

Paweł PIĄTKOWSKI, PhD

Faculty of Economics and Finance, University of Białystok

e-mail: p.piatkowski@uwb.edu.pl

ORCID: 0000-0003-0560-6290

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THE REASONS OF HIGH VALUES OF *STOCK-FLOW* *ADJUSTMENT* – THE CONCLUSIONS FROM CASE STUDIES¹

Summary

Purpose – The paper presents the analysis of the situations of high values of SFA observed in European Union countries during the years 2002-2017. They were assessed in terms of their specific character as well as due to their frequency and the reasons of their occurrence. The analysis aimed at isolating those economic factors that create the risk of the occurrence of high SFA levels and thus contribute to the increase of public debt to a considerably larger degree than the budget deficit would imply.

Research method – The analysis is based on Eurostat data concerning the values of SFA for European Union countries. In the years 2002-2017 it comprised 431 observations. They have been analyzed in terms of the average values (both nominal and absolute), the share of positive and negative values and the frequency of the occurrence of high values in general and in particular countries. Subsequently, using case study methodology the Author analyzed the situation of countries with considerable shares of high values of SFA.

Results – The analysis has shown that high values of SFA are most frequently the effect of state interventions during economic crises. In most countries the increase of SFA values was temporary (e.g. in Ireland). The second reason is the risk of bankruptcy. Such patterns were observed in Greece and Cyprus. While in Cyprus the increase of SFA values was only temporary, in Greece the position still remains difficult. The third reason of an increase in SFA values lies in the investments made by pension system institutions. Such situations took place, among others, in Finland and Luxembourg.

Originality / value – The added value of the paper is connected with the case studies of countries with particularly high values of SFA. They were selected on the basis of data comprising 16 years and in total there were 431 observations for 28 countries of the European Union.

Key words: *stock-flow adjustment*, public debt, budget deficit

JEL Classification: H62, H63

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1. Introduction

The stabilization of public finance of the European Union countries within the *Excessive Deficit Procedure* (EDP) requires both the formation of limitations in terms of the budget deficit and public debt as well as the regular monitoring of the way they are complied with. Additionally, the control includes the analysis of the value referred to as *stock-flow adjustment* (SFA), which, in simplification, expresses the “hidden” budget deficit/budget surplus [more: Cafiso, 2012]. The Polish Ministry of Finance submits reports on this value to the European Commission [see, e.g. *Reporting of Government Deficits...*, 2018]. However, it is practically not used in the process of managing public debt and public finance [see: *Raport roczny...*, 2006-2018; *Strategia zarządzania długiem...*, 2005-2018]. Both the European Commission and the International Monetary Fund draw particular attention to this category because it is related to both the transitional changes of public debt (e.g. under the influence of changes of the exchange rates) and to the creative accounting or to the statistics deceit (e.g. in Greece). Therefore, it is necessary to draw attention to this value and recognize the reasons of its occurrence. The aim of the paper is to analyze the cases of particularly high total values of SFA because each of them is usually individual and has its own reasons. The recognition of them contributes to the situation when SFA may adopt high values, as the consequence of which public debt may increase or decrease to a considerably larger degree than the deficit or budget surplus implies. The first part of the paper presents the theoretical bases of the concept *stock-flow adjustment* and its relation to public debt and budget deficit. The second part includes the statistical analysis of the value of SFA in the European Union countries in the years 2002-2017. The third part presents case studies of selected countries having particularly high total values of SFA. The conclusions constitute the final part of the paper.

2. *Stock-flow adjustment* – the theoretical aspect

The category termed as *stock-flow adjustment* appears in the context of the relation between the budget deficit and public debt. It constitutes an essential element of the *Excessive Deficit Procedure* that is included in the Maastricht Treaty and in the Treaty Protocol. In accordance with these documents, budget deficit is associated with the value of *net borrowing* that in the ESA system is defined as the net sum borrowed by the entities from the *general government* sector. Owing to this it may be understood as the difference between the incomes and expenditures of these entities. Meanwhile, public debt is defined in the the Maastricht Treaty as the total nominal debt of the *general government* sector remaining at the end of the year [*Treaty on ...*, 1992; *Protocol on the excessive deficit procedure*, art. 2; www 2]. The deficit is financed using the stream of funds obtained from returnable sources. Meanwhile, public debt is the resource of emitted debt instruments and other outstanding liabilities. Such methods of defining both values show that the increase of debt in the t year ought to be equal to

the budget deficit in the t year, which may be presented as follows [Maltritz, Wüste, 2015, p. 226]:

$$B_t = B_{t-1} + D_t$$

which shows that:

$$\Delta B_t = D_t$$

where:

B_t, B_{t-1} – public debt in period t and $t-1$ respectively

D_t – budget deficit

ΔB_t – the increase of public debt in the t year.

The analysis of data regarding both the increase of public debt and budget deficit in the European Union countries (see: chart 1) shows that these values are not identical. In the literature the difference is referred to as *stock-flow adjustment* (SFA)². The relation may be presented as follows:

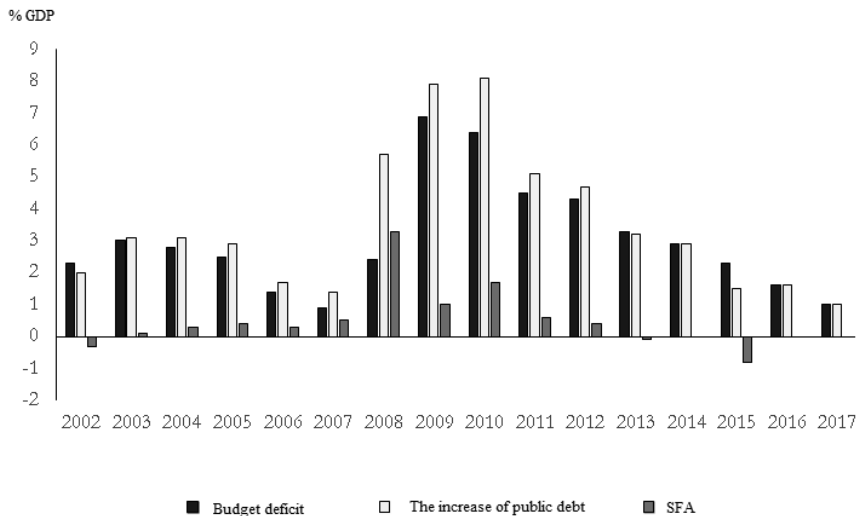
$$\Delta B_t \neq D_t$$

which in the extended form is as follows:

$$B_t = B_{t-1} + D_t + SFA$$

CHART 1

The value of budget deficit, the increase of public debt and stock-flow adjustment for the European Union (in % GDP)



Source: own elaboration on the basis: [*Stock-flow adjustment (SFA) for the ...*, 2006-2018].

² Until now there is no Polish equivalent of the term ‘stock-flow adjustment’. There is a Polish term ‘zmiana rezidualnej wartości długu publicznego’, but it is used very seldom.

On the basis of it SFA may be defined in the way presented below [Maltritz, Wüste, 2015, p. 226]:

$$SFA = B_t - B_{t-1} - D_t$$

where:

B_t, B_{t-1} – public debt in the t period and $t-1$ respectively

D_t – budget deficit.

The aforementioned relations are mentioned also in Eurostat, which defines *stock-flow adjustment* as the difference between the change of public debt and the level of budget deficit/budget surplus in the public finance sector ³ [*Stock-flow adjustment (SFA) for the Member States...*, 2017, p. 1]. When SFA is defined in this way, it adopts the value equal to zero in the situation where the increase of debt equals to the budget deficit. The negative value of SFA means that public debt increased to a smaller degree than the budget deficit implies. The positive value of SFA shows that public debt increased to a larger degree than the budget deficit implies [Rybacek, 2015, p. 8]. The interpretation of the sign of this category is not unequivocal. The sources of these changes may be such temporary factors as the changes of exchange rates. Therefore, it is essential to make the analysis of SFA structure pointing at its sources. In order to measure SFA, the Eurostat isolated the following structure of it [*Stock-flow adjustment (SFA) for the ...*, 2017, p. 3]:

1. The net acquisition of financial assets:
 - a) cash and deposits,
 - b) debt securities,
 - c) loans (short-term and long-term ones),
 - d) stock, shares, investment funds (portfolio investments, net + stock and shares/funds shares + investment other than portfolio investments),
 - e) derivative instruments,
 - f) other liabilities,
 - g) other financial assets.
2. Corrections:
 - a) net liabilities incurred in derivatives,
 - b) net liabilities of other accounts,
 - c) net liabilities of other undertakings,
 - d) emissions above/below the nominal value,
 - e) the difference between the interest that is due/obtained and the interest already paid,
 - f) debt repayment/buy-back above/below the nominal value,
 - g) appreciation/depreciation of debt denominated in foreign currencies,
 - h) changes in sector classifications,
 - i) other changes in the values of financial liabilities.
3. Statistical divergences.

³ In its calculations of SFA Eurostat takes into consideration the budget deficit of the public finance sector and such category will be specified later when the term budget deficit will have been formed.

Owing to its broad meaning, the concept *stock-flow adjustment* comprises the differences in the level of public debt that result from the reasons other than the financing of the budget deficit. Such general determination of this category enables the consideration of various aspects of the incompatibilities between the increase of debt and the budget deficit. It is a valuable characteristic of this concept because politicians are constantly using more methods to circumvent the limits and overcome the limitations as regards the national debt. The analysis of the aforementioned structure shows that *stock-flow adjustment* is generated by three basic groups of factors: the net acquisition of financial assets, corrections and statistical divergences.

The operations related to *The net purchase of financial assets* are connected with the properties accumulated by the public finance sector units. The elements connected with cash and deposits are quite frequently related to regulating liquidity in connection with public debt management in order to offset the burdens in particular years and make use of the differences in the interest of funds [*Vade Mecum on the...*, 2018, p. 80]. The acquisition of more stocks and shares is mostly connected with either the establishment or capitalization of national companies or with the purchase of stocks or shares. These operations are not evaluated in an entirely positive way because the purchased companies become responsible for the realization of certain public tasks, which frequently requires regular financing or they are given the task of entering into the commitments guaranteed by the state. Some operations are connected with the purchase of assets by pension systems. However, these purchases result in higher public debt. The value of the capital involved in these operations is not included in the deficit by governments and is not made public. Therefore, not all of the reasons relating to an increase of public debt depend on the conscious decisions of politicians [Jaramillo et al., 2016].

The category of *Correction* to a large degree results from factors that are difficult to predict, e.g. from changes in the exchange rate. They have an impact on the change of debt value calculated in the national currency. The influence of *Corrections* on debt depends on its structure. The larger the debt denominated in foreign currencies is, the greater the sensitivity to the exchange rate changes will be. On the other hand, the larger the share of instruments with the changeable interest rate is, the greater the sensitivity to the changes of interest rates is. This category also refers to the operations using the securities connected with the purchase at a higher price than the nominal debt or with the emission of securities with a discount, owing to which the debt increases to a larger degree than deficit implies [Weber, 2012, pp. 4-5].

The last category (statistical divergences) comprises chiefly those components that result from the differences in the classification of particular categories in various countries. Each of them calculates the budget deficit, public debt and SFA on its own. Moreover, the ranges in the public finance sector differ in particular countries (owing to the budget classifications and considerable differences in the size of particular countries). Some countries record particularly high values [*Vade Mecum on the...*, 2018, p. 80].

From the perspective of the analysis of the value of SFA and their importance in specific economies, particularly important research was conducted by von Hagen and Wolf. Their studies show that during the 30 years, which they were analyzed, there was a considerable difference (both positive and negative) between the debt increase and deficit. It is connected with the exacerbation of fiscal rules, which forces the governments to use other instruments than budget deficit in order to finance the expenditures. The authors define SFA as the form of creative accounting [von Hagen, Wolf, 2004, 2006]. Additionally, the research conducted by Reischmann [2016] and also by Maltritz and Würste [2015] and devoted to the impact of creative accounting on public debt indicates that the more there are fiscal rules and other limitations regarding the value of the budget deficit, the more inclined politicians become to undertake creative accounting activities.

Stock-flow adjustment constitutes an essential element of public debt management which enables more efficient monitoring of the real situation in terms of its dynamics. The following section presents an analysis of the value of SFA in the European Union countries and the examples of their particularly high values.

3. Changes in the values of *stock-flow adjustment* in the years 2002-2013⁴

3.1. The research method

With the purpose of selecting examples of both particularly high and low levels of SFA an analysis of data concerning the value of SFA in the years 2002-2017 for 28 countries of the European Union was undertaken. This period enables the assessment of the way SFA was being shaped and an evaluation of the frequency of the occurrence of high values of SFA in diverse economic conditions. In most countries the data covers a period of 16 years. In the case of the last three countries which became EU member states only partial data is available: for Bulgaria and Romania – 13 years and for Croatia – 5 years. The analysis included 431 observations. The data studied was analyzed in terms of the average values, both minimum and maximum values and their presence in the total observations for particular countries and for the entire European Union. The analysis takes into account the differences resulting from the occurrence of positive and negative values of SFA. Therefore, the average values among the absolute values were assessed. The analysis of both high and low values of SFA concentrated on the evaluation of their dimension (including the medium values), the occurrence frequency measured using the participation in the total number of observations and on the analysis of the signs of these values. The additional analysis of case studies comprised selected countries with either particularly high or low values of SFA. The

⁴ All the data used in the analysis and the explanations of member states regarding the value of SFA and its elements was taken from: [*Stock-flow adjustment (SFA) for the Member States...*, 2006-2018].

reasons of the occurrence of particularly high values of SFA are usually unique. The conclusions for their evaluation constitute an essential source of information for public debt management in subsequent years.

3.2. The diversification of the values of SFA in the years 2002-2017

The values of SFA observed in the European Union countries in the analyzed period are characterized by a high level of changeability. The average value of SFA in the entire period amounts to 0.55% GDP (median 0.4% GDP). Owing to the fact that this variable adopts both positive and negative values it is necessary to analyze also the absolute values – the average of them amounts to 1.90% GDP (median 1.2% GDP). These values show that on average the difference between the budget deficit and the increase of public debt is clear. It is worth emphasizing that the values of SFA reflect the impact of random factors and also hidden deficit and financial operations. Their non-budget character makes them particularly hazardous to the country's debt. A particular problem connected with such non-typical financial operations was the write-off of OFE bonds in Poland. There is no clearly defined value of SFA that would be considered as secure. Therefore, the average value of SFA may be compared, among others, to the maximum admissible budget deficit specified in the Maastricht Treaty at the level of 3% GDP. When compared with this value, the average value of SFA (which amounts to 0.55% GDP) is not particularly alarming, but it is important to remember that it is the “supplement” for the deficit. The average from the absolute values, which amounts to 1.9% GDP, represents a more alarming level because it denotes clearly higher values of SFA in the analyzed period.

TABLE 1

**Selected characteristic features of SFA in the analyzed countries
in the years 2002-2017**

Country	The minimum value	The maximum value	The average value	The average from the absolute value	The share of positive values	The amount of high values*
	in % GDP				in %	in units
Austria	-2.2	5.1	0.6	1.2	63%	1
Belgium	-2.0	6.8	0.4	1.1	56%	1
Bulgaria	-3.6	4.8	-0.1	1.6	46%	4
Croatia	-1.8	6.0	0.6	0.7	40%	1
Cyprus	-7.1	11.9	1.5	3.5	63%	4
Czech Republic	-3.8	1.5	-0.7	1.2	38%	1
Denmark	-4.7	10.9	1.0	2.5	69%	3
Estonia	-1.5	4.0	1.3	1.5	81%	1

Country	The minimum value	The maximum value	The average value	The average from the absolute value	The share of positive values	The amount of high values*
	in % GDP				in %	in units
Finland	-0.7	6.1	2.8	2.9	94%	8
France	-2.0	2.7	0.3	1.1	69%	0
Greece	-36.4	3.5	-2.3	4.7	69%	5
Spain	-2.1	3.4	0.5	1.3	75%	0
The Netherlands	-5.5	15.7	0.2	2.2	31%	3
Ireland	-9.9	10.5	0.4	3.2	50%	4
Lithuania	-2.6	3.2	0.5	1.6	56%	1
Luxembourg	-0.5	10.4	2.5	2.6	88%	5
Latvia	-4.4	7.3	0.7	2.1	63%	3
Malta	-4.5	3.2	0.4	1.6	69%	2
Germany	-1.3	7.4	0.8	1.2	56%	1
Poland	-6.9	2.3	-0.6	1.6	50%	1
Portugal	-3.5	8.9	1.0	2.2	56%	4
Romania	-3.1	2.1	-0.1	1.0	54%	0
Slovakia	-9.2	5.9	-1.4	2.4	31%	4
Slovenia	-2.8	7.2	1.1	1.9	75%	2
Sweden	-0.2	5.0	1.5	1.6	88%	2
Hungary	-3.0	7.6	0.8	1.7	56%	2
Great Britain	-1.3	4.4	0.7	1.1	69%	2
Italy	-2.1	2.1	0.4	1.0	69%	0

Source: own calculations on the basis: [*Stock-flow adjustment (SFA) for the ...*, 2006-2018].

The impact of SFA on the debt level is diversified, but there is observed the domination of positive values (62.2% of all the observations). Hence SFA more frequently increases the level of public debt. At the same time the impact of both types of values was similar. The average value calculated from the negative values of SFA in the analyzed period amounted to -1.85% GDP, whereas as regards the positive values it amounted to 1.99% GDP. In particular countries the share of the positive values of SFA in relation to all the observations was diversified. In six among them it amounted to more than 70%, whereas in 16 countries it oscillated at 50-69%, while in 6 other countries it was observed in more than 50% share of the values of SFA. This demonstrates that to a large degree SFA increases the level of public debt. Table 1 shows selected characteristics of SFA for the analyzed countries.

The paper concentrates on the particularly high values of SFA. This value has not been defined in literature so far. Therefore, as high values of it there are

considered values higher than 3% GDP. At that time in Cyprus there were high budget deficits (up to 6.3% GDP) but they occurred together with moderate values of SFA. In the structure of SFA there was dominating the position *The net acquisition of financial assets*, and in particular cash and deposits. Within three years there have been negative values of SFA (e.g. in 2008 -4.6% GDP) recorded. The situation changed in the years 2011-2013, when the values amounted to 5,4, 8,1 and 11.9% GDP respectively. In 2014 the value of SFA decreased to -7.1% GDP. Particularly high values are connected with the problems that Cyprus had with the solvency. This situation required the obtainment of aid funds, as the consequence of which (as regards SFA) there was observed the domination of high values in the position *The net acquisition of financial assets* although in the subsequent years they shifted from *Cash and deposits* to *debt securities* and later on to *Stocks and investment funds* [*Stock-flow adjustment (SFA) for the ...*, 2012-2015]. In the years 2015-2017 the values of SFA decreased from the levels achieved at the time before the crisis. In the structure there occurred positive and negative values by turns both in the category *The net acquisition of financial assets* and *Correction* [*Stock-flow adjustment (SFA) for the ...*, 2016-2018]. As regards to the position in Cyprus, it should be emphasized that this country (unlike Greece) achieved a temporary increase of the value of SFA. Public debt increased considerably as the result of the crisis and it was accompanied by high values of SFA. However, after four difficult years, the values of SFA stabilized at considerably lower level. The budget economy became more transparent and predictable, whereas public debt was under control. Therefore, the situation of Cyprus ought to be assessed as more positive in comparison to the case of Greece.

Finland

A particular situation during the period analyzed was observed in Finland. There was only one situation when negative value of SFA was observed. In one half of situations the values exceeded 3% GDP. Although the highest recorded value was 6.1% GDP (when the average value from the period of 16 years oscillated at 2.8% GDP), there was non-typical regularity as regards the positive and high values of SFA. Interestingly, Finland achieved budget surpluses for most of the time. The analysis of the structure of SFA shows that in most cases high values occurred in the category *Stocks, shares and investment funds*. They result in the entire period from major investments made by institutions of the pension system. In most periods this position in the structure exceeded 3% GDP (reaching even 5.5% GDP) within 12 out of 16 analyzed years. Additionally, with regards to Finland, in some years there were higher than average values of statistic variations observed. They oscillated from -0.5% GDP to 0.3% GDP. Hence they did not considerably increase the debt level. Meanwhile, in 2009 there were noticeable reductions in the category *Stocks, shares investment funds* that the pension scheme institutions invested in. Furthermore, in the same year these institutions needed support in the form of long-term loans [*Stock-flow adjustment (SFA) for the ...*, 2010]. In 2012 another exception to the typical values was the necessity to contribute to the stabilization fund. It cost 0.7% GDP [*Stock-flow adjustment (SFA) for the ...*, 2013]. After 2012 Finland was also involved in

the financing of the export loan fund. In 2015 privatization activities were initiated which had an influence on the value of SFA [*Stock-flow adjustment (SFA) for the ...*, 2016]. To conclude, the higher than average values of SFA in Finland in the analyzed period resulted chiefly from the activities of the pension system. These investments constitute a positive element of economic policy and despite the increase of the debt level they create capital for the future. Therefore, they ought to be assessed positively although one may concede that the costs of these investments are substantial and have a strong impact on the increase of public debt (despite the regular occurrence of substantial budget surpluses).

Luxembourg

Another country where high values of SFA occurred frequently is Luxembourg. In this country the negative values of SFA occurred only twice, whereas high values of SFA were observed in 31% of observations. Although the average value amounted to 2.5% GDP, it was the second highest value among European Union member states. The analysis of the structure of SFA in the case of Luxembourg shows that high positive values of SFA appeared most frequently in the category *Cash and deposits* and also *Stocks, shares and investment funds*. It results chiefly from the investment in securities (of pension institutions mainly) and partly from money raised for investments. These values oscillate from particularly negative (-11% GDP in 2007 in the category *Cash and deposits*) to highly positive ones (15.3% GDP in the category *Stocks, shares and investment funds*). The operations connected with stocks comprised both investments and the sale of them [*Stock-flow adjustment (SFA) for the ...*, 2006-2018]. This category had the largest impact on the shaping of the value of SFA for Luxembourg. The other categories were characterized by insignificant values, with the exception for the years 2009-2010 when there were presented the values 1.4% GDP and -3.4% GDP respectively in the column of Adjustments [*Stock-flow adjustment (SFA) for the ...*, 2010-2011]. Hence Luxembourg is another example of the country where high values of SFA result from investments, including those made by the pension scheme institutions. However, unlike in Finland, they did not increase the public debt considerably.

Ireland

A special example of a country with high values of SFA was Ireland. In the years 2003-2007 it recorded positive values of SFA oscillating from 1.1% GDP to 2.8% GDP. They resulted from the investment in securities made by pension system entities. In the structure of SFA there was observed domination of the purchases of stocks/shares. These values do not result in considerable increases of public debt (relatively low in that period). Therefore, they did not constitute any hazard to the stability of public finance. The situation changed in 2008 when Ireland was affected by the economic crisis. In particular, the support was necessary in the banking sector where the government increased its activity and took over both stocks and toxic assets. Additionally, the sector received financial support. Therefore, starting

from the year 2008 Ireland has recorded very high budget deficits (which amounted to 32.4% GDP in 2010). In that year the public debt increased to 119.9% GDP [www 1]. However, in the years 2008-2017 there were observed high positive values of SFA which indicated considerable increase of public debt above the deficit level. In 2008 SFA amounted to 10.5% GDP, which was connected with the collection of funds for supporting the banking sector [*Stock-flow adjustment (SFA) for the ...*, 2009]. Meanwhile, in 2012 there was observed the value of 6.6% GDP [*Stock-flow adjustment (SFA) for the ...*, 2013]. However, the situation was temporary. In the subsequent years there were observed substantial negative values of SFA. In 2014 the value was -9.9% GDP, in 2010 -5.5% GDP, in 2013 and 2015: -2.8 and -2.5% GDP respectively [*Stock-flow adjustment (SFA) for the ...*, 2014-2016]. These values resulted from the restructuring of the bank sector and (as the consequence) from the sale of some shares and portfolios of toxic assets that were previously taken over by the state. To sum up, Ireland recorded high values of SFA that resulted from temporary economic difficulties. After a period of major increases in debt levels, there began a process of improving the situation, which was reflected in the values of SFA. Thus, no long-term hazard for the stability of public finance may be expected from the *stock-flow adjustment*.

The year 2008

The aforementioned analysis should be supplemented with the analysis of data concerning 2008 when many countries of the European Union recorded high values of SFA. Among 27 observations (there is no observation for Croatia in that year) as many as 12 are higher than 3% GDP (in absolute values), among which only one is negative. Meanwhile, in case of 4 observations, there is more than 10% GDP. These are: Denmark (10.9% GDP), Ireland (10.5% GDP), Luxembourg (10.4% GDP) and the Netherlands (15.7% GDP). In subsequent years in Belgium, Latvia, Hungary and Austria the SFA level exceeds 5% GDP. The average value of SFA for the entire European Union in that year amounted to 3.1% GDP, while in the other years it was higher than 1% GDP only once (in 2011). The average absolute value was even higher and amounted to 3.9% GDP. The analysis of the explanations concerning particular countries shows that the main reason of such high values were assistance activities for the financial institutions affected by the financial crisis [*Stock-flow adjustment (SFA) for the ...*, 2009]. These funds constituted temporary aid and in most cases the situation of bankruptcy was avoided. In the case of countries with high values of SFA in 2008 there were considerably lower values in the subsequent years, mostly negative (owing to the retrieval of the allocated funds). The exceptions were some countries analyzed in detail in this part (above all, Greece and Luxembourg). To conclude, the high values of SFA, which were observed in 2008, constituted the effect of the onset of economic crisis and were temporary. Therefore, one may expect the possibility of considerable increase of SFA in the situation of a crisis or economic recession especially owing to the problems with the stability of the financial system.

4. Conclusions

The aforementioned reflections enable the formulation of several conclusions. Firstly, the values of SFA in the analyzed period in the European Union countries were very changeable/variable and frequently interchangeably adopted values with either + or -. Therefore, the average values (both for particular countries and years) are not particularly high.

Secondly, there is no universally recognized limit of the values that are considered as high. For the needs of this elaboration there was adopted the limit of 3% GDP (in absolute values), whereas the values higher than this limit were considered as particularly high. In general, there were observed 15% of such values (where 10% were positive, while 5% were negative). There are relatively frequent cases of the occurrence of high values of SFA. Therefore, it is essential to recognize their sources and risk factors connected with the occurrence of them.

Thirdly, the analysis of countries with particularly high values of SFA and countries, where high values of SFA were observed regularly, makes it possible to point at ascertain regularity. The first group includes those countries, where the increase of the value of SFA is the effect of the occurrence of economic crises and debt crises. In those countries owing to the difficult financial and economic situation it was necessary to make use of non-budget measures. Apart from Greece other countries improved their budget discipline in the subsequent years and reduced the values of SFA (while some countries paid their debts). Thus the situations of crisis had temporary impact on the values of SFA. In the second group of countries the high values of SFA are caused by the investments made by pension schemes. The idea of collecting assets for financing the future pensions is positive. However, the impact of these operations on the value of public debt is considerable, for example in case of Finland it is essential to reflect on what is the possibility of continuing such activities. Presently the level of public debt in Finland exceeded 60% GDP.

To summarise, the analysis of the cases where high and particularly high values of SFA occurred shows that the consequence of economic and debt crises is usually the substantial growth of public debt above the level that results from the budget deficit. The deterioration in the situation of the country and key sectors (e.g. bank sector) requires substantial expenditures from non-budget funds. The investments made in the pension system also have major impact on the level of SFA, and consequently on the public debt. As the consequence there may arise limits in realizing in this sphere those activities that result from excessive debt. Therefore, it is essential to observe the values of SFA and be aware that in the crisis periods debt may increase more than budget deficits would imply.

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