



Statistical Analysis of the Effects of the Global Financial Crisis in Kosovo

Artan Nimani¹, Valbona Zeqiraj²

Abstract: The global financial crisis means the emergence of financial problems in the economy, eroding the economic and financial potential of various countries. Our generation is witnessing one of the biggest economic crises in history, where we have seen how one big financial institution goes bankrupt one after another or how the “Domino Effect” operates, about which until now we had heard and had read only in texts. Kosovo has gone through various difficulties, both financial and numerous economic constraints, which have brought for many years its unresolved status for many years. Hence the emergence of the financial crisis found the country's economy unstable and powerless on the verge of Independence. The main channels through which the crisis affected the economy of Kosovo are: revenues from abroad, mainly remittances and foreign direct investment which decreased during this period. The global financial crisis and family reunification are the main factors reducing the amount of remittances in the country. Other factors such as low wages, job insecurity, socio-economic situation and consumption, have an impact but are mainly related to the crisis and are its derivatives. The analysis that compares how remittances are positioned against other factors of the FDI crisis, savings, wages, unemployment, etc., highlights the role of each indicator and all together in the domestic economy. However, this will not apply to foreign investment because in the last six years, the biggest concern is the very sharp decline in the amount of FDI in Kosovo, which has been reduced by up to 29%. This shows a not very interesting option of attracting foreign investment in the country and shows signs of an economy where living standards and consumption are closely related to the contribution of the diaspora, as an important category in the economic life of the country. The decline in exports, which were already low, and the low rate of production, negatively affected the economic activity in the country and made Kosovo having a high trade deficit.

Keywords: Financial crisis; remittances; Kosovo; EU; IMF; WB

JEL Classification:

¹ University “Fehmi Agani” Gjakove, Republic of Kosovo, Address: M9-1, Gjakovë, Republic of Kosovo, Corresponding author: artan.nimani@uni-gjk.org.

² University “Kadri Zeka” Gjilan, Republic of Kosovo, Address: Str “Zija Shemsiu”, Gjilan 60000, Republic of Kosovo.

1. Introduction

Remittances and Foreign Direct Investment were most affected by the global financial crisis. But, wanting to research in detail, at the same time I will come to the argument of the connection between remittances and the financial crisis, or exactly why the financial crisis was reflected in the reduction of remittances and foreign direct investment in Kosovo. Always based on research, I want to give a scientific answer as to whether there is a link between the mass and amount of remittances and the crisis, whether there is a link between remittances and family reunification or the completion of families that our immigrants have made during our analysis, are the causes of insecurity and low wages factors in the decline in the amount of money our emigrants send? Also, in this research I have used questionnaires that have other questions on the quantity, height, shape and channels of sending remittances.

The answers received give us to understand that remittances come mainly informally or manually (over 75%) and this is a strong basis that this money affects informality and a not very reliable measure of their real power. However, the aim of this paper is to argue the H1 hypothesis. The global financial crisis has affected Kosovo, slowed remittances and has directly affected the reduction of foreign direct investment in Kosovo.

Based on the factual findings, on a scientific basis we argue this hypothesis and ascertain the connection of the global financial crisis with remittances (Nimani, 2015).

The analysis of the questionnaires showed that the main factors that affect the level of remittances are:

1. Financial crisis or state of the economy in the host country;
2. Family reunification or family growth;
3. Job insecurity and wages;
4. Increasing the cost of living, especially the education of children;
5. Lack of work permits and crime.

The impact of the global financial crisis in Kosovo

Through dynamic analysis, specifically the trend method, we take into account the year 2008, a time when the financial crisis was on the borders of the countries of origin from where remittances come. It should be noted that 2008 was a very successful year in terms of remittances, if we compare it with the previous year 2007 (which had an 18.1% increase compared to 2007).

In 2009 we had a decrease of 3.8% in remittances compared to 2008, which in monetary terms falls to € 23.2 million less recorded revenues. In 2010 there was a

decrease of about 0.24% compared to 2009, which calculated in monetary terms falls to 370 thousand € less revenues recorded. This is the period when the economic crisis continued in developed countries, which had and continues to have an impact to this day on the value of remittances sent to Kosovo.

In 2011 there was a very slight increase in remittances compared to 2010. Increasing trends are also for 2012, where during this year the amount of remittances increased by 3.6% compared to a year ago. All these data can be best seen from the Figure above and in the relevant table, which shows the performance of remittances from 2008 to 2013.

Based on the statistical analysis used in this part of the paper, based on the table of contingency, basic calculation and use of Hi-square test, slide mean method and trend method ($Y_i = Y_c$), we will come to statistical conclusions.

Which argue the previous hypotheses that:

1. The global financial crisis and family reunification are the main factors reducing the amount of remittances in the country
2. Other factors such as: low wages, job insecurity, socio-economic situation and consumption, have an impact but are mainly related to the crisis and are its derivatives
3. The analysis that compares how remittances are positioned against other factors of the FDI crisis, savings, wealth, etc., highlights the role of each indicator and all together in the domestic economy
4. Remittances, in recent years of our analysis, have begun to improve significantly and we can conclude that 2012 and 2013 have a significant increase in the amount of remittances and have improved their trend in general
5. However, this will not apply to foreign investment because in the last six years, the biggest concern is the very sharp decline in the amount of FDI in Kosovo, which has been reduced by 29%. This shows a not very interesting option of attracting foreign investment in the country and at the same time shows signs of an economy where living standards and consumption are closely linked to the contribution of the diaspora, as an important category in the economic life of the country.

1. FDI analysis through sliding average, MA Model

Foreign direct investment (FDI) in 2007 was higher (€ 440.7 million) and the in other years we immediately have large declines, so it has marked a significant decline every year since that year. Therefore, our orientation in this paper was to measure this movement and its impact on the economy of Kosovo (Nimani, 2015). To clarify our study, we first calculate with 3 data using the sliding mean method:

$$m_1 = \frac{x_1 + x_2 + x_3}{3} = \frac{366.45 + 287.41 + 365.8}{3} = \frac{1019.66}{3} = 339.89$$

$$m_2 = \frac{x_2 + x_3 + x_4}{3} = \frac{287.41 + 365.80 + 393.86}{3} = \frac{1047.07}{3} = 349.02$$

$$m_3 = \frac{x_3 + x_4 + x_5}{3} = \frac{365.80 + 393.86 + 228.64}{3} = \frac{988.30}{3} = 329.43$$

$$m_4 = \frac{x_4 + x_5 + x_6}{3} = \frac{393.86 + 228.64 + 259.02}{3} = \frac{881.52}{3} = 293.84$$

Also, the sliding average with 5 data is calculated and the results are incorporated in the following table:

$$m_1 = \frac{x_1 + x_2 + x_3 + x_4 + x_5}{5} = \frac{366.45 + 287.41 + 365.80 + 396.86 + 228.64}{5} = \frac{1642.16}{5} = 328.43$$

$$m_2 = \frac{x_2 + x_3 + x_4 + x_5 + x_6}{5} = \frac{287.41 + 365.80 + 396.86 + 228.64 + 259.02}{5} = \frac{1534.73}{5} = 306.95$$

Table 1. Calculation through the Sliding Average for FDI¹

Year	Data FDI in million €	Sliding average level	
		With 3 data	With 5 data
2008	366.45	-	-
2009	287.41	339.89	-
2010	365.8	349.02	328.43
2011	393.86	329.43	306.95
2012	228.64	293.84	-
2013	259.02	-	-
Average X= FDI/n		328.04	317.69

Source: Author's

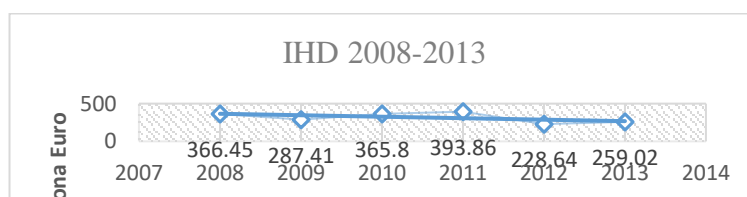


Figure 5. FDI in Kosovo during the Global Financial Crisis

¹ Foreign direct investment (FDI)

Source: Data from CBK¹ 2014

If we take into account the year 2008 when we have the first reflections of the global financial crisis in Europe, and results from the MA Model, we can see that we have a decrease in the average investment for 3 years (2008, 2009, 2010) from 608.72 million euros at an average of 592.92 million euros.

Also, if we take the average for 5 years from the base year (2008 = 2008, 2009, 2010, 2011, 2012), then we can see that we have a decrease of 14.89 million euros in the crisis period that we have analyzed.

This would look like this:

1. For the level of the sliding average with 3 series (2008 - MA3): FDI for the base year 2008 = 366.45 million € - 328.04 million € = 38.41 million €, so on average € 38.41 million less investments
2. For the level of the sliding average with 5 series (2008 - MA5): FDI for the base year 2008 = € 366.45 million - € 317.69 million = € 48.76 million, i.e. on average € 48.64 million less investments
3. Through the Variation Width method, where the maximum minus the minimum revenue is presented, FDI will look like this: million €

2. Calculation of FDI through Absolute and Relative Indicators of Variation

From the FDI data we will calculate the Absolute Indicators of variation, for the analyzed years of the period 2008 - 2013, a time when the financial crisis left its mark.

Table 13. Absolute Variation Indicators for FDI in Kosovo in Millions of Euros

Year	Data FDI in million €	$(x_i - \bar{x})$	$(x_i - \bar{x})^2$
2008	366.45	49.59	2458.84
2009	287.41	-29.45	867.50
2010	365.80	48.94	2394.80
2011	393.86	77.00	5928.49
2012	228.64	-88.22	7783.36
2013	259.02	-57.84	3345.85
Total	1901.18	0.00	22778.83

Source: Data processed by the author, (CBK)

¹ Central Bank of Kosovo

The mean quadratic deviation, or variance, represents the average size of the square deviations of the data from the arithmetic mean. The variance ranges from 0 to $+\infty$ and is denoted by the lower case sigma.

From this we conclude that the string of numbers is homogeneous (the mean value better represents that string) because the first string has a smaller absolute mean deviation than the second string. In order to be able to calculate the indicators of variation, one must first find the arithmetic mean. Here we have:

$$\bar{x} = \frac{\sum xi}{n} = \frac{1901.18}{6} = 316.86 \text{ milEuro}$$

To avoid calculations with absolute value it has been shown more convenient to take the mean square of the deviation of the values x_1, x_2, x from the measure of the deviation of the values of the characteristic x from the arithmetic mean, and this will give these results:

$$\sigma^2 = \frac{\sum(x_i - \bar{x})^2}{n} = \frac{22778.83}{6} = 3796.47$$

Whereas, to see what the standard deviation is, then we use its formula, where the value of variance is entered in the square root, so the standard deviation for FDI during the period 2008-2013 will look like this:

$$\sigma = \sqrt{\frac{\sum(x_i - \bar{x})^2}{n}} = \sqrt{\frac{22778.83}{6}} = \sqrt{3796.47} = 61.61$$

Dispersion is the standard deviation multiplied by the square root of the double ((2) 0.5). Through dispersion the average linear deviations are compared with those of average sizes. In the data on FDI in Kosovo during the years 2008 - 2013 we will have:

$$\delta = \sigma \cdot \sqrt{2} = 61.61 \cdot 1.414 = 87.12 \text{ million euro}$$

The coefficient of variance is a relative indicator which expresses the relative magnitude of the ratio between the standard deviation and the arithmetic mean of the mass phenomenon. Depending on the characteristics of the phenomenon and the purpose of statistical analysis, the coefficient of variance is expressed in simple form as a coefficient or as a numerical quantity in percentage. From the analysis of FDI in Kosovo we will have:

$$Kv = \frac{\delta}{\bar{x}} = \frac{87.12}{316.83} = 0.275 \text{ as coefficient expressed as a percentage}$$

$$Kv = \frac{\delta}{\bar{x}} = \frac{61.61}{316.83} = 0.1944 \cdot 100 = 19.44\%$$

From this calculation model, it is observed that the height of the coefficient of variance is conditioned by the magnitude of the variance, respectively the standard deviation.

The coefficient obtained as a result of the arithmetic mean ratio, shows the average deviation of the feature which is 19.44% of the arithmetic mean.

3. Calculation of FDI through Basic Indices

For the study of the dynamics of different phenomena and the comparison between them, relative indicators called indices are mostly used. Indices compare data from different time periods and similar statistical phenomena. Indices express the ratio of certain levels of a phenomenon in different time periods (Meka, 2010). Indices, then, since they express the ratio between two quantities, then they are relative quantities that are usually expressed as a percentage. In this paper, to come to a clearer result, I used the base index method, which presents the ratio of the time series level to the time series level chosen as the comparison basis. So all the data is put in relation to a level that we set in advance as a basis and we see the relative difference that exists between the different levels with that level taken as a basis.

The expression of the measure of variation in percentage adds value to this indicator, because it is more usable and understandable in the study of the variation of the mass phenomenon.

Table 14. Investment Value Index (2008 is base year)

Year	Data FDI in million €	Base index 2008	Change in 2008
2008	366.45	100.00	100.00
2009	287.41	78.43	-21.57
2010	365.80	99.82	-0.18
2011	393.86	107.48	7.48
2012	228.64	62.39	-37.61
2013	259.02	70.68	-29.32
Total	1901.18	-	-

Source: Data from the author

From this calculation it is clearly verified that we have a permanent decline throughout the time analyzed, taking into account 2008, when the global financial crisis is reflected in our country, with the exception of 2011 where we have a slight increase of 7.48%. So, this verifies the basic hypothesis that the financial crisis has affected FDI and there is a strong link between the crisis and investment. In our

context, we can conclude that urgent intervention needs to improve the image to convince potential investors to invest in Kosovo (Nimani, *New Fiscal Package in Kosovo and Its Impact on Economy*, 2019).

From this, we can conclude that:

1. One of the reasons for the significant decline during the period 2008 - 2010 can be attributed to the global financial crisis
2. It is also important to note that the privatization of public enterprises usually brings in larger amounts of foreign direct investment, so the decline can also be attributed to the end of the largest waves of privatization in the country.
3. The main reasons for the decline in FDI can mainly be attributed to the bad image of Kosovo, created by the high level of corruption (Corruption Perceptions Index ranks Kosovo 111th out of 177 positions with a result 33/100), extortion, organized crime, bureaucracy and other similar problems
4. Taking into account the year 2008 when the global financial crisis is reflected in our country, we have a continuous decline where the average decline in FDI is 16.24%, except for 2011 where we have a slight increase of 7.48%
5. Regarding the origin of FDI, European Union (EU) countries continue to be the main investors in Kosovo.

4. Discussion on the Main Findings

The main cause of the financial crisis has its beginnings in the bubble of the subprime mortgage market and the high failures in this credit market. Financial products have played a key role: collateralized securities and collateralized bond debt. The recent financial crisis was largely caused by the greed of financial institutions: banks and investment companies took great risks and were not transparent in their activity, as well as by eager borrowers who were not accountable to repayment of loans. Deregulation and unscrupulous regulatory institutions have created the right ground for the development of the crisis. Kosovo as a country that is still in transition, continues to face the effects of the global financial crisis and will face it in the coming years.

The basic element of this paper is the verification of pre-constructed hypotheses, where it is argued: Hypothesis that: "The global financial crisis has affected Kosovo", has slowed remittances and has directly affected the reduction of foreign direct investment in Kosovo; while the analysis confirms the other hypothesis that: "The global financial crisis has directly affected the economic transition and the privatization process in Kosovo." We can conclude that both hypotheses have been convincingly proven and the research questions posed have given their effect by

proving that the global financial crisis has affected Kosovo's economy and the transition phase.

The reasons for the spread of the financial and economic crisis in Europe may be the weaknesses of Europe's political integration. It should also be noted that the lack of supervisory rules, lack of fiscal and banking unification, mortgage lending and lack of common budget policies are among the causes that have influenced the spread of the financial and economic crisis in Europe. While the economy of Kosovo, according to the analysis made in this paper, it turns out that it is not in a good economic position. There are many problems such as: high unemployment, poverty, corruption and lack of law enforcement. The widespread financial and economic crisis in Europe has also affected the economy of Kosovo, but to a lesser extent, i.e. it has indirectly affected. The crisis has had a major impact on declining foreign investment, diaspora income and declining exports. Kosovo's economy has gone through various financial difficulties. There have also been numerous economic constraints that have brought for many years the unresolved status of Kosovo, for many years, until 2008 when it became an independent state. More needs to be done to create a sustainable economy, while the key to economic development and leading the country towards the EU is the quality of education, namely investing in preparing new generations (Irina Shaorshadze & Sachiko Miyata, 2010). Also in this regard, the governments and central banks of developed countries, were active in taking measures to stimulate economic activity in their countries and recently we are witnessing the first signs of an economic recovery in some economies.

5. Recommendation

Based on the analysis and conclusions of this study, we will try to give some recommendations to Kosovo institutions, businesses and researchers on these issues, as a modest contribution and a good basis to continue:

1. Kosovo with a relatively underdeveloped economy has been affected by the global financial crisis and to get out of it, investments in the sectors of the economy that guarantee employment, produce for domestic consumption and improve the trade balance must be stimulated at all costs, so build a strategy. at the national level, which will coordinate FDI and remittances towards sustainable development investments.
2. The Investment Promotion Agency should create a special national strategy for the citizens in the diaspora and inform them about the investment opportunities in Kosovo. This should be achieved through Embassies, consular offices, conferences, fairs, newsletters and direct contacts.

3. To establish funds for investments from the diaspora, as opportunities to concentrate investment resources, which are interested in contributing to the economic development of the country. Intensify and coordinate better communication between businessmen operating in different countries of the world, creating their database, which enables liaison with business associations in Kosovo.
4. Kosovo institutions should make greater efforts to improve the conditions and image for increasing foreign investment in the country, creating clear policies that ensure a political-economic stability and a favorable environment for investment.
5. Fighting corruption, tax evasion and transparency and correctness in the privatization process should be a priority of state institutions for the possibility of faster economic development of Kosovo.
6. Prohibit multiple employment in the public sector. This decision will create approximately 2,000 jobs. According to the Anti-Corruption Agency, in 2014 there were 1,900 employees in more than one job (Exactly: 1,555 people engaged in two jobs, 312 in three, 33 people hold four or more jobs in the public sector).
7. Banks to create a new product for promoting remittances and increase the number of branches or ATMs in rural centers, in order to persuade emigrants to use bank transfers for remittances.
8. We should not expect to integrate into the European Union to solve problems. We must do the opposite: solve problems such as poverty, unemployment, corruption and organized crime, which will enable an approximation with the EU.

References

- Irina Shaorshadze & Sachiko, Miyata (2010). *Foreign Remittances and Poverty Reduction in Kosovo*. Prishtine, Kosovo.
- Meka, E. (2010). *Financial crisis, summary of analyzes and essays*. Tirana Albania.
- Nimani, A. (2015). *The global financial crisis has affected Kosovo*. Tirana Albania: UET.
- Nimani, A. (2019). New Fiscal Package in Kosovo and Its Impact on Economy. *European Journal of Sustainable Development, Rome, Italy*, 7.