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# Causes and Effects of Budget Imbalance in Poland and Selected Countries in the World

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ABSTRACT: The budget deficit is almost a common economic phenomenon occurring in many countries of the world at various levels of development. An excessive budget deficit can lead to public debt in the medium and long run, which can become an important factor negatively affecting socio-economic development. The main reason for the existence of public debt is the accumulation of the budget deficit from previous financial years. Increasing the amount of budget expenditure above the level of budget revenues leads to serious difficulties in financing compulsory public tasks, which in principle are assigned to public administration at various levels of competence. This means that in market economy conditions, relatively large amounts of public expenditure around the world due to the liberalization of tax systems, even while maintaining high efficiency of the economy, may cause difficulties in generating current budget revenues on accepted level. In this respect, the situation in the world is varied, but problems with the financing of public tasks are more or less visible. The purpose of this article is to indicate the significance of the problem and try to find solutions leading to a reduction of the budget deficit at the national level in Poland and selected countries. It is therefore about seeking solutions that would refer to the principle of optimal taxation, while maintaining a reasonable tax burden in order to create conditions for the efficient financing of public tasks and would reduce the risk of budget deficit and public debt.

KEYWORDS: public finance, socio-economic development, optimal taxation

## Introduction

The social market economy is associated with the adoption of a socially accepted concept of relatively large expenditure related to the financing of various public tasks.The scope of it has the dimension of accepted social consensus, established within the existing economic, political and organizational order. Such tasks take form of public tasks and, in principle, should be financed from funds of the state budget or from the budgets of local and regional government units, as well as from non-profit organizations. In the conditions of sustainable economic development, in principle, only funds that can be obtained under the existing tax system and other public levies may be allocated to public tasks. Another solution may be the use of private funds for the implementation of public investments under various forms of public-private partnership.

Empirical studies prove that there occurs a surplus of planned expenditures on public tasks over the possibilities of sustainable financing of these tasks. This phenomenon has a general global tendency and is observed both in highly developed countries with a well-established market economy, as well as in other countries of the world with varying levels of socio-economic development, diverse socio-economic systems, as well as diverse social preferences in the sphere of public tasks. Referring to the model of long-term sustainable development, it should be noted that all public tasks can be financed within the framework of the results developed in the real economy. This means that expenditure on public tasks can be financed through the redistribution of earned income under the existing tax system.

The purpose of this paper is to identify the factors of excessive budget deficits and public debt, as well as to draw attention to the effects of these phenomena. Public expenditure generates many effects, the impact of which on the economy and society should be noticed and subjected to macroeconomic analysis, as well as analysis at the lower level of the regional and local public authorities. The budget deficit and public debt constantly accompany development processes in market economy conditions. The main reason for this is the growing importance of the state and its functions in the light of changing public needs and socio-economic conditions (Wheeler 2004, 75-79).

From the point of view of the purpose of the submitted article, the private and public sectors should be delimited, which allows for an unambiguous overall recognition of both revenues and expenses in these sectors. From a financial point of view, the public sector includes taxes, fees and other public charges redistributed to entities and organizational units to carry out public tasks. Therefore, the aforementioned public sector includes both streams of income obtained from the sources mentioned above, as well as streams of expenditure directed to the implementation of public tasks of a tangible and intangible nature. It also includes private funds directed to the implementation of tasks under various public-private partnerships. In general, on the expenditure side, therefore, investments financed from public funds, as well as current expenses related to the provision of broadly understood public services.

**Theoretical background**

Changes taking place in the structure of the world economy and economic changes in individual countries of the world confirm the arguments and suggestions recognized and disseminated on theoretical level, according to which the budget deficit and high public debt cause negative effects, which are clearly seen through the synthetic measure of GDP. This phenomenon has been observed and confirmed by both research on economic growth in developed countries and emerging market economies (Reinhart and Rogoff 2009, 24-27).

A fundamental question therefore arises: can a high level of public debt significantly reduce economic growth? This is an important question for both economic theorists and politicians. While fiscal policy will have an expansive character and may give a positive effect in the short run, it may significantly limit long-run economic growth. The economic effects achieved can therefore be offset by the negative effects of excessive debt. Therefore, it has been accepted to believe that such a scenario can be risky in the long term. Pushing the excessive public debt policy certainly produces results in the short term, however, long-term effects may be difficult to predict in individual countries and their range of impact may lead to the crisis situation. This influence as reported (Das, Papapioannou, Pedras, Ahmed and Surti 2010, 6-21) can be wider and can cover the whole economy, social affairs and politics.

The political effects of increasing indebtedness in the public sector can be considered in accordance with political business cycle theory. This theory says that public spending increases in the run-up to the election. As a rule, public administration increases public investment and increases the volume of current public benefits, wanting to increase their chances of a positive vote. Expenses related to this are more willingly financed from internal loans rather than by issuing debt securities or by increasing of the taxes. In this way, it is possible to achieve effects related to current expenditure in the short term, while investment expenditure in the medium term. The consequence of this will be the necessity of paying off principal installments with interest in the future. This may have negative effects. Nordhaus drew attention to this phenomenon, pointing out that political business cycle theory is directly related to mechanisms resulting from public choice theory (Nordhaus 1975, 169-190).

The budget deficit and the related public debt may have an impact on the general level of prices, incurring liabilities may affect inflationary processes or trigger deflationary processes and may affect the distribution of the incomes. This phenomenon occurs when paying off principal installments and interest. Capital and interest payments related to public entities' obligations are paid within budget finances. These budgets are to a greater or lesser extent supported by taxes levied on middle and low income groups. This can lead to the transfer of resources obtained from middle and low income groups to high income groups, which are usually owners of borrowed capital (Aybarç 2019, 5-7, Chen 2003, 7-9).

Public debt has an impact on savings and investments in the economy. If funds from loans are directed to investments, we will observe an increase in GDP and an increase in personal income. Public sector investments will result in the effects of crowding out and crowding in. Crowding out means the reducing the volume of private sector investment due to increased financing of public expenditure under loans. Due to the increase in the demand for money, the interest rate increases and the investment demand in the private sector is reduced. The crowding out effect therefore means replacing private investment with public expenditure (Barry and Devereux 1992, 199-221). We may be dealing with the appearance of other factors and effects that will differentiate the impact of crowding out and crowding in effects (Baumol and Blinder 2008, 310-311).

It is justified to draw attention to the theory of budget deficits developed by Cukierman and Meltzer. This theory assumes the possibility of redistributing public debt in intergenerational terms. Public debt does not have to be served by one current living generation. Part of the commitments can be transferred over time to the future generations. This solution finds one basic justification, the public investments and their financing always involve very large capital expenditure. An achieving material effects due to the specifics of these investments is not possible by dividing the investment into smaller parts and implementing it in stages. The material effects obtained will be available in the social dimension for many decades, and therefore will also be used by future generations. The question therefore arises as to whether it is justified to transfer some of the costs of such an investment to the future generations by allocating part of the service obligations, resulting from loans taken to finance the investment. Although from a theoretical point of view this solution seems to be logically correct, the question arises whether it would be possible to enforce an intergenerational obligations in the social dimension. This solution seems to be extremely practical, but it requires to take into account a certain conditions (Cukierman and Meltzer 1989, 713-732, Musgrave 1988, 133-145).

Excessive budget deficit and public debt are relatively well studied problems. Under market economy conditions, the scope of public sector activity may be set at a special level. The state model, the scope of tasks assigned to public sector units and the principles of their financing are of key importance here. In the public sector, we have the implementation of a long-term investment policy as a result of social consensus, a set hierarchy of goals, and securing funds for their implementation (The World Bank 2007, 49-64).

This process is strongly conditioned by the endogenous public sector factors. These factors play a fundamental role in the long-term development process, although to some extent they are either permanently or only transiently modified by groups of exogenous factors. Implementation of tasks and achievement of objectives must take into account the financial policy of the state in the short term in the context of the current budgetary economy and in the long term, taking into account the possibility of a negative budget balance and the appearance of public debt. It is important to identify sources of financing, including own funds and external sources, in particular loans. In practical terms, it should strive to provide sources of financing tasks under economic policy while maintaining the principle of sustainable development (Arif and Hussain 2018, 98-114). It is important to identify sources of financing, including own funds and external sources, in particular loans. In practical terms, it should strive to provide sources of financing tasks under economic policy while maintaining the principle of sustainable development.

Political and economic conditions are closely related to the existing needs and production of services of the public sector. The needs for public investments will be shaped differently in highly developed countries than the needs for infrastructure in countries with low or medium development levels. In the first group of countries mentioned here, one should expect redirection of investment expenditure streams to projects aimed at qualitative changes in terms of services and products. In the second group, there are basic infrastructure problems, which means that there is a need to build technical and social infrastructure components that could provide access to basic public services in the first place. This does not mean, however, that countries at a lower level of development do not face the need to implement infrastructure components according to the schemes of the construction of socio-economic infrastructure in highly developed countries took place. Such projects could be financed according to proven scenarios with the use of low-interest investment loans, which may already lead to budgetary imbalances in poor countries and the emergence of excessive public debt. It may therefore lead to a number of adverse effects in the economy of these countries (Cavallo and Daude 2008, 4-8).

From the point of view of planning and implementing investment projects, it is important for investors to maintain relative stability of the socio-economic environment. The stability of the project environment allows for the correct implementation of the project as well as sustainable implementation in the operational phase. Financial stability plays a major role, as there is no risk of exceeding planned investment expenditure. This means that investors in the public sector can expect to achieve planned effects while maintaining the mentioned financial stability.

Crisis phenomena around the world may have a negative impact on the stability of investment projects and the budget results of public sector entities. Changes in external conditions may therefore lead to deterioration of the stability of investment projects already started in the past. A threat may be a change in interest rates on financial markets, changes in the level of various risk categories and, consequently, changes in the value of interest and discount rates adopted for analysis and evaluation of already implemented investment projects. This in turn may lead to the need to verify the planned effectiveness of investment projects, and in particular to verify the net present value of such projects. In a broader sense, the instability of the socio-economic situation may lead to an increase in the overall risk of investment projects and, as a consequence, may lead to investor aversion in relation to new investment projects. As a result, a number of further negative phenomena of a wider range may appear, leading to a deterioration of economic efficiency (Bock and Trück 2011, 105-123).

In theory, the budget deficit means a surplus of expenditure over budgetary revenues generated in a given accounting year. In international comparisons, the budget deficit may show slight conceptual differences in the material scope of this concept. These differences are a direct consequence of the administrative structure of individual countries, which in turn may lead to methodological difficulties when trying to compare each other. In Poland, in macroeconomic terms, we distinguish the state budget deficit, which consists of the budget deficit of government institutions and the budget deficit of local and regional government units. In relation to the local government units, there may be a different situation in individual units, we may be dealing with self-governments that had a budget deficit in a given financial year, we may also be dealing with units that had a budget surplus at the same time (Deloitte Access Economics 2016, 9-23).

Searching for the answer to the question of what underlies the budget deficit and, consequently, the public debt, in accordance with the above-mentioned definition, it is necessary to look for the answer to the question what factors force the increase of the expenditure in relation to the possibilities of their financing? This question cannot be answered unambiguously. We can only refer to the so-called the golden budget rule, according to which the budget would be balanced if the expenditure corresponded to the revenue generated in a given financial year. If the planned and implemented expenses exceed the obtained revenues, then we will have the situation of a budget imbalance in the form of a budget deficit. Budget revenues are a complex economic category, including tax revenues, non-tax revenues as well as domestic and foreign subsidies and subsidies and other sources in the form of public levies (Coccia 2018, 3-15, Pantaleoni 1967, 16-25).

Two possible scenarios can be identified here. The first scenario is the situation when the revenues are too small in relation to the planned expenses, the second scenario is the situation, when the planned expenses are too high in relation to the possibility of generating budget revenues. Therefore, the budget deficit may be the result of two groups of factors, the first group is constituted by factors shaping the positive cash flow forming the budget and factors shaping the negative streams of expenditure financed from budgetary resources.

When it comes to budgetary income-shaping factors, market economy phenomena should be taken into account, in particular business performance and tax flows transferred under the existing tax system. It is from these sources that funds are transferred directly to the state budget and partly to the budgets of regional and local government units and other public finance sector units. Thus, the overall economic situation as well as the broader perception of connections in the external economic environment may have an impact on the budgetary situation. We can identify the following main groups of factors: economic, social and political.

In the group of economic factors, the following should be indicated: the level of socio-economic development and the size of the tax base, current economic situation, economic profile, innovation and ability to generate income, international competitiveness of the economy and foreign exchange, ownership structure and entrepreneurship model, competitiveness of enterprises and the economy in relation to the external environment, components of GDP, their stability and susceptibility to change. In the group of social factors one should indicate: demographic conditions characterizing the population of a given country, human capital, labor resources, mobility, employment and unemployment, the taxpayer's inclination to bear the burden of taxation. In the group of political factors one can distinguish: the general international situation resulting from political, social and health conditions, the state model and the scope of involvement in the implementation of public tasks, premises resulting from the adopted economic policy objectives in the state, premises resulting from the adopted social policy objectives, the political system in given country, political consensus within the tax system, efficiency and effectiveness of tax administration, political arrangements regarding the budget redistribution rate, legal and organizational stability of the state institutions and the principles of economic activity (Szołno-Koguc 2015, 179-188, Jarosiński and Opałka 2014, 13-28).

These groups of factors do not exhaust all of the definable factors that may have an impact on the state's financial policy and the related budgetary and public debt situation in specific national conditions. Two main dimensions of the problem should be indicated: the level of socio-economic development already achieved and the resources possessed, as well as the state model that ultimately determines the place and scope of the public sector in the economy and society.

**Results of empirical research and discussions**

During empirical research, it was found that in most countries of the world the surplus of budget expenditure implemented from the state budget and from budgets at the regional and local level in relation to income is permanent. One of the main and basic reasons is social expectations and the pressure to increase public expenditure on financing current expenses and investments. It can be assumed that the budget deficit has become a new economic category and functions as an element of the state's financial policy. This is justified by the need to approximate the effects of public investments and also the effects of current financial policy, resulting from the need to meet urgent public needs. This means that often the budget deficit is "forced" by important public goals.

It is known that the mismatch of budget revenues and expenses can be easily balanced by taking loans, but this does not change the essence of the problem, because monetary obligations only change the location, while they do not decrease in value. At this point, it is worth paying attention to the figures provided in the text, characterizing the situation in terms of budget revenues per capita in selected countries of the world. Given the international context of the budgetary situation of countries at different levels of development and having diversified economic potential, in order to ensure the possibility of comparing the studied volumes, it was decided to abandon the presentation of absolute data on a country-by-country basis and presented data in relative terms, in the form of total budget revenues per capita. Figures are presented in Table 1.

Table 1. General government revenue per capita in US dollars in selected years 2010-2018 [a)]

| Specification | **2008** | **2010** | **2012** | **2014** | **2016** | **2018** |
|---|---|---|---|---|---|---|
| Australia | 13 328 | 13 891 | 14 677 | 16 388 | 17 554 | 19 011 |
| Austria | 19 988 | 20 351 | 22 785 | 24 261 | 25 559 | 27 789 |
| Brazil | 7 751 | 8 033 | 9 024 | 9 283 | 9 157 | - |
| Canada | 16 058 | 15 711 | 16 560 | 17 947 | 19 109 | 20 741 |
| Czech Republic | 10 718 | 10 844 | 11 780 | 13 014 | 14 424 | 16 883 |
| Finland | 20 865 | 20 026 | 21 779 | 22 666 | 24 211 | 25 883 |
| France | 17 563 | 17 966 | 19 643 | 21 400 | 22 733 | 24 743 |
| Germany | 16 942 | 17 375 | 19 480 | 21 100 | 23 000 | 25 286 |
| Greece | 12 549 | 11 638 | 11 864 | 12 538 | 13 769 | 14 562 |
| Italy | 15 969 | 15 926 | 17 153 | 17 338 | 18 596 | 19 783 |
| Japan | 11 120 | 10 705 | 12 024 | 13 644 | 14 330 | 14 911 |
| Korea | 9 565 | 9 675 | 10 678 | 11 174 | 12 861 | 14 445 |
| Mexico | 3 587 | 3 429 | 4 098 | 4 331 | 4 643 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| Norway | 36 543 | 32 640 | 37 297 | 36 160 | 32 754 | 38 731 |
| Poland | 7 402 | 7 991 | 9 209 | 9 803 | 10 827 | 12 999 |
| Russia | - | - | 9 782 | 9 734 | 8 827 | - |
| Spain | 12 257 | 11 578 | 12 030 | 13 149 | 14 229 | 15 884 |
| Turkey | - | 5 666 | 6 812 | 7 757 | 8 739 | - |
| United Kingdom | 14 361 | 13 856 | 14 339 | 15 488 | 16 846 | 18 158 |
| United States | 15 678 | 14 877 | 15 983 | 18 232 | 19 024 | 19 630 |

[a)]Budgetary and public debt data are derived from the OECD National Account Statistics, which is based on the System of National Accounts (SNA). In the System of National Accounts terminology, general government is composed of central government, state government, local government and social security funds. Revenues include taxes, net social contributions and grants and other revenues. Gross domestic product (GDP) is the standard measure of the value of goods and services produced by a country during a period. Government revenues per capita were calculated by converting total revenues to USD using the OECD/Eurostat.

*Source: OECD (2020), General government revenue (indicator). doi: 10.1787/b68b04ae-en*

The empirical data collected during the survey, referring to most countries of the world and partial data presented in Table 1 indicate that the increase in budget revenues in the years 2008-2018 was a generally observed regularity. Such a tendency is fully justified, for example, by the following changes in the level of GDP over the time and, consequently, by an increase in the tax base. However, the pace of these changes varied. Relatively higher dynamics of changes was recorded in less developed countries with relatively lower socio-economic potential. In the group of selected countries, the highest level of income per capita was recorded in Norway in 2018. The country is characterized by specific factors of economic development, where energy resources, shipbuilding and new technologies industries dominate. It is characteristic that in the years 2008-2018 general government revenue per capita increased by only 6.0%, and therefore in the discussed period we observed a relative stabilization of budget revenues at a very high level. We also observed a similar situation in Switzerland, but due to the limited framework of the study, no detailed data for this country was provided. Figure 1 graphically illustrates changes in the level of general government revenue per capita. To keep the figure more readable, the number of countries presented and the time horizon have been limited.

In Poland, compared to selected countries in the world, the situation in the area of the budget revenues in the years 2008-2018 improved significantly. An increase in the discussed income category by 75.6% was recorded, this is a significant increase, however, it should be remembered that in 2018 the results obtained were among the lowest in the group in question. The relatively low level of income per capita prevented financing under own budgetary means. This does not mean that increasing or maximizing budget revenues in total and per capita is the goal of the socio-economic policy of the state. Rather, it should be borne in mind the pursuit of the optimal amount of state budget funds, giving the opportunity to maintain a balanced and socially acceptable tax system. This means that the factors shaping the size of the budget and affecting the strategies for financing public tasks must be tailored to the needs of the countries being analyzed.

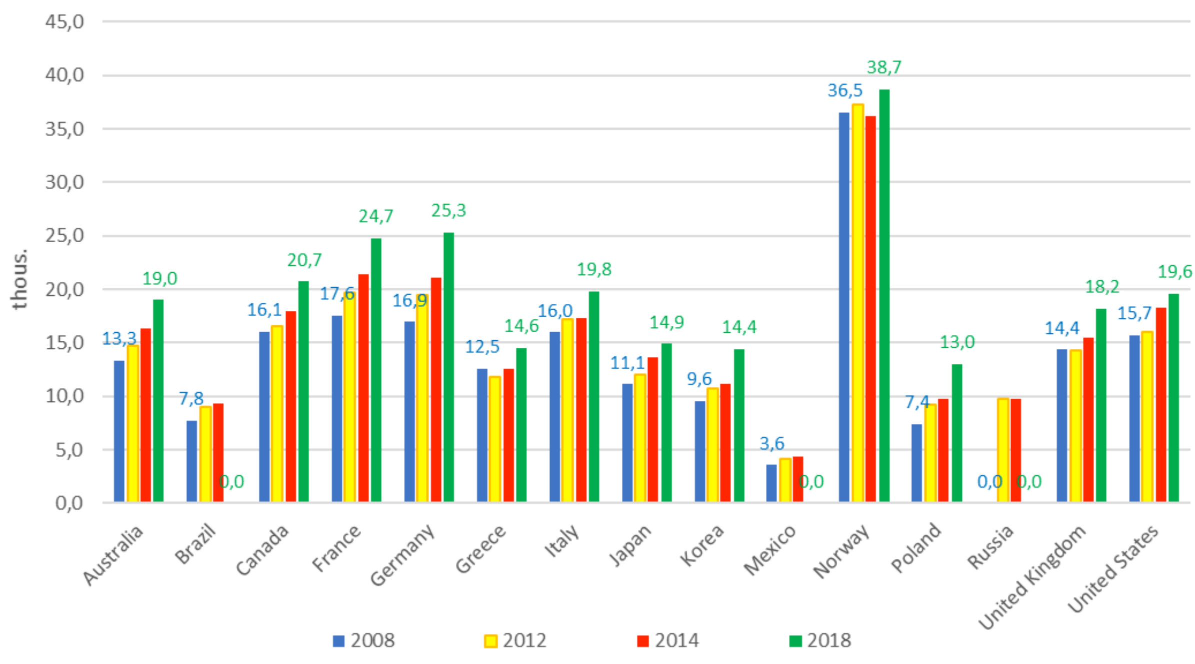


Figure 1. General government revenue per capita in thous. US dollars in selected countries in the years 2008, 2012, 2014, 2018.

When looking for the main factors influencing the expected value of budget revenues, one should examine and assess the current level of technical and social infrastructure development as well as the level and quality of public services. It is easy to see that in highly developed countries equipment is better and the demand for new investments could be lower. Therefore, the growth rate of this income is decreasing. This should be interpreted as reducing the importance of infrastructure factors in the development process. Admittedly, the results of empirical research for selected countries show a surplus of expenditure over income in many of them, but this expenditure in relation to income often gives a negative budget balance. Table 2 provides figures related to budgetary expenditure per capita in the countries surveyed.

Table 2. General government spending per capita in US dollars in the years 2008-2018

| Specification | 2008 | 2010 | 2012 | 2014 | 2016 | 2018 |
|---|---|---|---|---|---|---|
| Australia | 14 829 | 15 800 | 15 943 | 17 498 | 18 482 | 19 349 |
| Austria | 20 606 | 22 219 | 23 803 | 25 593 | 26 367 | 27 676 |
| Brazil | 8 118 | 8458 | 9 385 | 10 249 | 10 259 | - |
| Canada | 15 984 | 17 611 | 17 627 | 17 867 | 19 319 | 20 939 |
| Czech Republic | 11 266 | 11 999 | 12 922 | 13 691 | 14 166 | 16 440 |
| Finland | 19 190 | 21 014 | 22 660 | 23 913 | 24 987 | 26 292 |
| France | 18 709 | 20 441 | 21 520 | 22 968 | 24 251 | 25 913 |
| Germany | 16 987 | 19 114 | 19 476 | 20 827 | 22 401 | 24 270 |
| Greece | 15 689 | 14 792 | 14 106 | 13 492 | 13 634 | 14 262 |
| Italy | 16 873 | 17 403 | 18 214 | 18 407 | 19 558 | 20 718 |
| Japan | 12 554 | 13 905 | 15 114 | 15 753 | 15 714 | 15 908 |
| Korea | 8 927 | 9 395 | 10 336 | 10 746 | 11 987 | 13 252 |
| Mexico | 3 726 | 3 882 | 4 912 | 5 096 | 5 053 | - |
| Norway | 25 043 | 26 309 | 28 303 | 30 477 | 30 362 | 33 239 |
| Poland | 8 062 | 9 530 | 10 090 | 10 725 | 11 489 | 13 074 |
| Russia | - | - | 9 279 | 10 335 | 9 438 | - |

| | | | | | | |
|---|---|---|---|---|---|---|
| Spain | 13 776 | 14 599 | 15 436 | 15 133 | 15 835 | 16 912 |
| Turkey | - | 6 129 | 6 851 | 7 698 | 9 035 | - |
| United Kingdom | 16 246 | 17 231 | 17 465 | 17 782 | 18 325 | 19 234 |
| United States | 19 239 | 20 891 | 20 734 | 21 090 | 22 146 | 23 777 |

*Source: OECD (2020), General government revenue (indicator). doi: 10.1787/b68b04ae-en.*

Comparison of cash flows of the budget revenues and expenses shows that a particularly good situation took place in Norway, as well as in South Korea, Germany, and partly in Greece. However, the reasons for these phenomena are individualized in each of the countries studied, the budget balance was shaped slightly differently. Results of the general government budget balance per capita in US dollars in selected countries in the years 2008, 2014 and 2018 has been presented in Figure 2.

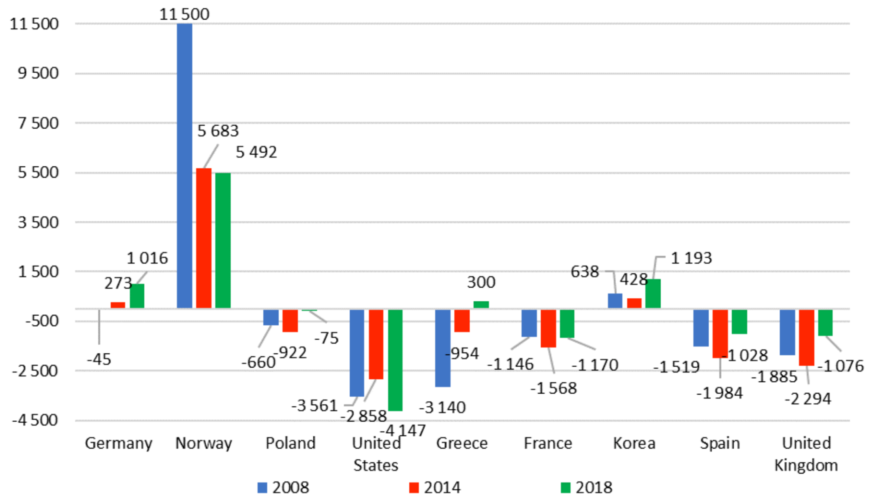


Figure 2. General government budget balance per capita in US dollars in selected countries in the years 2008, 2014 and 2018

As for Greece, the crisis after 2008 forced public authorities to change their management goals, where the main focus was to limit the budget deficit. There are also alarming phenomena consisting in the persistence of the negative budget balance per capita in some highly developed countries: in France, the United States, Spain, Great Britain, Japan, Italy, where the negative balance per capita was over 1 thousand USD[1]. In Poland, in 2008-2018 we also observed a negative budget balance, however, starting from 2013, a reduction in the budget deficit per capita was observed. In 2018 in Poland, this deficit reached USD 75 and was the lowest in the group of countries where such a deficit occurred.

## Conclusions

The budget deficit and public debt may have serious negative effects on sustainable socio-economic development. The risk of negative impact on the economy is particularly pronounced in the wealthiest countries in the world, where the costs of servicing public debt are systematically rising. Empirical research has shown that public

[1] The analysis of the budget balance of selected countries was based on empirical data contained in Table 1 and Table 2, the calculations were made separately and were not attached to the paper.

debt servicing costs increased particularly severely in 2008-2018, causing serious effects in the area of financing public tasks.

It should be assumed that governments and international organizations should pay attention to the causes of short-term budgetary imbalances and the relationship between this imbalance and public debt. The public sector is under pressure to increase spending on public tasks, which results in increased demand for money, in particular for investment capital. Quite often, the shortage of investment capital is compensated by obtaining loans. This seems fully justified, however, provided that future commitments related to it will not create the risk of excessive public debt.

Development policy and the adopted economic doctrine of the state occupy an important place in the public sector. In various models, the scope of responsibility and involvement of the state in the public sphere can be significantly diversified. We can therefore point to a pro-social model, known as a part of the welfare state, where social and living matters and the responsibility of the state towards citizens is high, we can also find such a model of the state where the role of public authorities when it comes to the implementation of public tasks is significantly limited.

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