

Contemporary Contemporary Economy Electronic Scientific Journal http://en.wspolczesnagospodarka.pl/ Vol. 9 Issue 4 (2018) 1-11 ISSN2082-677X DOI <u>10.26881/wg.2018.4.01</u>

THE CONDITION OF PUBLIC FINANCES AND ITS IMPACT ON THE LEVEL OF INFLATION IN POLAND IN 2011-2017

Krzysztof Dobrowolski, Grzegorz Pawłowski

Abstract

The aim of the article is to present the condition of the main elements of public finances: public finance deficit (budget deficit), public debt (state treasury debt) and public expenditure (budget expenditure) in Poland in 2011-2017 and on the basis of the described theoretical dependencies to determine their impact on the level of inflation during the period considered. The following methods were used in the research: analysis and logical construction and statistical methods. It was found that the state of public finances did not cause inflationary pressure in the analysed period. Inflation remained at a low level, with a tendency to transform into small deflation in some years. However, the abrupt increase in

public spending in 2017 could be, according to the theory of economics, responsible (or partly responsible) for the increase in inflation in 2017. Maintaining a high rate of public expenditure growth may stimulate inflation in subsequent periods.

Keywords: public finance, public debt, budget deficit, public expenditures, inflation

JEL classification: G20

Introduction

In economic theory, attention is drawn to the connections between the deficit of the public finance sector (budget deficit), public debt (debt of the state treasury), public expenditure (budget expenditure) and the level of inflation. Despite the fact that these relations are mutual, the article focuses on the impact of imbalance in the public finance sector on the level of inflation.

The persisting deficit of the public finance sector (budget deficit) caused by excessive public expenditure in relation to revenues generates growing public debt (debt of the state treasury). Each of these elements of public finances may, under certain conditions, affect the level of inflation.

The first part of the article presents the theoretical relationship between inflation and the above-mentioned components of public finances. The second part of the article is devoted to the analysis of the state of public finances in Poland in 2011-2017. The third part analyses the impact of the state of individual components of public finances on the level of inflation in the analysed period.

The research period covers the years 2011 - 2017. The adoption of such a period results from the fact that on November 18, 2011 the second term of office of the PO - PSL coalition began, so 2012 was the first full financial year of the second term of the coalition, which lasted until November 16, 2015. The years 2016-2017 are the next full financial years of the PiS coalition government. Thus, it is possible to analyse the condition of public finances in connection with the level of inflation during the administration of these two coalitions.

1. The impact of public (budget) deficit, public (state treasury) debt and public (budget) expenditure on inflation - theoretical issues

A budget deficit (deficit in the public finance sector) influences the level of inflation depending on the source of financing. It is assumed that inflationary financing is the financing of the deficit through its monetization, i.e. the creation of money by the central bank. Such a situation occurs when the central bank grants loans (credit) to entities of the public finance sector or purchases debt securities issued by them. In many countries, including those belonging to the European Union, such practices are prohibited.

The hypothesis referred to as "unpleasant monetarist arithmetic" by T. Sargent and N. Wallace directly assumes that with chronic deficits, impossible to finance with the issue of debt securities, the central bank will not be able to effectively maintain prices at a stable level and will be forced to finance the deficit with additional money issue. Restrictive monetary policy in the current period will trigger higher inflation in the future (Knakiewicz et al., 2011).

Deficit financing is usually neutral for the level of inflation through loans taken by the state treasury on the domestic financial market: in commercial banks, business entities, households, through the issue of treasury securities, without increasing the money supply. This means, however, the occurrence of a push effect, i.e. absorption by the budget of private sector financial surpluses that could be more effectively used to finance investment projects. However, the usual increase in interest rates in this situation (especially with the increasing budget deficit) increases the expected profitability of investments, leading to the abandonment of those that cannot meet these expectations. An increase in interest rates is also a factor that influences the decline in inflation. The level of the budget deficit may also affect the level of inflation; the greater the deficit, the greater the risk of rising inflation.

Financing the deficit with domestic debt can, however, cause monetization if the central bank conducts accommodative (expansionary) monetary policy to meet the increased demand of the economy for money and to maintain a certain level of interest rates (Rosati, 2017).

Deficit financing may also take the form of sales of treasury securities on foreign markets. This limits the level of domestic debt and keeps interest rates low (Skousen, 2015). However, it is associated with the risk of a current account deficit and may lead to inflation growth caused by the need to exchange the acquired foreign currencies for the national currency at the central bank. Foreign currency reserves are increasing, but the use of domestic resources obtained from the central bank to cover public expenditures increases the monetary base and affects inflation processes.

A high level of public debt may create a temptation to extort the central bank, especially in a situation of limited independence, to conduct loose monetary policy, to reduce the real value of debt through inflation (Mackiewicz-Łyziak, 2014). Loose monetary policy with a high level of indebtedness, resulting in a widening of the monetary base and generating inflation, may however, constitute a conscious choice of the central bank in order to counteract the increase in interest rates above the acceptable level of indebtedness (Lee, 2000). A high level of indebtedness may also lead to typical monetization, i.e. the purchase of assets by the central bank, in order to reduce public debt, an example of which may be Japan (Mrowiec, 2017). According to the fiscal theory of the price level, such behaviour of the central bank, enforced by the government's fiscal policy, may lead to the loss of control over inflation (Mackiewicz-Łyziak, 2014).

High indebtedness may also translate into higher inflation through rising inflation expectations. While this applies to countries with high public debt (over 60% of GDP), it does not occur in countries with lower levels of public debt (Mackiewicz-Łyziak, 2014).

Budget expenditures (public expenditures) may generate demand inflation, among others through social transfers, while decisions in the field of economic policy may stimulate cost inflation, for example by increasing the minimum wage. In the literature, however, it is pointed out that a one-off permanent increase in public expenditures causes only a one-time permanent price increase. "A one-time increase in government expenditures only leads to a temporary increase in the inflation rate, but not to inflation, in which the level of prices is constantly growing" (Mishkin, 2002). Only with a constant increase in public expenditures could a steady increase in prices occur.

2. Public finances in 2011-2017

Changes in the basic values characterizing the state of public finances in Poland in the analysed period are presented in Table 1.

		-					
Years	2011	2012	2013	2014	2015	2016	2017
Public							
expenditures	662708.7	683567.4	698746.3	715863.6	731706.8	747974.2	790279.7
Dynamics	4.1	3.1	2.2	2.4	2.2	2.2	5.7
Public revenue							
	606371.3	646007.4	650392.1	676248.8	687716.5	701908.7	776128.0
Dynamics	10.0	6.5	0.7	4.0	1.7	2.1	10.6
Public sector							
deficit	56337.4	37560.0	48354.2	39614.7	43990.3	46065.5	14151.7
Dynamics	-33.8	-33.3	28.7	-18.1	11.0	4.7	-69.3
Total							
public debt	815346.2	840476.8	882293.0	826774.7	877282.4	965201.5	961818.8
Dynamics	9.0	3.1	5.0	-6.3	6.1	10.0	-0.3
Public domestic							
debt	557075.0	576426.2	614321.8	534792.6	570482.7	630174.2	662534.9
Dynamics	2.5	3.5	6.6	-12.9	6.7	10.5	5.1
Share of domestic							
debt	68.3	68.6	69.6	64.7	65.0	65.3	68.9
Public foreign							
debt	258271.2	264050.6	267971.2	291982.1	306799.8	335027.4	299283.9
Dynamics	26.3	2.2	1.5	9.0	5.1	9.2	-10.7
HICP	3.9	3.7	0.8	0.1	-0.7	-0.2	1.6
CPI	4.3	3.7	0.9	0.0	-0.9	-0.6	2.0

Table 1: Public finances in 2011-2017 (PLN m) and change dynamics (%, previous year = 100)

Source: GUS data, the authors' own calculation based on GUS data.

Public expenditures in 2013 - 2016 increased at a steady pace of just over 2% per annum. In 2011, they increased by 4.1% compared to 2010, in 2012 by 3.1% as compared to 2011, however, a much higher increase occurred in 2017, in which public expenditure increased by 5.7% in relation to 2016.

The dynamics of public revenues was much less stable as it showed annual fluctuations in the range of 0.7 - 10.6%. In 2017, public revenues increased by 10.6%, which meant that despite high expenditure growth, the public finance deficit was lower by 69.3% than the previous year's deficit, which in turn showed the lowest increase during the period considered in relation to the previous year. The decrease in the deficit in relation to the previous year was also recorded in 2011 (by 33.8%), 2012 (by 33.3%) and 2014 (by 18.1%).

The changes in the level of public finance deficit are correlated with changes in the level of public debt, except for the year 2016, when the low growth dynamics of the deficit was accompanied by high (the highest in the audited period) dynamics of public debt growth, both domestic and foreign. In 2011, the decline in public finance deficit was accompanied by high dynamics of public debt growth, while in 2012, the decline in the deficit was accompanied by a relatively low growth rate of public debt. In the remaining years, the increase in the deficit was accompanied by an increase in debt and a decline in the deficit, by a decline in debt, although the scale of these changes varied. The debt structure in the entire analysed period was dominated by domestic debt. Also, the growth rate of this debt was generally higher than the growth rate of foreign debt, except for 2011 and 2014.

Since the beginning of the period under review, the level of inflation has been systematically decreasing until slight deflation occurred in 2015-2016, after which the general price level in 2017 increased, correlated with the increase in public expenditures.

r · · · · · · · · · · · · · · · · · · ·											
Years	2011	2012	2013	2014	2015	2016	2017				
Total public debt	815346.2	840476.8	882293.0	826774.7	877282.4	965201.5	961818.8				
State treasury											
debt	747504.3	769128.8	811827.1	753332.2	803371.9	893893.3	890687.1				
Share of state											
treasury debt (%)	91.7	91.5	92.0	91.1	91.6	92.6	92.6				

Table 2: Share of the state treasury debt in total public debt in 2011-2017 (PLN million)

Source: GUS data, the authors' own calculation based on GUS data.

Over 90% of public debt is generated by the state treasury and this share remains stable, with a slight increase in the last two years. This means that the burden of pursuing debt policy rests practically with the central authorities, and the decisions of local governments with a small share of their debt in public debt, are of secondary importance.

Table 3: Budget revenue and expenditures in 2011-2017 (PLN million) and their dynamics (%, previous year = 100)

Years	2011	2012	2013	2014	2015	2016	2017
Budget revenue	277557.2	287595.1	279151.2	283542.7	289136.7	314683.6	350414.7
Dynamics	10.9	3.6	-2.94	1.6	2.0	8.8	11.3
Budget							
expenditures	302681.6	318001.9	321345.3	312519.5	331743.4	360843.1	375768.5
Dynamics	2.6	5.1	1.0	-2.7	6.1	8.8	4.1
Budget deficit	25124.4	30406.7	42194.1	28976.8	42606.7	46159.5	25353.8
Dynamics	-43.6	21.0	38.8	-31.3	47.0	8.3	-45.1

Source: GUS data, the authors' own calculation based on GUS data.

The dynamics of budget revenues showed significant fluctuations in the analysed period, from a decrease in these revenues by 2.94% in 2013 compared to the previous year (the only decrease in the examined period) to an increase of 11.3% in 2017. The high dynamics of revenues growth was recorded also in 2011 (10.9%) and 2016 (8.8%), while in other years its level remained in the range of 1.6 - 3.6%.

The dynamics of budget expenditures also showed significant fluctuations in the analysed period, while in general they were on a higher level than the dynamics of revenues. The exceptions were: 2011 (increase in revenues by 10.9%, expenditures by 2.6%), 2014, the only year of decrease in expenditure compared to the previous year (by 2.7%) and 2017, in which the dynamics of budget expenditure growth in relation to the previous year reached the level of 4.1%, with an increase in revenues by 11.3%. In 2016, the dynamics of expenditure growth reached the same level of 8.8% as the dynamics of revenues growth.

Fluctuations in the dynamics of budget revenues and expenditures contributed to significant and irregular fluctuations in the dynamics of the budget deficit in the analysed period, ranging from -45.1% to + 47%. Fluctuations in the budget deficit were generally not correlated with changes in the inflation rate, except in 2014 and 2016, when the decline in inflation was accompanied by a decrease in the budget deficit compared to the previous year (2014) and a decline in its growth (2016). The year 2017 is noteworthy because the significant decrease of budget deficit (by 45.1%) compared to 2016 was accompanied by an increase in the inflation rate (from deflation at 0.6% to inflation of 2%), as well as the year 2011, when the decline in the budget deficit (by 43.6%) in relation to 2010 was accompanied by a relatively high inflation rate (4.3%, the highest in the period under consideration).

Years	2011	2012	2013	2014	2015	2016	2017
Public	662708.7	683567.4	698746.3	715863.6	731706.8	747974.2	790279.7
expenditures							
Budget	302681.6	318001.9	321345.3	312519.5	331743.4	360843.1	375768.5
expenditures							
Share of							
budget							
expenditures							
(%)	45.7	46.5	46.0	43.6	45.3	48.2	47.5
Public							
revenue	606371.3	646007.4	650392.1	676248.8	687716.5	701908.7	776128.0
Budget	277557.2	287595.1	279151.2	283542.7	289136.7	314683.6	350414.7
revenue							
Share of							
budget							
revenue (%)	45.8	44.5	42.9	41.9	42.0	44.8	45.1
Public sector							
deficit	56337.4	37560.0	48354.2	39614.7	43990.3	46065.5	14151.7
Budget deficit	25124.4	30406.7	42194.1	28976.8	42606.7	46159.5	25353.8
Share of							
budget deficit							
(%)	44.6	80.9	87.3	73.1	96.8	100.2	179.1

Table 4: Share of expenditures, revenues and budget deficit in expenditures, revenues and deficit of the public finance sector in 2011-2017 (PLN million)

Source: GUS data, the authors' own calculation based on GUS data.

The share of budget expenditures in total public expenditure, however, remained below the 50% level in the audited period, but showed fluctuations. In 2012, this share increased in comparison with the previous year, while in 2013 - 2014 it showed a decline, and in 2015 - 2016 the upward trend was observed again followed by a slight decrease in 2017 (0.7 p. p.).

These fluctuations naturally correspond with the changes in the dynamics of growth of budget expenditures and total public expenditure. In periods when the share of budget expenditures in public expenditure decreases, the dynamics of budget expenditure growth is lower than public expenditure (and even these expenses are decreasing) and in periods when the share of budget expenditure growth is higher than public spenditure.

The share of budget revenues in total public revenues is lower in the entire analysed period than the share in public expenditure, except for 2011, when this share was slightly higher (by 0.1 p. p). The share of budget revenues in public revenues also shows fluctuations in the analysed period, with two trends emerging: in 2012-2014 this share decreased and then it gradually increased. These changes are, of course, correlated with the dynamics of growth in budget revenues and public revenues, in the same way as in the case of expenditure.

Apart from 2011, the share of the budget deficit in the public finance deficit is very high. In 2012-2015, the budget deficit accounts for a significant part of the public finance deficit, and in 2016 - 2017 for the whole. This means that in the last period other entities of the public finance sector generated total financial surpluses.

3. State of public finances as a potential inflation factor in Polish conditions

3.1 Deficit in the public finance sector as a potential inflation factor in Polish conditions

The analysis conducted in the previous section indicates that in the audited period the public finance deficit posed no threat to the implementation of inflation policy in the band of the adopted inflation target. First of all, it was kept within safe limits, although in some years it exceeded the level defined in the convergence criteria.

reals 2011 2012 2013 2014 2013 2016 20		I I I					
	Years				2014		2017
Deficit/GDP 4.8 3.7 4.1 3.7 2.7 2.2 1.4	Deficit/GDP	4.8	3.7	4.1		27	1.4

Table 5: Deficit of public finances in relation to GDP in 2011-2017 (%)

Source: Eurostat data.

Since 2014 a clear tendency of decreasing the ratio of the public finance deficit to GDP has emerged. Also, the deficit level, except for 2013 and 2015, showed a decreasing trend year-on-year, as described in the previous section. Thus, there is no danger associated with "unpleasant monetarist arithmetic".

As shown in the previous section, the dynamics of changes in the public finance deficit (budget deficit) was not generally correlated with changes in the inflation rate.

As the sources of financing the deficit are not loans and credits taken out in the central bank (legally prohibited), there is no problem of monetization of the deficit resulting in inflationary pressure. Also loans taken on foreign markets, whose share in the total public debt does not exceed 35%, do not cause excessive liquidity growth in the financial system.

Years	2011	2012	2013	2014	2015	2016	2017
Money							
supply							
(mln PLN)	881496.3	921412.5	978908.2	1059015.3	1154992.6	1265661.7	1324368.6

Table 6: Money supply, money supply dynamics, GDP dynamics and inflation in 2011-2017 (%)

Money supply	40.4	4.5	<u> </u>	0.0	0.4	0.0	4.0
dynamics	12.1	4.5	6.2	8.2	9.4	9.6	4.6
GDP							
dynamics	5.0	1.6	1.4	3.3	3.8	3.1	4.8
CPI	4.3	3.7	0.9	0.0	-0.9	-0.6	2.0

Source: GUS and NBP data.

The money supply in the period under review was kept at a safe level and correlated with GDP growth and inflation rate (2011 closed the several-year cycle in which the money supply dynamics was at a level exceeding even 18% in 2008, which was partly related to the financial market crisis). In 2013-2016, a much higher dynamics of the money supply growth than the GDP growth was probably caused by a low inflation rate, turning into a mild deflation. The above data do not indicate that the central bank has an accommodative monetary policy, which could lead to inflation when financing the deficit with domestic debt.

3.2. Public debt as a potential inflation factor in Polish conditions

Public debt, which can be identified with the debt of the state treasury, due to its over ninety percent share in total debt, is at a relatively safe level.

Table 7: Public debt in relation to GDP in 2011-2017	(%)
--	-----

	Years		2012	2013	2014	2015	2016	2017
Public debt/GDP 54.1 53.7 55.7 50.4 51.3 54.	Public debt/GDP	5/11	53/		50.4		54.2	50.6

Source: Eurostat data.

Throughout the audited period, the ratio of public debt to GDP did not exceed the level adopted in the convergence criteria. Thus, there is no situation in which the excessive amount of public debt may lead to inflation by forcing the central bank to conduct loose monetary policy, and even more so to monetise debt. There was also no need for the central bank to deliberately pursue a loose monetary policy in order to counteract the increase in interest rates, stimulated by excessive public debt.

The central bank also did not undertake any activities leading to the monetization of debt through open market operations consisting in the purchase of debt treasury securities. Open market operations were carried out using bank securities.

The level of public debt was also not high enough to generate inflation expectations.

3.3.Public expenditure and wage regulations as potential inflationary factors in Polish conditions

As the analysis carried out in the previous section showed, public expenditure was characterized by stable growth over the majority of the surveyed period, while the dynamics of budget expenditures showed significant fluctuations. In 2017, there was a significant increase in public expenditure (by 3.5 p. p.), with a decrease in the dynamics of budget expenditure growth (by 4.7 p. p.). In the same year there was an increase in the inflation rate (from deflation at the level of 0.6% to 2% inflation), which according to the theory presented in section 1, could have been influenced by a rapid increase in public spending. With a one-off increase in public spending, prices should stabilize at a higher level, and a further increase in this expenditure in subsequent periods could generate an increase in the inflation rate.

Table 8 presents the dynamics of public and budget expenditure growth with the consumption dynamics in the household sector and the dynamics of domestic demand.

7

Years	2011	2012	2013	2014	2015	2016	2017
Public expenditure							
dynamics	4.1	3.1	2.2	2.4	2.2	2.2	5.7
Budget expenditure dynamics	2.6	5.1	1.0	-2.7	6.1	8.8	4.1
Household consumption dynamics	3.3	0.8	0.3	2.6	3.0	3.9	4.9
Domestic demand dynamics	4.2	-0.5	-0.6	4.8	3.3	2.3	4.9

Table 8: Growth dynamics of public and budget expenditures, household consumption and domestic demand in 2011-2017 (%)

Source: the authors' own calculation based on GUS data.

In the analysed period, the dynamics of household consumption was more correlated with the dynamics of public expenditure than budget expenditures. Only in 2015 and 2016 consumption dynamics deviated from the dynamics of public expenditures, while in 2016 the stabilization of these expenditures was accompanied by a slight increase in consumption (by 0.9 p. p.). The dynamics of budget expenditures differed from the consumption dynamics in 2012, 2014 and 2017.

With the exception of 2016, in which the stabilization of public expenditures was accompanied by an increase (by 1 p. p.) in domestic demand, the changes in these ratios showed a correlation in the remaining years. Significantly lower dynamics of demand was correlated with the dynamics of budget expenditures. Changes in these ratios showed a correlation only in 2013 and 2015.

The analysis carried out shows that public expenditures have a stronger impact on household consumption and domestic demand, i.e. potentially inflationary phenomena, than budget expenditure excluded from them. A Ppotentially inflationary part of public expenditures constitute, among others, social benefits and other social expenses that may cause demand inflation under specific conditions.

Years	2011	2012	2013	2014	2015	2016	2017
Social benefits							
dynamics	3.2	5.1	5.4	3.5	3.5	2.2	2.9
"500 plus							
program"	х	х	х	х	х	х	31.8
dynamics							
Household							
consumption							
dynamics	3.3	0.8	0.3	2.6	3.0	3.9	4.9
Domestic							
demand	4.2	-0.5	-0.6	4.8	3.3	2.3	4.9
dynamics							
CPI	4.3	3.7	0.9	0.0	-0.9	-0.6	2.0

Table 9: The dynamics of social benefits, expenses of the "500 plus program", household consumption,domestic demand and the inflation rate in 2011-2017 (%)

Source: GUS data, the authors' own calculation based on GUS data.

The rate of social benefits dynamics did not show a significant correlation with the household consumption dynamics index (convergence only in 2017) and the rate of domestic demand growth (convergence only in 2016-2017). In the case of the inflation rate, the

correlation with the rate of social benefits groth is slightly stronger and occurred in three years 2014, 2016 and 2017.

It seems interesting to compare the dynamics of public and budget expenditure growth with the dynamics of social benefits in 2016-2017. The rate of public expenditure growth increased in 2017 by 3.5 p.p. compared to 2016, while the rate of budget expenditure dynamics decreased in this period by 4.7 p.p.

In these years, the dynamics of social benefits (including pensions, allowances and preretirement benefits) showed moderate growth (2.2% and 2.9%), but a significant source of new expenditures in the form of the "500 plus program" (funds from the scheme paid in the form of parental benefits, educational allowances and additions to the flat-rate amount for family-type care and educational facilities) occurred. In 2016, expenditures in this respect amounted to PLN 17.6 billion and in the following year to PLN 23.2 billion. The fact that they did not increase the dynamics of budget expenditures in 2017, but only in 2016, shows that in the last year of the examined period, other budget expenditures have decreased. However, there may be a connection with the increase in the inflation rate in 2017 and an increase in the level of payments from the "500 plus program".

Years	2011	2012	2013	2014	2015	2016	2017
Minimum wage							
dynamics	5.2	8.2	6.7	5.0	4.2	5.7	8.1
Average wage							
dynamics	1.4	2.2	7.1	1.9	1.2	4.8	5.6
CPI	4.3	3.7	0.9	0.0	-0.9	-0.6	2.0

 Table 10: Dynamics of minimum and average wage and inflation rate in 2011-2017 (%)

Source: GUS data, the authors' own calculation based on GUS data.

The dynamics of minimum wage growth was correlated with the inflation rate for the majority of the analysed period (except in 2012 and 2016), while the growth dynamics of the average wage showed a smaller correlation with the inflation rate (it occurred in the years 2014,2015, 2017).

In general, it can be stated that public and budget expenditures did not constitute significant inflationary factors in the analysed period, and neither did average and minimum wages. One of the reasons for this phenomenon is the formation of the demand gap.

Years	2011	2012	2013	2014	2015	2016	2017
Potential							
GDP	3.3	3.1	2.8	2.5	2.7	3.2	3.1
Output gap	0.1	-0.3	-1.6	-1.9	-1.1	-1.8	-0.3

Table 11: Potential GDP and demand gap in 2011 - 2017 (%)

Source: NBP, Raporty o inflacji, 2011 - 2017.

In Table 11, the demand gap is presented as a percentage of potential GDP. A negative demand gap indicates that the real output in the economy is lower than the potential output, i.e. all production capacities are not used. Increased demand generated, among other by public expenditures, can be met by increased supply, which limits inflationary pressure in the economy.

A negative demand gap in the economy has been observed since 2012, which translates into a lack of inflationary pressure on the part of demand. In 2017, the demand gap significantly decreased. Maintaining this trend in the future will mean the emergence of

inflationary pressure on the part of demand, which, assuming its growth, may result in an increase in the inflation rate.

Conclusions

The state of public finances did not cause inflationary pressure in the analyzed period. Inflation remained at a low level, with a tendency to transform in some years into a small deflation.

Forms of financing the public finance deficit (budget deficit) and public debt (state treasury debt) did not lead to their monetization, which could cause inflation. The level of deficit did not generate negative phenomena related to "unpleasant monetarist arithmetic". Partial financing of the deficit on financial foreign markets did not cause a significant increase in the monetary base, which could lead to an increase in inflation.

Public debt (state treasury debt) did not reach the level at which the central bank would be forced to conduct loose monetary policy in order to generate inflation that would reduce its real value. It did not conduct loose monetary policy on its own initiative in order to counteract the increase in interest rates. Nor did it have to carry out debt monetization to reduce its size. The level of debt did not generate inflation expectations.

Public expenditures (budget expenditures) and wage growth did not generate significant inflationary pressure in 2011-2016. An important reason for this phenomenon was the existence of a demand gap in the economy.

In accordance with the theory of economics significant increase of public expenditure growth in 2017 could be responsible (partly responsible) for the increase in inflation in 2017. Maintaining high dynamics of public expenditure growth may stimulate inflation in subsequent periods.

References

Knakiewicz Z., Jurek M., Marszałek P. (2011), *Teorie pieniądza i ich wykorzystanie*, Wydawnictwo Uniwersytetu Ekonomicznego, Poznań.

Lee T., (2000), Ekonomia dla inwestorów giełdowych, WIG-Press, Warszawa.

- Mackiewicz-Łyziak (2014), Wpływ długu publicznego na oczekiwania inflacyjne konsumentów w Europie, *Gospodarka Narodowa*, no **4**, 113 132.
- Mishkin F. S. (2002), *Ekonomika pieniądza, bankowości i rynków finansowych*, Wydawnictwo Naukowe PWN, Warszawa.
- Mrowiec M. (2017), Austriacka szkoła ekonomii. Jak może pomóc wyjaśnić stagnację gospodarki Japonii, Wydawnictwo Naukowe PWN, Warszawa.
- NBP, Raporty o inflacji (2011 2017)
- <u>https://www.nbp.pl/home.aspx?f</u>=/polityka_pieniezna/dokumenty/raport_o_inflacji.html NBP, Monetary agregates,

https://www.nbp.pl/homen.aspx?f=/en/statystyka/miary/miary.html

Rosati D. K., (2017), Polityka gospodarcza, Oficyna Wydawnicza SGH, Warszawa.

Skousen M., (2015), Logika ekonomii, Fijorr Publishing Company, Warszawa.

GUS, http://stat.gov.pl/wskazniki-makroekonomiczne/, access: 2018.11.03.

Euroatat, https://ec.europa.eu/eurostat/data/database, access: 2018.11.03.

OECD, https://data.oecd.org/, access: 2018.11.03.

Krzysztof Dobrowolski Wydział Ekonomiczny, Uniwersytet Gdański Armii Krajowej 119, 81-824 Sopot k.dobrowolski@ug.gda.pl

Grzegorz Pawłowski Wydział Ekonomiczny, Uniwersytet Gdański Armii Krajowej 119, 81-824 Sopot gp558@wp.pl