

The Impact of the Local Financial Market on Economic Growth: A Case Study of Kazakhstan¹

Kazakhstan's financial market has always been the focus of the government attention as an important element of country development. Therefore, the main goal is to build a well-developed, competitive and trustworthy financial market that has a dominant influence on the economy and sustainable development. Nevertheless, this statement is true for economies that have reached a certain level of development. For countries with economies in transition, achievement of a significant level of economic growth is a prerequisite for the formation of a stable capital market and banking system, that will subsequently have a significant positive impact on economic growth. This study investigates the relationship between the local financial market and economic growth for Kazakhstan based on measures of economic growth and its components, as well as empirical indicators of banking development and stock market — size, liquidity and volatility — used as control variables that determine Kazakhstan's economy. Time series regression analysis and Granger causality test was performed for data from 1994 to 2017 in order to design country-specific measures for financial development. The results confirmed the profile of Kazakhstan's economy by showing that world oil prices and total investment are the most powerful factors influencing economic growth. The direction of causation for Kazakhstan comes from economic growth towards the development of the local financial market, contrary to the postulate that the development of a financial intermediary stimulates economic growth. Therefore, at this stage, the financial sector does not stimulate the economic development of Kazakhstan, but rather the economic growth based on oil production and export is a catalyst for the development of the financial sector. It should be recommended to Kazakhstan's government to shift the focus from financial market to economic development in order to mobilise sufficient volumes of domestic and international investments to transform the economy and make a transition to sustainable growth.

Keywords: economic development, financial markets, financial intermediaries, emerging economy, local capital market, stock market liquidity, banking development, resources-based economy, demand-following hypothesis, Kazakhstan

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RESEARCH ARTICLE

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Влияние местного финансового рынка на экономический рост: пример Казахстана

Финансовый рынок Казахстана — один из важнейших элементов развития страны. Главная цель государства — построить хорошо развитый, конкурентоспособный и заслуживающий доверия финансовый рынок, оказывающий решающее влияние на экономику и устойчивое развитие. Данное утверждение верно лишь для экономик, достигших определенного уровня развития. Для стран с переходной экономикой достижение значительного уровня экономического роста является необходимым условием формирования стабильного рынка капитала и банковской системы, что впоследствии окажет положительное влияние на рост. В данной статье исследуется взаимосвязь между местным финансовым рынком и экономическим ростом Казахстана на основе характеристик и компонентов экономического роста, а также эмпирических показателей развития банковской системы и фондового рынка — размера, ликвидности и волатильности, — используемых в качестве контрольных переменных, определяющих экономическое положение Казахстана. Регрессионный анализ временных рядов и тест причинности Грейнджера для данных за период с 1994 г. по 2017 г. позволили разработать показатели финансового развития для конкретной страны. Результаты исследования показали, что мировые цены на нефть и общий объем инвестиций являются наиболее важными факторами, влияющими на экономический рост в экономике Казахстана. Направление причинно-следственной связи от экономического роста к развитию местного финансового рынка Казахстана противоречит постулату о том, что развитие финансового посредничества стимулирует экономический рост. На данном этапе финансовый сектор не стимулирует экономическое развитие Казахстана, в то время как экономический рост, основанный на добыче и экспорте нефти, является катализатором развития финансового сектора. Правительству Казахстана рекомендуется сместить акцент с финансового рынка на экономическое развитие с целью мобилизации достаточных объемов внутренних и международных инвестиций для трансформации экономики и перехода к устойчивому росту.

Ключевые слова: экономическое развитие, финансовые рынки, финансовые посредники, развивающаяся экономика, местный рынок капитала, ликвидность фондового рынка, развитие банковского дела, сырьевая экономика, гипотеза следования за спросом, Казахстан

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Introduction

Dynamism and globality are modern characteristics of the financial market but its role in economic development has been widely discussed in scientific circles for more than 100 years. Joseph Schumpeter (1911) argued that the services provided by financial intermediaries are essential for technological innovation and economic development. However, since that time, the discussion regarding the role and influence of the financial sec-

tor on the economic growth continues and a consensus has not been reached yet. Scientists' opinions vary significantly. One of the reasons for the lack of agreement on this matter is the high rate of transformation of the research subject itself.

The size, function, and role of the capital market have been changed: global functioning has greatly strengthened its role in economic development. The availability of capital, the depth of the market, the efficiency of investment distri-

bution, and stability have become the determining factors of the economic policies of developed and developing countries. The research question “What came the first: the chicken or the egg?” in the context of the financial market and economic development remains open.

Most empirical studies conducted at the end of the 20th century came to the unequivocal conclusion that financial markets stimulate economic development. However, for financial markets in developing countries, this conclusion is not so obvious since such markets are not distinguished by the depth, variety of financial instruments and, therefore, cannot provide access to financial resources for economic agents. The latest findings support the view that economic activity is the primary factor that influences financial development. The significance of economic growth is manifested as a possible catalyst for financial market development, which will ultimately promote economic growth. It means that the study of the role of the financial market for economic development remains relevant for emerging countries in general and Kazakhstan in particular.

Kazakhstan’s financial market has always been the focus of government attention as an important element of country development. Proof of this is the consolidation and cleaning of banks’ balance sheets of non-performing loans, the development of the local capital market through equity and debt instruments. However, the lack of research on the current state and prospects for the development of the financial market in Kazakhstan motivates us to search for answers to several research questions.

The hypothesis states that the financial market of Kazakhstan with the current characteristics and development stage does not have a significant impact on economic growth. Accordingly, the achievement of a certain level of economic development is a priority, since it will contribute to the development of a local financial market. In this case, the «demand hypothesis» was tested when consumer demand creates the need for additional financing through financial market channels. That is, causality moves from economic growth to the financial market.

Based on the results of the study, this paper argues that the financial market of Kazakhstan does not have a significant impact on the economic development of the country at this stage. Moreover, part of the public financial resources is utilised for solving structural problems of the financial sector development, which reduces the potential of the economy. The empirical evidence supports the theory that financial development growth de-

pends on the state of economic development and does not always lead to faster economic growth. Only at relatively high levels of economic development, the link between finance and growth is positive and strongly significant. For relatively less developed economies, the relationship weaker or even absent.

Theory: Importance of the financial market to the local economy

The finance-and-growth story like a fairy tale has started many years ago. The very first attempts to empirically explain the relationship between financial intermediation and long-run economic growth were done between 19th and 20th centuries by Bagehot (1873) and Hamilton (1781). By using new research instruments, Goldsmith (1969) was the first who documented a positive dependence between financial development and economic growth based on the analysis of 35 countries. Moreover, McKinnon (1973) illustrates the close ties between financial and economic development for a few countries. The former and the latter authors rejected the idea that financial growth nexus can be safely ignored without substantially limiting economic growth understanding. At the same time, the bulk of the literature reviews have mentioned numerous influential economists who argued that finance is anything but a sideshow to economic development (Robinson, 1952; Meier, Seers, 1984; Lucas, 1988; Miller, 1984). Since then, 30 years have passed and discussion about the role of the financial sector in economic growth is still open. We believe this happens because, during this time, the role of the financial sector in the economy has changed significantly.

The next era of the finance-and-growth research story has begun with cross-country analysis; several econometric studies based on linear methods have provided empirical support for the leading view that finance promotes growth. King and Levine (1993), based on Joseph Schumpeter’s point of view about financial markets’ influence on economic development, raise the question that has laid the foundation for a whole body of systematic research in this field. Initially empirically defining «financial development» through four indicators to measure the ability of financial intermediaries to distribute assets, they found that financial development has positive causality with economic growth, physical capital accumulation, and economic efficiency. It means that the level of financial development is a good predictor of future rates of long-run growth, confirmed, therefore, the conclusion suggested by Schumpeter.

As a result, researchers significantly widened the field of investigations and hypotheses looking for causes and causality, components of the financial markets and channels, their influence on economic growth, exogenous and endogenous factors, the relationship with total factor productivity, the structure of the financial sector: the banking and stock market which are in total, simultaneously, or one by one directly or indirectly influence on economic growth. In particular, as was shown by Levine (1991; 1997) and Levine and Zervos (1996), stock markets accelerate human capital development and production growth, increasing the liquidity and improving the efficiency of the firm investment, that stimulates long-run economic growth.

Demirguc-Kunt and Levine (1996) argued that better-functioning and more internationally integrated stock markets boost economic growth by shifting savings into higher-return investments and tend to stimulate the number of bank loans. They found that the channels of the stock market increase the liquidity through (1) connecting investors and savers to give permanent access to capital; (2) improving the allocation of capital by making investment less risky and more profitable; (3) allowing long-term and large amounts of capital to fuel the economic development; (4) increasing in returns to investments and corporate governance.

Later, Levine and Zervos (1998) demonstrated that stock market liquidity and banking development both positively predict growth, capital accumulation, and productivity improvements. Moreover, Rajan and Zingales (1998) at least two explanations to make progress on causality: 1) endogenous savings are the reason for correlation in growth and initial financial development with the list of potential omitted variables; 2) financial development may predict financial growth because stock market capitalises the present value of growth opportunities that stimulate financial institutions to lend more. Their findings suggest that the development of financial markets facilitates the growth of sectors dependent on external finance.

Empirical work by Beck, Levine and Loayza (2000) concludes that financial intermediaries cause a substantial impact on total factor productivity growth, physical capital and gross domestic product (GDP) growth, including private savings rate. Levine, Loayza and Beck (2000) found that exogenous components help to explain the differences in the level of financial development. In particular, exogenous components of financial intermediary development as law, the legal system,

information disclosure and accounting standards are robustly linked with economic growth through the total factors productivity growth and not through savings and physical capital accumulation. In addition, it should be noted that both types of financial intermediaries — stock markets and banks — positively influence economic growth (Beck, Levine, 2004).

The main results from the decade of researchers' work were systemised as follows: (1) countries with more efficiently functioning banks and markets grow faster; (2) both banking and market are important for growth and the total level of their development matters; (3) better functioning financial systems weaken external financial constraints, suggesting that this is one of the mechanisms by which financial development matters to growth. However, these results do not reject the view that economic activity influences financial development. The conclusion is: «We are far from definitive answers to the questions: Does finance cause growth, and if it does, how?» (Levine, 2006, p. 868).

The question is still open. However, the field of research became wider in terms of time series data available, research design and countries. More and more researchers try to explain the phenomenon of the relationship between finance and economic growth, especially for emerging or financially underdeveloped countries. In particular, the direction of causality in the relationship between financial market development and economic growth is important for many developing countries for optimal allocation of limited financial resources between financial and other sectors of economies. As it was presented by Deidda (2006) based on the General Equilibrium Model, the power of the relationship between financial development and growth generally strongly depends on per-capita income level. Moreover, financial development occurs endogenously as the economy reaches a critical threshold of economic development and is maybe unsustainable at the early stages of it.

Since then, a bulk of new evidence and research papers have appeared, focused on this question on transition economies in Europe, Africa and Asia that give provocative evidence of finance repercussion on economic growth from the short-term and long-term prospects by testing different types of hypothesis and countries level of financial development projections. For instance, by using a set of seven Middle East and North African economies, Al-Khoury (2007) claims that banking sector development does not promote economic growth in the short term, but improvements in the banking sector should boost economic growth in the

long run. It is also possible that economic growth creates a demand for financial intermediaries by increasing banking activity, promotes the entry of new banks, decreases the cost of intermediation and, therefore, boosts investment and growth.

Murinde (2012) produced a significant overview of existing research papers in the finance-and-growth story for African countries, highlighting both the theoretical frameworks and the evidence from empirical work. From his point of view, the results provide new empirical evidences that show the directions of the impact of the financial industry on economic growth through the quality of corporate finance management, population income growth and poverty reduction, including income redistribution between generations.

Aregbeshola (2016) in his research for six African countries supports the findings about (1) “supply-leading” and (2) “demand-following” hypotheses for underdeveloped countries based on research of Patrick (1966). The former hypothesis holds if financial markets are the cause of a country’s economic growth, providing the required amounts of financial resources with low transaction costs. The latter hypothesis is confirmed in the case when economic development creates an increase in demand for financial resources in the financial market, and is, therefore, the reason for growth. After testing both of these hypotheses, it is claimed that at first, the African continent needs to grow its economy to achieve financial market development.

To develop this approach further, Pradhan (2018) observed two more hypothesis: (3) the “feedback hypothesis” which suggests that economic growth and stock market development can perform with synergy effect to complement and reinforce each other, making them mutually causal or bidirectional; (4) «the neutrality hypothesis» which suggests that the development of stock market and economic growth are independent of each other with meaning that the development of the stock market has no role in economic growth and vice versa. Based on the data from G-20 countries, the mixed evidence on the interrelationship between the development of the stock market and per capita economic growth was received in both the individual country and the panel setting. These hypotheses also were tested for 13 Central and East European Countries (CEECs) during transition using panel data for 1994–1999. The presence of a positive and significant link between financial development and economic growth in CEECs has not been confirmed (Dawson, 2003).

Research made by Seven and Coskun (2016) based on panel data suggest that people with

low-income do not necessarily benefit from financial development that promotes economic growth in emerging countries. Based on the data from 40 financially developed and underdeveloped countries, the contribution of credit market and stock market development on economic growth was determined. In general, financial systems based on credit market better support long-term economic growth without any differentiation for the stage of the countries development (Durusu-Ciftci, Ispir, Yetkiner, 2017).

Caporale et. al (2015) reported that investment is the most relevant determinant of the growth process in 10 transition economies as well as human capital and trade openness, since it improves productivity, competition and technological progress. In contrast, credit to the private sector has a positive but insignificant effect due to the transition process and bank crises. Stock market capitalisation due to the small size has a minor effect on economic growth due to overall underdevelopment in the financial sector, and a lack of financial depth. In contrast, privatisation and entry of foreign investors can increase this effect. Oskonbaeva (2018) investigates the causal relationship between financial development, trade openness and economic growth based on empirical analysis of 9 transition countries (Ukraine, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova and Tajikistan) over the period 1998 to 2015 suggest that there is evidence of a bidirectional causality between financial development and economic growth in the short-run.

A substantial time-series literature examines the finance-growth relationship using a variety of time-series techniques (Jung, 1986; Demetriades, Hussein, 1996; Arestis, Demetriades, 1997). Based on the ratio of money to GDP, bank development and stock market indicators to measure of the financial development, the studies supported the view that finance stimulates economic growth but with some cautions, depending on the size of the relationship (Arestis, Demetriades, Luintel, 2001).

Applying time-series methods in some cases allows researchers to expand the dimension of the analyses to design country-specific measures of financial development. Rousseau and Sylla (1999) measured banking and equity market activity to investment, imports, and business incorporations over the 1790–1850 period to examine of the historical role of finance in U.S. economic growth. They find strong support for the theory of “finance-led growth” in the United States. In contrast, Shahid, Hibba and Tirmizi (2015) by employing of the time series data from 1980 to

2012 of Pakistani banks, found a positive and statistically significant relationship between financial development and economic growth that confirmed a dire need for a sound banking sector to ensure long-term sustainable economic growth. However, two out of the four metrics were statistically insignificant.

Modern economic theory and empirical evidence demonstrate that financial intermediaries mitigate the consequences of the information asymmetries, moral hazards, adverse selection problems and transaction costs by managing risks, facilitate resource mobilisation, influence savings, improve allocation decisions. All these functions provide an intellectual framework for the understanding of the channels that influence finance on long-term economic growth. Nevertheless, financial system services play a supporting role in the economic development process and, therefore, are not the main source of economic growth. But the inability to perform these functions, however, can have a more significant negative impact than other possible factors (Graff, 2003).

Unfortunately, there is no final response to the research question. This overview of theoretical researches pursues further investigations that are relevant for Kazakhstan, too. The most significant determinants of Kazakhstan's economic development are:

- foreign direct investments and oil prices (Aizhan, Makaevna, 2011; Arazmuradov, 2016; Kalyuzhnova, Patterson, 2016; Khoich, 2012; Kupalova, Tulebayeva, 2012);
- total factors productivity (Kasman, Mekenbayeva, 2016; Ziyadin, 2012);
- financial integration process in the Eurasian Economic Union (Falkowski, 2012; Kebekpaeva, 2012; Knobel, 2015; Tarr, 2016);
- financial sector reforms (Akimov, Dollery, 2008; Ruziev, Majidov, 2013);
- stock market performing and banking sector stability (Grishko, Murzakhmetov, 2015; Nichkasova, Shmarlouskaya, Sadvokassova, 2019).

Having bank-based financial sector, Kazakhstan, due to a high level of non-performing loans, faced the problem of lacking financial resources for economic development. As it was mentioned at the OECD Report for Kazakhstan¹, the access to the financial resources is one from seven main restrictions. The decision to balance the financial sector by creating the Astana International Financial Centre was made by

the government in 2015. Since then, a lot of efforts and resources was spent before AIFC had started to work in 2018. Now the task is to build a well-developed, competitive and trustworthy financial market. Is it the right way? Or the government should spend this money on the diversification of the natural resources-based economy? That is why the present research aims to answer this question.

Data and Methods

This study investigates the possible relationship between the local financial market and economic growth in a time series environment for Kazakhstan by using data covering the period since independence between 1994 and 2017. The dataset is generated from the World Development Indicators Database of the World Bank² and World Economic Outlook Database of the International Monetary Fund³. To avoid econometric estimation errors that may arise due to the unbalanced dataset, the diagnostic techniques were used to transform most of the variables, which are discussed in the paragraphs that follow. The most efficient basic model in this study area is the finance-growth linkage model suggested by Levine and Zervos (1998) and then has been adjudged by Khan and Senhadji-Semlali (2000).

This Model looks like:

$$\log Y_t = \alpha_1 + \alpha_2 CMT_t + \alpha_3 X_t + \varepsilon_t,$$

where Y_t – economic growth at time t , CMT_t – the financial market indicators α_t time t , X_t – contains control variables, ε_t – the error term.

The following indicators were used to assess the relationship between economic growth and both banking development and the stock market: (1) measures of economic growth and its components; (2) a measure of banking development; (3) empirical indicators of stock market size, liquidity, volatility.

Growth Indicators. Previous studies examining the relationship between the local financial market and economic growth use real GDP per capita (GDPP) at constant price USD 2010 base year as a proxy of growth because the variable seems like the best measure of real economic growth (for example, Alfaro et. al, 2004; Adjasi, Biekpe, 2006;

¹ OECD Development Pathways: Multy-dimensional Review of Kazakhstan. Retrieved from: [//dx.doi.org/10.1787/9789264246768-en](https://dx.doi.org/10.1787/9789264246768-en). (Date of access: 20.04.2018).

² World Bank. (2019). World Development Indicators. Retrieved from: <https://databank.worldbank.org/reports.aspx?source=world-development-indicators> (Date of access: 15.03.2019).

³ International Monetary Fund. (2019). World Economic Outlook Database. World Economic and Financial Survey. Retrieved from: [//www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx](https://www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx). (Date of access: 12.03.2019).

Caves, 2007; Aregbeshola, 2016; Revia, 2013). GDP calculated as the sum of gross value added created by all resident producers in the economy with taxes but without subsidies not included in the value of the products. A metric of GDP per capita calculates as GDP divided by the midyear population allows estimating a level of economic development of different countries. Growth (Y) is measured as the log of $GDPP_t$ divided by $GDPP_{t-1}$.

The component of the financial market in this study includes independent variables used as measures of financial market development. As it was reported, banking development and stock market liquidity are both good predictors of economic growth, capital accumulation, and productivity growth (Levine, Zervos, 1998).

Banking Development Indicators. Domestic credit to private sector by banks: this type of financial depth indicator: the value of loans made by commercial banks and other deposit-taking banks to the private sector divided by GDP helps to identify the measure of banking development and where the financial system allocates capital. Net domestic credit is the sum of net claims on the central government and other sectors of the domestic economy. Net lending represents net commercial bank lending and other private credits.

Stock Market Development Indicators. Market capitalisation of listed domestic companies is a measure of the stock market's size as a ratio of the market price (share price times the number of shares outstanding for listed domestic companies) to GDP excluding investment funds, unit trusts, and companies hold shares of other listed companies.

Two related measures of market liquidity were used. The growth of the physical capital, productivity, and real per capita gross domestic product

is a golden consequence of the stock market liquidity (Levine, Zervos, 1998). Stocks traded, turnover ratio of domestic shares, percent is the value of domestic shares traded divided by their market capitalisation. Stocks traded, total value, percent of GDP is the total number of shares traded, both domestic and foreign, multiplied by their respective matching prices divided by GDP. Data values at the end of the year is a relative measure of traded domestic equities to the size of the market that can be used as an indicator of low transactions costs and relations between the size and liquidity of the stock market. Listed domestic companies, total represents companies admitted to listing and admitted to trading.

Control variables were chosen due to the results of the empirical researches of determinants of Kazakhstan's economy growth: Brent Oil Price; Gross National Savings, expressed as a ratio of gross national savings to GDP presents gross disposable income less final consumption expenditure with pension funds adjustment (in local currency); Total Investments or Gross capital formation measured as a ratio of total investment and GDP (in local currency), estimating the total value of the gross fixed capital formation with changes in inventories and acquisitions.

To determine the explanatory power of the variables in the series, stepwise regression analysis was performed. This section presents the results of the various estimations: descriptive statistics, tests for multicollinearity and stationarity have been done.

The results of the descriptive statistics are presented in Table 1. As can be seen from the Table 1 and Fig. 1, the GDP growth per capita of Kazakhstan in the period 1994–2017 shows high volatility of this indicator.

Table 1

Summary statistics of 24 valid observations from 1994 to 2017

	GROWTH	BANK CREDIT	NET D CREDIT	C BANK LENDING	MARKET CAP
	Y	X_1	X_2	X_3	X_4
Mean	0.043	27.598	6.4333e+12	5.7885e+09	14.558
Median	0.036	28.106	4.0306e+12	4.9238e+09	10.730
Minimum	-0.068	5.117	9.6834e+10	6.2024e+07	1.250
Maximum	0.128	58.938	1.8364e+13	1.9553e+10	53.934
Ss. deviation	0.045	15.710	6.6555e+12	5.3624e+09	12.823
C.V.	1.044	0.569	1.035	0.926	0.881
Skewness	-0.335	0.101	0.534	0.717	1.525
Ex.kurtosis	-0.069	-0.889	-1.181	-0.278	2.021
5 % presntll	-0.057	5.122	9.9810e+10	7.8333e+07	1.508
95 % persntl	0.122	56.770	1.8322e+13	1.7734e+10	50.316
IIQR	0.065	23.527	1.1906e+13	9.9525e+09	13.495

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	TUR-NOVER R	STOCK TRADED	LISTED COMP	OIL PRICE	SAVINGS	TOTAL INVESTM
	X_5	X_6	X_7	X_8	X_9	X_{10}
Mean	6.24	1.19	53.958	52.933	23.500	25.334
Median	2.37	0.37	64.500	48.200	24.978	26.050
Minimum	0.05	0.01	11.000	12.700	10.403	15.599
Maximum	25.8	8.59	90.000	121.40	32.190	35.527
Ss. deviation	7.48	1.92	25.713	34.536	5.801	5.391
C.V.	1.20	1.61	0.477	0.652	0.247	0.213
Skewness	1.38	2.62	-0.656	0.594	-0.818	-0.365
Ex.kurtosis	0.59	7.32	-0.972	-0.946	-0.013	-0.402
5 % presntll	0.06	0.02	11.000	13.475	10.835	15.65
95 % persntl	24.8	7.37	88.750	118.80	32.000	35.12
IIQR	7.80	1.64	41.500	56.400	6.615	5.623



Fig. 1. GDP Growth per Capita, 2010 (Y) (source: author's development)

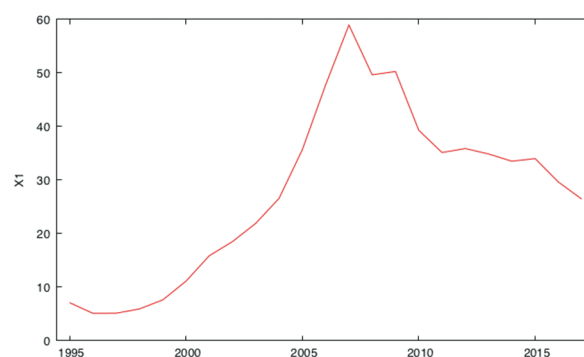


Fig. 2. Domestic credit to private sector by banks, % of GDP (X_1) Source: author's development

Its maximum positive value was 12.8 % in 2001; the minimum was -2.3 % in 1996, with negative values in 1996, 1998–1999 and 2015–2016 in the corridor from -0.3 % to -6.8 %, which corresponds to periods of both national and global financial and economic crises. The average annual growth rate is 4.3 % per year.

The role of the banking sector in financing private sector between 1994 and 2006 was expanding rapidly, peaking in 2007 at 58.9 % of GDP by attracting cheap external funding (Fig. 2). However, the global financial crisis has had a shocking ef-

fect on Kazakhstan's financial intermediation system. In the period 2009–2017, lending steadily declined, reaching a minimum of 26.5 % of GDP.

The reason for this situation is the large volume of non-performing loans, which have a significant negative impact on the stability of second-tier banks. It is worth noting that the trend and dynamic of Net domestic credit and Commercial bank and other lending's differ significantly (Fig. 3, 4). As can be seen, there is an ultimate clear upward trend in the former in contrast with the latter where the trend is multidirectional and ambiguous.

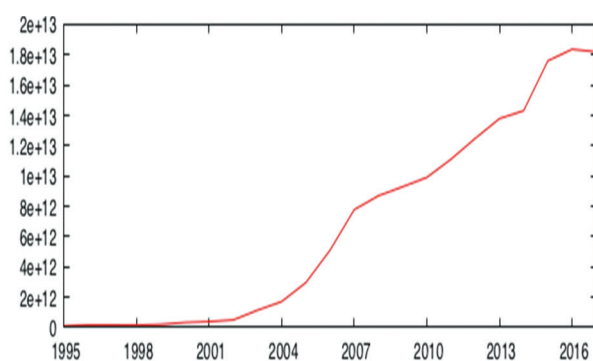


Fig. 3. Net domestic credit, KZT (X_2)

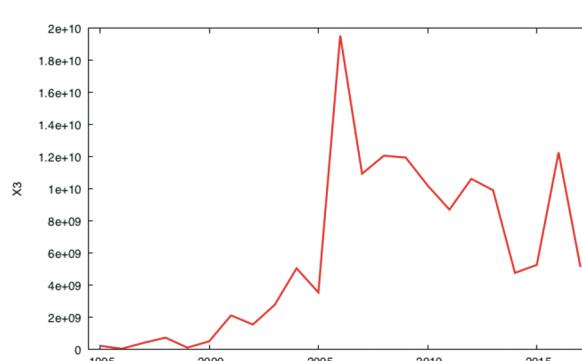


Fig. 4. Commercial bank lending, USD (X_3)

Source: author's development

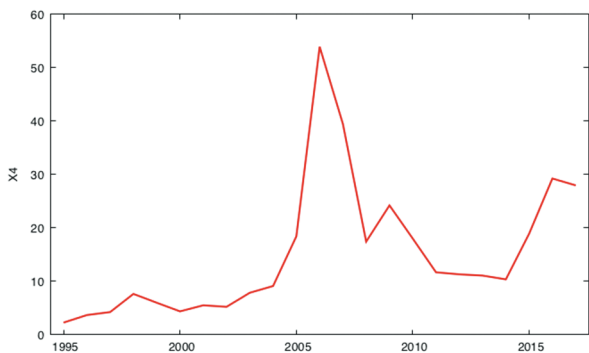


Fig. 5. Market capitalisation, % of GDP (X_4) (source: author's development)

There are some reasons for that: net domestic lending is in the national currency (KZT), the devaluation of that happened in that period from 7 to 383 tenge for 1 USD. Commercial and other lending is presented in USD, that let us see the real picture of the situation which is generally similar to the Bank Credit indicator in the percentage of GDP: after the speedy growth from 1994 to 2006 by 19,5 bln. USD, indicator experienced a decrease in 5,4 bln. USD in the 2017 year.

The capital market of Kazakhstan can be characterised as a market with low depth and efficiency, high volatility and different types of risks. The charts of market's indicators demonstrate some peaks in capitalisation (Fig. 4). A maximal value in the market capitalisation is 53.9 % of GDP

was reached in 2006 followed by moderate figures at 19.9 % on average in the next 10-year period with standard deviation in 12.8 percentile.

Turnover ratio and stock traded of total value between 2005–2010 years followed by a rapid and deep decrease (Fig. 5, 6). A turnover ratio of domestic shares experienced a high level of volatility with two peak values: 25.78 % in 2004 and 21.76 % in 2007, with following a decrease in 2006 by 5.58 % and slow pace after 2010. The mean value is 6.24 % with a standard deviation 7.48. The historical data of stock traded total value has the same pattern as market capitalisation with a maximum value of 8.59 % of GDP in 2006 and a speedy decrease after that in 2010. Period 2011–2017 had a low dynamic of around 1 % of GDP under the mean value.

The number of listed companies experienced steady growth during the whole period from 11 to 90 (Fig. 7). Based on this short analysis, this paper claims that Kazakhstan's capital market is underdeveloped but has a great potential to grow.

The Kazakhstani economy is based on the extraction of raw materials and, therefore, is heavily dependent on world commodity prices. Oil resources are the main source of well-being and stability of the state, however, the decline in world prices for these resources has a shocking effect on the stability of economic development (Fig. 8).

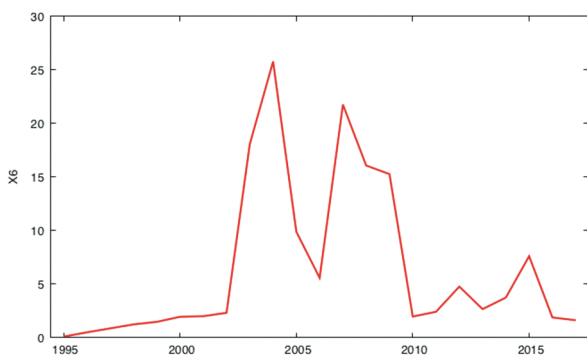


Fig. 6. Turnover ratio of domestic shares, % of GDP (X_6)

Source: author's development

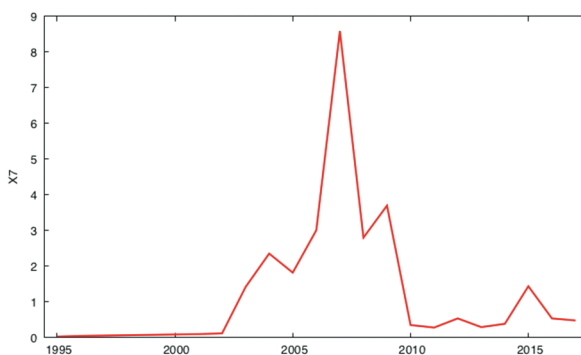


Fig. 7. Stocks traded, total value, % of GDP (X_7)

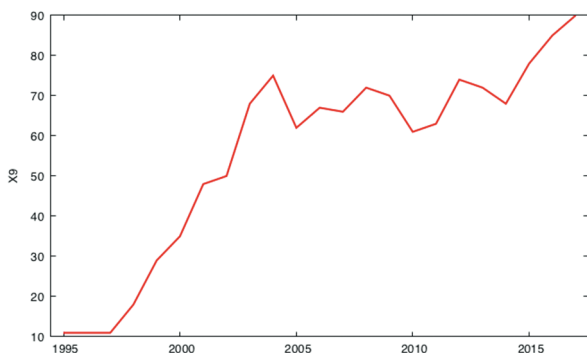


Fig. 8. Listed domestic companies, total numbers (X_9)

Source: author's development

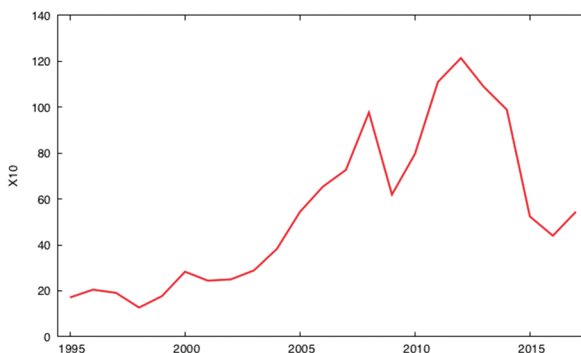


Fig. 9. Brent Oil Price, USD (X_{10})

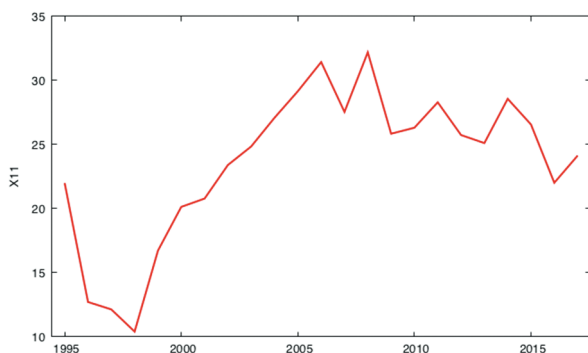


Fig. 10. Gross National Savings, % of GDP (X_9)

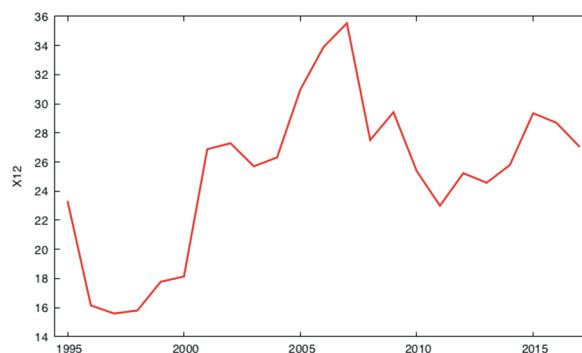


Fig. 11. Total Investments, % of GDP (X_{10})

Source: author's development

The maximum value of national savings over 23 years of the sovereignty of Kazakhstan did not exceed 34 % of GDP with an average value of 25.3 % (Fig. 9). A steady upward trend in the period 1994–2006 was replaced by a downward trend with high volatility values.

Kazakhstan is a leader in attracting investment among the countries of Central Asia and the countries of the Commonwealth of Independent States. On the one hand, this is the result of the government's efforts to create a favourable investment climate, and on the other hand, it characterises the high demand of the economy for resources and the restrictions on the availability of domestic financial resources. The volume of investments in the analysed period ranged from 15.6 to 35.5 %

of GDP, with an average value of 25.3 % of GDP (Fig 10).

Due to the many regressors that were used to find the relationship between economic growth and the financial sector, it was tested whether there was a multicollinearity problem. As can be seen from the Correlation Matrix (Table 2), due to the evidence of multicollinearity (values of pair correlation coefficients are above 0.8–0.9) X_3 and X_5 variables was excluded from the further analysis.

Detection of the time series stationarity is checked through the presence of a unit root test by using the Dickey-Fuller generalised least square (GLS) test developed by Elliot, Rothenberg and Stock (1996) that is preferable for a small sample size.

According to Table 3, the only GDP per CAPITA GROWTH, TURNOVER RATIO and BRENT OIL PRICE are stationary at their level and significant at a minimum of 5 % of confidence, suggesting that all other variables need transformation before estimation. Other variables became stationary after data transformation by differencing them at first level excluding variable. NET DOMESTIC CREDIT as non-stationary at the first level was excluded from our next step of the analysis.

Table 2

Correlation matrix for coefficients, using the observations from 1994 to 2017

X_1	X_2	X_3	X_4	X_5	
1.0000	0.5625	0.8395	0.7208	0.5375	X_1
	1.0000	0.5844	0.4737	0.0071	X_2
		1.0000	0.8216	0.3174	X_3
			1.0000	0.3074	X_4
				1.0000	X_5
X_6	X_7	X_8	X_9	X_{10}	
0.7146	0.7137	0.7240	0.8351	0.7949	X_1
0.1191	0.7675	0.6858	0.4808	0.3941	X_2
0.5144	0.6868	0.6962	0.6785	0.6237	X_3
0.6581	0.5874	0.3566	0.5330	0.6919	X_4
0.7611	0.4685	0.1781	0.4998	0.4798	X_5
1.0000	0.3693	0.2452	0.4649	0.6425	X_6
	1.0000	0.6499	0.7560	0.6421	X_7
		1.0000	0.6875	0.3589	X_8
			1.0000	0.7946	X_9
				1.0000	X_{10}

Note: 5 % critical value (two-tailed) = 0.4044 for $n = 24$.

Results

The regression analysis now follows the unit root tests. The degree of the determinism of variations of the criterial (dependent) variable by using predictors (independent variables) was checked in order to predict the values of the dependent variable through independent variables and determine the contribution of individual independent variables to the variation of the dependent. As independent variables are stationary at their level or their first difference, the GLS model can be used to test regression to avoid some problems with heteroscedasticity and autocorrelation.

After testing the regression by including only the independent variables of the financial insti-

Unit Root Test: Augmented Dickey-Fuller test with constant testing down from 6 lags

Name of parameters	Code	Type of test	At the Level of variable		At the first difference of a variable	
			test statistic: tau_c(1)	p-value	test statistic: tau_c(1)	p-value
GDP Per CAPITA GROWTH	Y	c&t	-3.49183	0.04019	—	—
BANK CREDIT, % GDP	X ₁	cnst	-2.23563	0.1937	-4.19719	0.0039
NET DOMESTIC CREDIT, USD	X ₂	c&t	-2.82351	0.1886	-0.83596	0.9611
MARKET CAP, % GDP	X ₄	cnst	-2.02109	0.2763	-4.46298	0.00022
TURNOVER RATIO, %	X ₅	cnst	-4.71149	7.65e-05	—	—
STOCK TRADED VALUE, % GDP	X ₆	cnst	-2.66283	0.09565	-6.95367	8.006e-006
LISTED DOMESTIC COMPANIES, N	X ₇	c&t	-3.93106	0.0109	—	—
BRENT OIL PRICE, USD	X ₈	cnst	-3.62952	0.05248	—	—
TOTAL INVESTMENTS, % to GDP	X ₁₀	cnst	-1.71673	0.41	-4.12338	0.00456

Notes: Criterion AIC, sample size 22. Unit-root null hypothesis: $\alpha = 1$.

Using the test, probabilities are computed assuming asymptotic normality. Automatic selection of 6 lags; automatic lag length selection based on SIC: 0-5. We used different types of the ADF test: with constant (cnst) and with constant and trend. (c&t). The choice has been done based on the time series plot. Asymptotic p -value $< L$ Indicates that we reject the null hypothesis of unit root at 5 % of confidence.

Table 4

GLS Model for the observations from 1995 to 2017 (T = 23)

Independent Variables	Code	Statistic output		
		coefficient	t-ratio	p-value
BANK CREDIT	X ₁	0.00451694	5.774	(0.000782)***
TURNOVER RATIO	X ₅	0.00355226	4.894	(0.0007258)***
STOCK TRADED T. V.	d_X ₆	-0.0166781	-5.545	(0.003007)***
OIL PRICE	X ₈	0.00127571	9.785	(0.0001303)***
TOTAL INVESTMENTS	d_X ₁₀	0.00431234	2.226	(0.001937)**

Notes: Dependent variable: GDP Growth; Const — 0.0425897 (0.00261886)***.

Statistics based on the weighted data: Goodness of fit statistic: R-squared — 0.980293; Adjusted R-squared-0.974496; F-test (5, 17) 169.1242***; Log-likelihood- (-38.43425); Akaike criterion: 88.86850; Schwarz criterion: 95.68146; Hannan-Quinn: 90.58194; rho: 0.091293; Durbin-Watson: 1.813528; Robust standard errors are in parentheses (*p < 0.1; **p < 0.05; ***p < 0.01).

tution and the financial market, we got a statistically significant model¹. The sequential inclusion in the regression of control variables (Oil Price and Total Investments) showed their significance for the dependent variable (Growth) and retained the importance of BANK Credit variable for the regression. The inclusion in the regression of two control variables simultaneously significantly changed the statistical results². After some iterations of consecutive exclusion of the independent variables (Market Cap and Listed domestic compa-

nies) with a low level of significance from the regression equation, the best Model with the highest Adjusted R-squared was found (Table 4).

Thus, the results of the regression analysis allow us to draw the following conclusions:

(1) Convincing evidence was found that the most important factors of economic development are the price of oil and the total volume of investments that ensure the flow of financial resources into the country's economy and thereby predetermine the speed of its development. Moreover, the influence of each of these variables on the economic growth of Kazakhstan is significant, however, with the simultaneous influence of these factors, a synergistic effect arises, which is manifested in a significant improvement in the parameter of the model.

(2) The banking sector, which provides loans to the private sector, and the stock market play a secondary, auxiliary role in economic development, providing a transmission mechanism for fi-

¹ F-statistic (5.797590)***; goodness of fit statistic 0.630338 and Adjusted R-squared 0.521614. However, only the constant (7.182)***, the variable BANK Credit (4.941)*** and TURNOVER Ratio (-1.790)* t-ratios were statistically significant.

² F-statistics (106.4276)***; R-squared 0.980263; adjusted R-squared 0.971052. The statistical significance of all other independent variables increased at different levels of confidence excluding the variable of Market Capitalisation (t-ratio — 0.7585) with confidence interval below 10 %.

Table 5

Granger causality test (1994–2017)

Number of observations		Granger causality statistic				
		22	21	20	19	18
Variables		Lag_1	Lag_2	Lag_3	Lag_4	Lag_5
Bank Credit	Growth	3.53577	1.22588	(5.86448) ^{***}	(4.50679) ^{***}	(4.40600) ^{**}
Growth	Bank Credit	(10.583) ^{***}	2.53353	0.98847	1.24189	1.42149
Turnover Ratio	Growth	0.35587	0.10851	0.20131	2.93332	(2.95676) [*]
Growth	Turnover Ratio	(4.42597) ^{**}	(4.16934) ^{**}	(4.85648) ^{**}	(6.47454) ^{***}	(6.32220) [*]
Stock Traded	Growth	1.54400	0.48891	2.36705	2.39376	1.70746
Growth	Stock Traded	2.57772	1.97971	1.23719	0.71408	0.51055
Oil Price	Growth	(6.24131) ^{**}	1.63745	(4.17472) ^{**}	(4.27568) ^{***}	(3.23986) [*]
Growth	Oil Price	0.77729	0.34196	1.13672	0.63159	0.63229
Investment	Growth	1.04731	1.31309	(3.35855) ^{**}	1.64771	0.86357
Growth	Investment	(8.39911) ^{***}	1.55647	0.62512	2.17312	2.26722

Notes: *F*-statistics are in parentheses. ^{*} $p < 0.1$; ^{**} $p < 0.05$; ^{***} $p < 0.01$; The Granger Causality test is conducted with a lag of 5.

nancing the economy. Besides, as the output data of the model confirm, the influence of the banking sector in comparison with the stock market is significantly higher, which is confirmed by statistical data.

(3) Simulations have shown that market capitalisation and the number of companies listed on the stock exchange do not have a significant impact on economic growth due to low liquidity and insufficient depth of the stock market.

Further, having confirmed the relationship between economic growth and individual indicators of the development of the financial market, we consider it important to identify the type of causal relationship between the variables. Table 5 presents the results of the causality test with a lag of 5.

Economic growth increases the economy's need for financial resources, which has a statistically significant impact on the development of bank loans and investments, but only during the first economic cycle. The reverse causal effect of bank lending to the private sector and investment in Kazakhstan's economic growth is weak. However, as the economy grows, the causal relationship strengthens: bank credit (lag 3–5) and investment (lag 3) become a source of economic growth.

With regard to the capital market, an unambiguous and statistically significant effect of economic growth on capital market turnover was revealed. At the same time, the opposite positive impact of the capital market turnover on economic growth occurs only at lag 5 with a 90 % probability. Unfortunately, there was no evidence of a causal relationship between the volume of traded shares and economic growth.

Moreover, as the report shows, the oil price has a strong impact on the economic growth of

Kazakhstan over the entire research horizon (lags 1–5), which confirms the importance of this factor. Thus, we can conclude that causal relationships are mainly unidirectional, demonstrating the impact of economic growth, investment and oil prices on the development of the financial market in Kazakhstan, which confirms Patrick's hypothesis of "the follow-up to demand" for countries with transitional economies.

Conclusions

The study of the relationship between economic growth and the financial sector has been developing since the beginning of the 20th century, but the greatest interest of scientists in it was manifested as a result of financial globalisation. Several studies have shown that financial institutions and markets, through their activities, have a dominant influence on the economy, society and sustainable development. Nevertheless, this statement is true for economies that have reached a certain level of development. For countries with economies in transition, achievement of a significant level of economic growth is a prerequisite for the formation of a stable capital market and banking system, that can subsequently have a significant positive impact on economic growth. In this case, the financial system, providing greater liquidity and improving access to financial resources through the creation of investment instruments, will be also providing better returns for shareholders, stimulating investment.

For Kazakhstan, the search for economic policy priorities is relevant due to limited financial resources. At the moment, systemic and structural problems remain, as well as vulnerability to external shocks, which requires solving the problems of sectoral diversification of the economy and sta-

ble operation of the financial sector. The banking sector, historically the main vehicle for converting savings into investment, has shrunk significantly over the past decade. The indicator of its total assets in GDP fell by half from 90 to 44.5 %. The financial market, despite the efforts to develop it, remains unstable and risky.

Therefore, this study aimed to examine the relationship between economic growth and financial intermediaries in Kazakhstan. The results demonstrated the importance of various components of the financial market and confirmed the profile of Kazakhstan's economy by showing that world oil prices and total investment are the most powerful factors influencing economic growth. The influence of the financial sector appears only after these variables are included in the regression equation. Besides, the main contribution to this study is the result showing that the direction of causation for Kazakhstan comes from economic growth towards the development of the local financial market. Thus, the "demand following" hypothesis was proved, confirming the assumption that economic growth is the driving force behind the development of Kazakhstan's financial market, contrary to the postulate that the development of a financial intermediary stimulates economic growth.

This indicates that, at this stage, the financial sector does not stimulate the economic development of Kazakhstan, but rather the economic growth based on oil production and export is a

catalyst for the development of the financial sector. Therefore, the key difference in the priority of impact lies in the level of economic development of the country.

In this regard, we consider it possible to formulate the following conclusions:

- maintaining and increasing the growth rates of investments in the economy of Kazakhstan is an important growth factor, provided that the efficiency of their transformation into capital grows, which should become a priority of the state investment policy;

- a high level of dependence of Kazakhstan's economy on world oil prices requires a change in its structure in favour of the development of industries with a high share of added value, including the creation of the latest infrastructure of the financial sector;

- stabilisation of the banking system and development of the financial market should improve the transmission mechanism for transferring financial resources to the economy while stimulating the growth and efficiency of the financial intermediation system.

We believe that these measures will accelerate the transformation process and the transition to the "feedback hypothesis" as a concept of synergy in the development of the economy and financial market to mobilise the volume of domestic and international investment sufficient to ensure sustainable growth of the country.

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