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Assessment of Factors Causing the Sovereign Default

Abstract

The aim of the study was to evaluate some of the factors, which are often thought about as causes of the sovereign default and to find out, if there are other factors influencing it. To this end, methods of analysis, comparison and deduction are used.. Analysed countries are such, with recent history of default. Using chosen methods, it was found out, that some of the factors, which are evaluated by rating agencies and international organizations, do not have influence on default likelihood. On the contrary, that probability is influenced by some other factors, which are not discussed so often.

Key words: Sovereign default, sovereign debt, economic and financial crisis.

JEL Classification: E32, E66, H12, H63.

Introduction

Few years back, for example, in the media, as well as in regular conversations, we could see the emerging economic crisis of the European countries and their higher or lower probability of failing to meet their obligations. Also, for politicians, this is a frequent topic by which they can set the course of the economic policy in one direction or the other. It may be worth remembering the crisis of the Greek sovereign

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debt. This was the first impulse to pursue this issue, because it was almost a dogma that Greek debts were disproportionately high, and if the Czech economic policy could not recognize any major changes, particularly in the area of debt reduction, they would meet the same fate.

The aim of this thesis is therefore to confirm or disprove the theory, if possible, based on the most accurate interpreted data and quality research done by world economists. The task is not to provide exhaustive answers to all the questions raised but rather to describe the possibility of another approach to looking at state bankruptcy.

The methods used are based on the description of given data and their comparison in time and space. Of course, theoretical principles will be used to understand the phenomena associated with these factors. The last of the methods used will be deduction and induction, which will aid the author to draw conclusions and above all to attempt to confirm or disprove the given hypothesis.

European Union has its own rules regarding economy of countries whose goal is to make sure these countries do not go through sovereign debt crisis which could lead to sovereign default. These rules are known as Convergence criteria and Stability and Growth pact.

1. Theory of Sovereign Default

Although the sovereign default is a relatively frequent issue from a historical point of view and perhaps more current than usual at present, it is quite overlooked in theory.

The definition given by the Universal Encyclopedia Universum for the word bankruptcy is *the insolvency of the debtor*. It also states that bankruptcy is a criminal offense if the debtor has caused it by being reckless, negligent or fraudulent. The origin of this word is generally recognized by the theory that it is a combination of two words from old Latin, namely *bancus* (bench or table) and *ruptus* (broken). Bankers at that time practiced trade on such benches and, in the event that they were unable to meet their obligations and continue their business, their benches were dismantled to mark their bankruptcy. Another possible explanation for the origin of the word is its origin in French from the words *banque route*, which could be freely translated as a sign on the table. This is derived from some of the French bankers'

experience when the only thing left after such banker was just the sign on the table where he ran his business (New Generation Research, Inc.).

In the case of sovereign default, Standard & Poor's defines it as inability to pay the principal or interest on the principal within the deadline agreed upon at the time of its creation. This occurs in one of two cases:

- in the case of government bonds or treasury bills issued in domestic or foreign currencies, provided that the debt service is not paid within the set deadline or a new agreement has been reached which has less favorable conditions for the lender than the original agreement,
- when the currency issued by the central bank changes and the debts are converted into a new currency, thus reducing their value (Borensztein, Panizza 2008).

The theory of the Austrian school is based primarily on the link between bankruptcy and the business cycle and assumes bad investment resulted from the bad policy of national central banks. According to this theory, the low interest rate (which is not created using market principles, but by the central bank intervention) and therefore very cheap money in times of economic growth leads to the development of inefficient investments and excessive consumption. It lasts until the opportunities for these investments and consumption are exhausted. This is followed by a period of economic downturn when these companies and states are paying for the misallocation of these investments, leading to default, as described by Mises (2006).

For endogenous money theory, there is an essential view of the so-called monetary multiplier in the economy. This theory perceives a big problem in the fact that most of the money in circulation is covered by a debt that arises when banks do not have 100% reserves of deposits placed in them. This then leads to the creation of uncovered money in circulation. Rothbard (2001) then argues that because money-making banks are out of the question, they are long gone bankrupt. But it will not be until the time when the lawful owners of the money are again interested in this money, the so-called run on the bank, and the banks almost overnight will appear in insolvency, which then spreads to the whole economy. With the decreasing amount of deposits, the monetary base is quickly sinking in the economy, so it is not only impossible to repay the debts, but later even the interest on these debts, and this leads to another wave of bankruptcies. The economy gets into a spiral which is very difficult to get out of.

However, we also know of the history of cases in which individual countries become insolvent for political reasons rather than for economic ones. This may occur, for example, because of warfare, or change of government, whether in a peaceful or violent manner. For example, this new government may not feel responsible for the commitments of its predecessors and therefore refuses to pay them. One of

the most famous of such cases is Russia where exactly this happened after Great October Revolution. Mexico after the revolution in 1914 is another example. Recently, this solution was once again up to date and noticeable in Greece, where the new government sought to negotiate with its debtor, by negotiating new conditions for repayment. A logical but not justifiable reason is then to expel government obligations to the countries which the country is in conflict with. For example, Bulgaria, Turkey and Austria-Hungary, at the beginning of the First World War, have used this move. Another reason for default can be the distrust of investors in the new government and the subsequent withdrawal of capital from the country, which results in such problems. Cesnak and Penev (2011) add that most defaults are internal or external to the country's economic problems, not political decisions. However, Reinhart and Rogoff (2013) oppose this view, pointing to the fact that more than half of sovereign defaults since 1970 occurred due to reluctance, rather than the inability of states to repay their commitments, and add that this situation in history is certainly not exceptional.

Equally serious and, in modern times, the more frequent reason for the default is badly implemented economic policy, whether fiscal or monetary. In fiscal terms, this is mainly a long overstatement of state expenditures over its revenues. In this case, the deficit of the state budget is covered by debt, in the best case domestic, in the worst foreign (Reinhart, Rogoff 2013). In the case of monetary policy, the reason for bankruptcy may be, for example, fixing the exchange rate for another currency at a rate that does not correspond to reality at all. Such solution then attracts speculators to the attacks on the currency, as demonstrated by, for example, Argentina, but also the Czech Republic (Krugman 2009) or the lack of control of inflation, which often leads to a depreciation of the currency value and in such way foreign debt becomes unmanageable (Cesnak, Penev 2011).

Interestingly, the question is whether, in terms of history, the worse implications of default are on domestic or foreign debt. Reinhart and Rogoff (2010) seek to find an answer to this question. However, they warn that it is not easy at all. The reason is that, unlike foreign defaults, domestic is relatively difficult to define. It can only be a default *de facto*. In the end, however, they have researched that default on foreign debt is relatively more damaging to the country. Probably the biggest problem is the fact that such default is far more visible, more thoroughly discussed by the media and cannot be hidden for home accounting and quietly dealt with by home creditors.

A country going through insolvency must inevitably face a slump of credibility. In short term, it certainly cannot avoid lower access to credit, and of course high interest rates if the loan is successful. In the long run, there is no noticeable reduction

in confidence if a country can meet the conditions under which debt restructuring and repayment of its debt have been processed.

Country affected by the defaults is in difficulty with the payment of pensions, various social support contributions or salaries of state employees. This often leads to a slump in consumption, followed by a rapid increase in unemployment and a consequent reduction in the standard of living. This whole process can lead to street riots, sometimes even violent and to the support of radical nationalist parties and the like.

If the debt was largely domestic and not foreign, then a large proportion of the population lost its savings, which again leads to a reduction in investment and domestic consumption, a reduction in GDP and living standards. In this situation, the state should pursue an expansive economic policy, but it is hands tied (Borenzstein, Panizza 2008) because of the very strict conditions of state debt restructuring.

Announcement of default will make it harder for the financial markets and for domestic entities. The default can trigger instability in the domestic banking system, which results in distrust of clients who start collecting their bank money in bulk. If the country was to be trusted, it could be a guaranty for banks, but in the event of default, the state would not be able to prevent this situation. This may result in a complete collapse of the banking system. In the event of default, confidence in the domestic currency will decrease and demand will decline, resulting in a weakening of the exchange rate. This process will increase the net debt of the country and the cost of its operation if denominated in a foreign currency (Cesnak, Penev 2011).

Bankruptcy may also lead to a loss of confidence in domestic financial institutions, especially under the assumption that most of the debt is made up of domestic loans. One of the biggest problems that may arise in this case is a bank run. This can happen because depositors will be afraid for their deposited money, which can result in large turbulence in the banking sector and in some cases even in a complete loss of bank ability to pay off their clients (Cesnak, Penev 2011). In addition, banks that hold many government bonds that are undergoing bankruptcy will find themselves in great trouble and in need to rethink their strategy. They can stop lending to the private sphere because of fears of debtors' insolvency, which would put them in even bigger problems (Borenzstein, Panizza 2008).

2. Analysis of Chosen Countries

In this part the macroeconomic data of individual countries that have recently gone through sovereign default will be analysed and compared. This analysis will be performed according to some of the factors used for rating created by Moody's rating agency, which are described in more detail above. Countries are selected from among those that have gone bankrupt since 1998, listed in Moody's (2008) and Moneybeat (2014).

Since 1998 more than dozen countries went through a certain phase of bankruptcy or restructuring, some of them even more than once. Table 1 lists these countries in the order in which their bankruptcy occurred. In addition, it shows the total amount of debt, which has been written-off.

An analysis of factors that may be involved in declaration of sovereign default will now be made. First, some factors which Moodys' agency uses for the evaluation of the ability to meet commitments, and then certain factors that the author thinks might have an impact on that fact.

First, as shown in Table 2 is average GDP growth. These data are averaged over the five years preceding the year of bankruptcy. The year itself is not included, mainly because the debt default event itself can significantly affect this indicator each year and could easily mislead the data and results.

As Table 2 shows, the values are very different and vary from a very significant fall in the case of the Russian Federation and Ukraine to the relatively high growth of Belize and Ecuador. It is to be remembered that Ukraine and Russia were going through the very wild transformation during the whole period of the 1990s, which was the main reason for such a sharp drop in gross domestic product and this cause had effect on the defaults of both countries. Excluding these values, observation can be made that in the clear majority of cases these are countries with GDP growth, and in some cases also quite high values, and even if we count these post-Soviet countries, then the count of monitored countries experiencing economic growth is higher than countries in economic decline.

For this reason, although it is a relatively small sample of data, it is obvious that this indicator itself is not of great value regarding the risk of bankruptcy in the country and its inclusion in the overall composition of the index must be subject to additional adjustments, just like those chosen by Moody's, such as adding of the rate of GDP growth volatility.

For GDP value as well as for GDP growth rate, data from years preceding the crisis are used for this indicator. However, the question arises as to whether it is appropriate to compare the individual countries with their GDP at nominal value if different time periods are concerned. Finally, the author decided to compare GDP at constant prices in 2005 and thus to use somewhat more authoritative data. The exception is data for the State of Jamaica, for which the GDP value at constant prices was not available and therefore a nominal GDP indicator is used.

After a brief look at the Table 2, it can be noticed that countries that are ranked by the raw GDP value as economically weaker are more vulnerable to defaults than large countries with big GDP. Large states can use their economic power to balance their debts, and they have the advantage of having a larger state budget than small and economically weak states. In such a large budget, money to repay debts is easier to find. Finally, it is still worth to mention the advantage of the big states in their negotiating position with creditors.

In Table 3 there is an index of government efficiency. This is a composite index, compiled yearly by the World Bank. Every component has values from -2.5 to $+2.5$, with the lower number meaning a worse result. From these data the world ranking is composed. Its aim is to evaluate the legal environment in the country, the efficiency of government and the level of corruption. Especially in the case described in Greece, it was clear that the level of corruption in the country, the inability of the country's government to promote law and respond flexibly and effectively to the problems could be a great burden for the state. Traditionally, in this respect, the best values are for example in the Scandinavian states, with their results approaching the value of 2. The opposite side of this ranking lists exclusively African countries, the result of which is close to -2 (WB, 2015b). Many economists agree that an appropriate and stable institutional environment in any given country is a key factor in economic growth and stability.

From this data it is possible to confirm this hypothesis, because most of the monitored states are below the average in the investigated areas, and in some cases even well below it. This is the main reason why the rescue loans granted by international institutions for the states in time of crisis are linked to the requirements for essential measures in the political and legal system of the state.

As far as this indicator is concerned, it is quite possible to say that there is a vast interdependence between government stability and the default risk in the country, and therefore it is recommended for this indicator to be included in the country's overall assessment.

The inflation rate, found in Table 2, is high in the countries under review. This could be an advantage for the state as a borrower, as the real value of its debt would be reduced. Of course, this relates to just the domestic debt. Inflation can be an accompanying phenomenon of a large depreciation of country's own currency against foreign currencies, and this would mean that debts in foreign currency would have greatly increased and could result in being unable to repay the debt, which has also often happened.

Moreover, if the inflation rate is high and unstable, it is a major problem for the country, as this discourages potential creditors who would be willing to lend to it. The country then does not find enough money to make it possible to repay its previous commitments.

In principle, however, it could be summarized from the previous data that excessively high inflation is often a precursor to major economic turmoil and sometimes the risk of default.

In case of raw debt size, as seen in Table 2, is to some extent confirmed by the results of Reinhart and Rogoff's work, and therefore the overall debt burden of the government is not the main reason that states would go through defaults. Out of the fourteen cases (data for Ecuador in 1999 were not available), a total of eight of them did not reach those imaginary magical limits that is 60% of the debt-to-GDP ratio set by the European Union for joining the currency union. There are even countries that have not had a 30% debt to GDP, which is a very good result that many mainly European countries are currently not achieving. It is possible that, in these cases, the decision to pay off debts was based on political rather than economic factors.

However, it is important to recall that this is only a static number and tells us nothing about the dynamics of public debt development or the size of the debt service of a given country. Smaller countries, like Dominican Republic, generally have a much weaker bargaining position and therefore are often unable to manage their debt as cheaply as other states, and then are unable to pay that high interest rate.

Here are some of the factors that Moody's does not consider, but which the author thinks might affect the ability of the country to meet its obligations. Factors were selected without knowing in advance whether they have an impact. These factors include unemployment, the size of the country's foreign currency and gold reserves, and the balance of the current account of the balance of payments, reflecting the external balance.

Unemployment (Table 4) is one of the biggest problems that every government must face. Because this is a very politically hot topic, governments are always trying to deal with it. One of the reasons why unemployment has been included in this

comparison is that governments are perhaps too busy with fighting unemployment and their focus is not on another task which may be worth their attention, and they are investing too much in addressing the issue of unemployment. The second reason is the bad effect of unemployment on the country's economic performance. On the one hand, a country with an unemployed population can never reach the peak of its potential and high unemployment creates social tensions and various criminal phenomena. Finally, it is a major problem for the state budget, both on the revenue side and on the expenditure side.

More than half of the countries surveyed had two-digit unemployment a year before bankruptcy. Then some, like Ukraine in 1997 and Peru, were very close to those two-digit values. Of course, one cannot claim that the only correct unemployment is the one with zero value, but the higher the unemployment rate, the worse the risk of default.

While unemployment may not be the direct cause of the state becoming insolvent, high unemployment is a concomitant phenomenon of various types of crises that can rapidly grow in the context of this problem.

Especially at a time when the country is experiencing financial turmoil it is worthwhile to have a large amount of government financial reserves (Table 4). The problem, however, is that countries rarely know when these problems arise and therefore they should keep their reserves stable. The risk that often occurs in such situations is usually citizens' attempt to purchase currencies of other states or as many material products as possible, fearing that the domestic currency's price on the world's currency markets will drop too much, and this will then be reflected in the prices of goods and services. Another problem that often occurs in this situation is the attack of speculative capital with the goal of depreciation of the currency and making the most of this depreciation. The risk is all the greater if the home country's currency is for any reason pegged to any foreign currency. For the state to be able to at least partially protect its currency from external influences, it should keep these reserves adequately high. Especially countries which have large external debt must have big reserves.

Other significance is the need to have reserves in times of economic problems in the country, due to the possibility of short-term balancing of the balance of payments.

It can be seen from Table 4 that states are not likely to have a larger amount of foreign exchange reserves, at a percentage of their gross domestic product. There are, of course, those with their debt to GDP size in tens of percent.

It cannot be specifically said that the amount of foreign exchange reserves would in some way affect the risk of bankruptcy of the country. It depends, above all, on

other factors, so it is not appropriate to include it in the country's assessment. One reason is also that it is difficult to determine a safe amount of foreign exchange reserves for individual countries. Though, they should be higher the bigger is foreign debt of that country.

The size of the current account of balance of payment may be a clear indicator of imbalances. From the data in Table 4, a large majority of countries have a negative value for their current account balance. This adds to the problem of the state budget deficit, which leads to a double deficit in many countries, which may prove to be a key risk. Indeed, it is clear from the table that passive current account balances can be one factor that, although not necessarily directly influencing the country's ability to meet its obligations, serves at least as a measure of this possibility. Countries with positive current account can use their export to get out of time of crisis and to import foreign currency necessary for payment of foreign debts.

Conclusions

This topic has become more and more important a few years ago, as the words crisis, economic policy, or sovereign default were discussed very often in all parts of political and public life. That is why it is necessary not only to discuss the issue among the public, but above all to carry out more high-quality research to better understand how the crisis works, how it affects economic operators and, above all, how to effectively reduce its effects. These studies are more important now, when after the last economic crisis, economic theories seem to have stopped working and economists do not know how to deal with the situation.

The aim of this work was to find out whether there are some indicators, common to the states that have recently gone through default and whether they could be universal and used to predict default. This is, of course, done by dozens of institutions around the world, but some economists do not refrain from criticizing the said institutions and their way of calculating these indicators, so the question is whether these indicators are calculated correctly. Using empirical analysis, the factors that played a key role in these crises have been selected and were subjected to a more rigorous review. It has been found that, although credit rating agencies use a wide range of data for their analysis, some of them may not have the best and most representative values. On the other hand, there are other factors that may, according

to the information found, have a greater impact on the risk of default but which these agencies do not deal with.

One of the drawbacks that emerged when writing this work is the amount of data that needs to be collected and appropriately described. Another problem is the small number of countries that have recently gone through default. The last of the problems that occurred during writing was the fact that data comparison, which is limited to states at the time of bankruptcy, may not be the most obvious. Sometimes, for example, it cannot be clearly determined whether an individual factor has a large or small share in the risk of default, unless we can compare it with countries that were stable at that time. However, such a comparison would, unfortunately, greatly exceed the capacity and scope of this work and could not therefore be done.

Overall, it is a very interesting and relatively unexplored topic that is worth attention and further research. It would certainly be appropriate to deal with the subject more deeply and with more precise statistical methods, because recently, it seems that a new kind of crisis is entering the economic world and therefore it should be better understood, as easily as possible together with the possible ways of how to combat it in the most effective way.

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Annexes

Table 1: Countries with the history of default

Country	Year of the Default	Size of Defaulted Debt (mil. USD)
Venezuela	1998	270
Russia	1998	72 709
Ukraine	1998	1 271
Pakistan	1999	1 627
Ecuador	1999	6 604
Ukraine	2000	1 064
Peru	2000	4 870
Argentina	2001	82 268
Moldova	2002	145
Uruguay	2003	5 744
Dominican Republic	2005	1 622
Belize	2006	242
Ecuador	2008	3 191
Jamaica	2010	7 900
Greece	2012	138 000

Source: World Bank (2018).

Table 2: GDP, sovereign debt and inflation of selected countries

Country	Year	Average GDP growth (%)	Real GDP (mil.USD)	Inflation rate (%)	Sovereign debt (% GDP)
Venezuela	1993–1997	1.61	131 186.9	38.42	34.588
Russia	1993–1997	-5.51	511 902.8	14.77	115.980
Ukraine	1993–1997	-12.47	57 423.3	15.94	46.537
Pakistan	1994–1998	3.42	79 409.1	6.23	75.212
Ecuador	1994–1998	3.17	34 011.5	36.1	–
Ukraine	1995–1999	-5.46	56 219.5	28.2	43.790
Peru	1995–1999	3.56	59 204.9	3.76	44.390
Argentina	1996–2000	2.66	201 959.8	1.04	44.886
Moldova	1997–2001	-0.02	2 252.3	12.09	69.160
Uruguay	1998–2002	-2.19	15 387.5	16.54	111.546

Country	Year	Average GDP growth (%)	Real GDP (mil.USD)	Inflation rate (%)	Sovereign debt (% GDP)
Dominican Republic	2000–2004	2.86	31 089.9	2.69	21.290
Belize	2001–2005	5.34	1 114.2	4.48	90.632
Ecuador	2003–2007	4.56	44 283.9	13.85	22.237
Jamaica	2005–2009	-1.3	*12 125.0	9.88	143.414
Greece	2007–2011	-3.12	222 545.1	0.77	156.494

Source: World Bank (2018).

Table 3: Government Indicators

Country	Year	Control of Corruption	Government Effectivity	Rule of Law
Venezuela	1997	-0.95	-0.83	-0.82
Russia	1997	-0.94	-0.77	-0.97
Ukraine	1997	-1.15	-0.92	-1.12
Pakistan	1998	-0.82	-0.58	-0.95
Ecuador	1998	-1.01	-0.80	-0.69
Ukraine	1999	-1.07	-0.75	-1.14
Peru	1999	-0.49	-0.09	-0.69
Argentina	2000	-0.34	0.06	-0.20
Moldova	2001	-0.95	-0.61	-0.64
Uruguay	2002	0.94	0.50	0.59
Dominican Republic	2004	-0.59	-0.55	-0.68
Belize	2005	-0.27	-0.15	-0.16
Ecuador	2007	-0.79	-0.85	-1.18
Jamaica	2009	-0.38	0.20	-0.50
Greece	2011	-0.25	0.31	0.39

Source: World Bank (2018).

Table 4: Unemployment, Monetary Reserves and Current Balance

Country	Year	Unemployment rate	Monetary Reserves (% GDP)	Current Balance (% GDP)
Venezuela	1997	-	19.38	4.356
Russia	1997	10.19	4.35	-0.02
Ukraine	1997	9.80	4.70	-2.574
Pakistan	1998	6.01	2.58	-2.081

Country	Year	Unemployment rate	Monetary Reserves (% GDP)	Current Balance (% GDP)
Ecuador	1998	11.50	6.21	-8.115
Ukraine	1999	11.90	3.46	5.076
Peru	1999	9.40	18.35	-2.789
Argentina	2000	17.13	8.85	-2.635
Moldova	2001	7.30	15.47	-1.809
Uruguay	2002	16.75	5.67	2.802
Dominican Republic	2004	6.15	3.73	4.426
Belize	2005	11.00	6.71	-13.572
Ecuador	2007	8.80	6.90	3.697
Jamaica	2009	11.35	17.12	-11.009
Greece	2011	17.86	2.33	-9.897

Source: World Bank (2018).