]. IMF World Economic Outlook Database October 2018. URL: https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD

[10]. Khan, M.S., & Senhadji, A. (2000). Financial Development and Economic Growth: An Overview. *IMF Working Paper 00/209*. Washington DC: IMF

[11]. Levine, R. (2005). Finance and Growth: Theory and Evidence. Handbook of Economic Growth, in: Philippe Aghion & Steven Durlauf (ed.), *Handbook of Economic Growth,* edition 1, Vol.*1*, chapter *12*: 865–934.

[12]. Disyatat, P., & Galati, G. (2005). The effectiveness of foreign exchange intervention in emerging market countries. *BIS papers*, *24*: 97-113.
[13]. Caballero, R., & Krishnamurthy, A. (2004). *Exchange rate volatility and the credit channel in emerging markets: A vertical perspective* (No. W10517). National Bureau of Economic Research.
[14]. Bengoa, M., & Sanchez-Robles, B. (2003). Foreign direct investment, economic freedom and growth: new evidence from Latin America. *European journal of political economy*, *19(*3): 529-545.
[15]. Tadesse, S. (2002). Financial architecture and economic performance: international evidence. *Journal of financial intermediation*, **11**(4), 429-454.
[16]. Beach, S. L. (2006). Why emerging market equities belong in a diversified investment portfolio. *The Journal of Investing*, *15(*4): 12-18.
[17]. Beach, S. L. (2010). Market Integration and Investor Protections in Emerging Markets, in Columbus, F. (ed.) Emerging Markets: Identification, New Developments, and Investments, Nova Science Publishers, Inc., Hauppauge, NY.
[18].UNCTAD World Investment Report.(2018). URL: https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2130
World Bank. (2017). Global Financial Development Report 2017. URL: https://www.worldbank.org/en/publication/gfdr
[19]. Kvet, M., & Matiasko, K. (2018). Temporal Data Performance Optimization using Preprocessing Layer. *Journal of Information Systems Engineering & Management*, *3*(2), 13.
[20]. Rabbani, M., Bagherzadeh, N., & Rafiei, H. (2014). Calculating raw material and work-in-process inventories in MTO. MTS production, *UCT Journal of Research in Science, Engineering and Technology*, *2*(3): 109-116.

Footnote

[a]. Hooke, Jeffrey C. Emerging markets: a practical guide for corporations, lenders, and investors. New York: Wiley, 2001. ISBN 978-0-471-36099-5.
[b]. Country Classification Methodology.S&P Dow Jones Indices. August 2018. URL: https://us.spindices.com/documents/index-policies/methodology-country-classification.pdf
[c]. IMF World Economic Outlook Database October 2018. URL: https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD
[d]. Forssbæck, J., & Oxelheim, L. (2011). Corporate financial determinants of foreign direct investment. *Quarterly Review of Economics and Finance*, *51*(3), 269-282. doi:10.1016/j.qref.2011.05.002
[e]. Khan M.S., Senhadji A. (2000). Financial Development and Economic Growth: An Overview. IMF Working Paper 00/209. Washington DC: IMF
[f]. Levine, Ross. 2005. "Finance and Growth: Theory and Evidence." Handbook of Economic Growth, in: Philippe Aghion& Steven Durlauf (ed.), Handbook of Economic Growth, edition 1, volume *1*, chapter 12, pp. 865–934.
[g]. Dashkin, R. M. (2017). Determinants of investment activity of russian companies. *Astra Salvensis, 2017*, 397-405.
[h]. World Bank.Global Financial Development Report 2017. URL: https://www.worldbank.org/en/publication/gfdr
[i]. Damodaran Data on Betas. URL: http://people.stern.nyu.edu/adamodar/New_Home_Page/datacurrent.html#discrate
[j] PitiDisyatat and Gabriele Galati. The effectiveness of foreign exchange intervention in emerging market countries
[k]. Ricardo Caballeroa and Arvind Krishnamurthy. Exchange Rate Volatility and the Credit Channel in Emerging Markets: A Vertical Perspective∗
[l].Solomon A. Tadesse, 2002. Financial Architecture and Economic Performance: International Evidence. Journal of Financial Intermediation 11(4):429-454 · October 2002.
[m] UNCTAD World Investment Report 2018. URL: https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2130