SUSTAINABILITY OF THE NATIONAL FINANCIAL SYSTEMS OF THE UNITED KINGDOM AND IRELAND

СТІЙКІСТЬ НАЦІОНАЛЬНИХ ФІНАНСОВИХ СИСТЕМ ВЕЛИКОЇ БРИТАНІЇ ТА ІРЛАНДІЇ

UDC 339.7

DOI: https://doi.org/10.32843/infrastruct47-5

Kapranova Olena
Master
Odesa I.I. Mechnikov National University
Rodionova Tatiana
Candidate of Economic Sciences,
Senior Lecturer at the Department
of World Economy
and International Economic Relations
Odesa I.I. Mechnikov National University

The article explores the theoretical foundations of the analysis of financial systems. It also considers the likely consequences for the financial systems' of the United Kingdom and Ireland that could arise in the Brexit process. An analysis of the national financial systems of countries has been carried out, the monetary and exchange rate policies of the countries have been analyzed. Vector autoregression has been modeled to determine the impact of the budget balance, inflation rate and public debt on the countries' GDP. Analysis of the obtained results of modeling the dependence of GDP and economic indicators of the United Kingdom and Ireland for the period under study indicates that there is a mutual dependence between the GDP of the United Kingdom and public debt. Also, a causality was found between Ireland's GDP and government debt, inflation and government budget balance. The constructed model also showed that there is a one-sided relationship that was found between the GDP indicators and the inflation rate in Ireland.

Key words: *GDP, the United Kingdom, state budget, Ireland, inflation, public debt, vector autoregression.*

В статье исследуются теоретические основы анализа финансовых систем. В нем также рассматриваются вероятные последствия для финансовых систем Великобритании и Ирландии, которые могут возникнуть в процессе Брексита. Проведен анализ национальных финансовых систем стран, проанализирована денежно-кредитная и курсовая политика стран. Векторная авторегрессия была смоделирована для определения влияния бюджетного баланса, уровня инфляции и государственного долга на ВВП страны. Анализ полученных результатов моделирования зависимости ВВП и экономических показателей Великобритании и Ирландии за исследуемый период показывает, что существует взаимная зависимость между ВВП Великобритании и государственным долгом. Кроме того, была обнаружена причинно-следственная связь между ВВП Ирландии и государственным долгом, инфляцией и сальдо государственного бюджета. Построенная модель также показала наличие односторонней зависимости между показателями ВВП и уровнем инфляции в Ирландии.

Ключевые слова: *ВВП, Великобритания, государственный бюджет, Ирландия, инфляция, государственный долг, векторная авторегрессия.*

У статті досліджуються теоретичні основи аналізу фінансових систем. У ньому також розглядаються можливі наслідки для фінансової системи Великої Британії та Ірландії, які можуть виникнути в процесі Брекзіта. Висока взаємопов'язаність Ірландії з Великою Британією також робить Ірландію вразливою для Брекзіту. Проведено аналіз національних фінансових систем країн, проаналізовано грошово-кредитна і курсова політика країн. Ймовірні економічні наслідки Брекзіта на першому етапі будуть негативними, британська економіка може зазнати збитків, реальні доходи населення також можуть впасти на кілька років. При наявності на ринку Великої Британії компаній, діяльність яких пов'язана з європейським ринком або в цілому залежить від європейського ринку і відкритих кордонів, компаніям доведеться або переїхати в європейські країни, що негативно вплине на ринок праці, оскільки це призведе до скорочення кількості робочих місць. Аналіз стану державних фінансів Великої Британії та Ірландії показав, що, хоча бюджетний баланс не викликає занепокоєння, стан державного боргу викликає занепокоєння. Модель векторної авторегресії дозволяє визначити вплив балансу бюджету, рівня інфляції та державного боргу на ВВП країни. Результати тесту Грейнджера підтверджують гіпотезу про вплив певних економічних показників на ВВП. Аналіз отриманих результатів моделювання залежності ВВП і економічних показників Великої Британії та Ірландії за досліджуваний період показує, що існує взаємна залежність між ВВП Великої Британії і державним боргом. Крім того, була виявлена причинно-наслідковий зв'язок між ВВП Ірландії і державним боргом, інфляцією і балансом державного бюджету. Побудована модель також показала наявність однобічної залежності між показниками ВВП і рівнем інфляції в Ірландії. Таким чином, аналіз стійкості фінансових систем Великої Британії та Ірландії показав, що коригування відповідних макроекономічних змінних, таких як бюджетний баланс, рівень інфляції і державний борг, повинна бути пріоритетним завданням при розробці макроекономічної політики для забезпечення економічного зростання.

Ключові слова: *ВВП, Велика Британія, державний бюджет, Ірландія, інфляція, державний борг, векторна авторегресія.*

Formulation of the problem. The United Kingdom is one of the most highly developed industrial countries in the world. The country occupies high positions in international ratings, belongs to countries with a high level of economic development. The UK economy ranks fifth in the world in terms of GDP. A sufficiently high competitiveness of the country allows it to produce such goods and services that meet the needs of the world market and allow it to withstand competition in international trade, and Ireland, an agro-industrial country, is developing progressively. Due to its small size, the Irish economy is heavily dependent on foreign trade. The pharmaceutical and information industries are rapidly developing in the countries, the country is attracting large volumes of investments. In 2015, the UK announced its desire to leave the European Union. This step may have implications for the development of the economy not only in the UK, but also in Ireland.

Analysis of recent research and publications. Different authors give different definitions to the concept of a financial system. In the article "The role of the financial system in the market economy" [1], the author gives the following definition to this concept: the financial system is considered as a system of economic relations, financial funds and financial institutions. An essential function of the financial system is to facilitate payments in the economy. The role of the financial system is to provide the necessary mechanisms by which funds can be transferred between surplus units and those who wish to borrow. In the work [2], the authors analyse the importance of the financial system for the real economy using such an analysis method as regression. In the course of the study, the authors point out that the financial system influences the real economy largely through such channels as the interest rate channel, the balance of payments channel, the bank's capital channel and the channel of uncertainty. As the purpose of this article, the authors define the following: to understand and model how the financial system affects the real economy through various channels better. The authors describe each of the listed channels in detail. For example, the interest rate channel describes how the real economy is affected when market interest rates rise, for example, because the central bank increases the refinancing rate.

In the article "Regulation and structural change in financial systems", author Stijn Claessens writes that over the past few decades, financial systems have undergone many changes due to real economic changes, advances in technology, globalization, regulatory shifts and the global financial crisis. As systems change, especially in information processing, trading and interactions between banks and markets, the nature of market failures and sources of systemic risks also change. The author points out in the conclusion that changes in the financial system require a revision of regulatory approaches. The arguments presented in the article and other studies point to the need in many countries for more significant capital market development to support new sources of growth and innovation. Since future economic growth requires more investment in intangible assets and less in the framework of fixed investments, especially the necessary equity financing. For some countries, especially civil law, banking systems, this means fundamental reforms. This can be facilitated by deeper financial integration [3].

After analyzing the results of the research [4–8], it should be concluded that an important indicator that affects the financial system is the state of the balance of payments, as well as the interest rate. In the context of regional integration, the national financial system requires the search for such forms of interaction that meet world requirements. One of the works also indicates that the modernization of the financial system should be accompanied by the reform of public finances, and the formation of a stable financial system should proceed in such a way as to resist external threats and be resistant to internal shocks. Financial systems are subject to change due to advances in technology, globalization, as well as crises in the world.

Formulation of the problem. The aim of the study is to analyse developments in national financial systems of the United Kingdom and Ireland during the Brexit period.

Presentation of the main research material. Brexit could negatively and positively impact FDI flows from the UK as well as from third countries to Ireland. Firstly, foreign direct investment from the UK and third countries to Ireland may decline in the short term due to greater uncertainty. Increased transit costs, which expand the costs of trade in intermediate goods between the EU and Ireland, may also reduce the EU activity in Ireland in the short term. In the longer term, lower UK GDP growth could reduce overall UK outflows of FDI. Lower demand in Ireland could reduce foreign direct investment inflows from the UK as well as from third countries. In addition, in all Brexit scenarios, spending on trade in intermediate goods will increase, which could also trigger changes in UK value chains and reduce UK activity in Ireland.

The UK is one of the largest recipients of FDI among the major progressive economies. About two-fifths (42.6% as of January 2018) of foreign investment in the UK comes from the other EU countries. The Netherlands is officially the largest EU investor in the UK; however, some of this investment may not originate from the Netherlands, but simply be directed there for tax reasons. The share of total investment in the UK coming from the EU fell from 48.8% in 2011.

Leaving the EU could affect the attractiveness of the UK for foreign investors. There are at least three reasons why FDI in the UK can be boosted by the EU membership and, therefore, why it can be reduced by Brexit [8].

Compared to the other 26 EU members, Ireland is heavily dependent on trade with the UK. While Ireland exports about 15 percent of its goods and services exports to the UK, large countries like Germany and France only have half the risk, with 8-9 percent of their exports going to the UK. Smaller countries such as Finland and Denmark export 5-7% of their goods and services to the UK, while Cyprus, Luxembourg and Malta are also heavily dependent on the UK as an export market, which in all cases accounts for most of their exports. Their services go to the UK. The picture is similar in terms of imports, with Ireland being the most dependent on the UK as a source of imports. Many exporting firms, including foreign ones, depend on imports as a contribution to their exports, and both Irish and foreign companies in Ireland receive large amounts of resources from the UK, implying a double impact of Brexit on exporters [8].

Ireland's high trade with the UK makes Ireland vulnerable to Brexit. The high intensity of trade with the UK also highlights the need to diversify Ireland's export base after Brexit. The Gross Domestic Product in the UK has been growing since 2009, but in 2015 there was a slight decrease in this indicator by 5.6% [9]. One of the main reasons for this can be considered the fact that in 2015 in the UK the government adopted a bill that determined the holding of a referendum on the country's exit from the European

Union and a campaign to change the conditions of UK membership in the EU. In 2016, in a referendum, the majority of the population supported the UK's secession from the European Union. In 2016-2017, there was also a decrease in this indicator, and in 2018 GDP increased by 7.1%. According to the UK statistics office, there have been slight fluctuations in GDP over the past five years. However, given recent circumstances, it is clear that the UK has fully recovered from the 2008 global financial crisis, but a future Brexit threatens the stability of UK GDP in the coming years. The goal of the UK's Bank is to keep the inflation rate below 2%. In the period 2014-2016, the country maintained the inflation rate below 2%, but in 2017 the rate increased, this growth is also combined with Brexit, and in the coming years the situation will be unstable, as suggested by the UK Office for National Statistics [10; 11].

Examining data on unemployment in the UK, it should be noted that this indicator has been steadily decreasing since 2011, according to the Office for National Statistics, in 2017 this indicator reached a record low since 1974 [12; 13].

However, the Organization for Economic Co-operation and Development has warned that low unemployment is currently underpinned by robust economic activity, but Brexit could also worsen this figure, putting pressure on the movement of financial activities abroad, which in turn will lead to unemployment if Brexit does force employers to move some of their jobs abroad [17]. The UK exchange rate is fairly stable. The exchange rate appreciated in 2018, indicating that the UK national currency has depreciated, a depreciation that has been observed since 2015, when the UK announced its withdrawal from the European Union.

In 2018, there was an increase in the UK government revenue and expenditure. The Treaty on the Functioning of the European Union obliges member states to avoid excessive budget deficits. The excessive deficit procedure protocol, added to the Maastricht Treaty, defines two criteria and reference values to be met by member governments. These are: deficit (or net borrowing) to gross domestic product (GDP) 3% and debt to GDP ratio – 60%. The state budget deficit is decreasing, and everything does not exceed 3%. Public debt decreased in 2018, but this figure exceeds the target 60% [13].

Ireland's GDP increased significantly in 2018, it should be noted that the country has seen a stable GDP growth. This growth was driven by significant growth in consumer spending, investment and exports. But analysts believe that Brexit could also negatively affect the Irish economy [9]. The consumer price index rose in 2018, but overall this figure is unstable. During 2015–2016, the indicator was stable [14]. The strong performance of the economy is perhaps better reflected by the significant improvement seen in the labor market. The unemployment rate in the country in 2018 decreased significantly compared to 2014 and amounted to 5.8% [15].

The unemployment rate in 2018 was the lowest since the 2008 global crisis. It is believed that emigration was to some extent a factor holding back unemployment after the financial crisis, the labor market has improved dramatically over the past few years, reflecting the strengthening of the economic recovery [16].

State budget receipts in 2018 amounted to 25.41% of GDP. State budget receipts, as well as expenses, are decreasing every year. The balance of the state budget in 2018 was in surplus for the first time in the last 5 years. This figure meets the criteria for the EU membership. Ireland's public debt in the period 2014–2018 decreases, but exceeds the established 60% [17].

The following VAR model was used to study the causal links between the state budget balance, inflation and public debt and GDP:

$$GDP_t = \alpha_1 + \sum_{i=1}^{p} \beta_{1i}\, Econ_{Indtype_{t-i}} + \sum_{i=1}^{p} \gamma_{1i}\, GDP_{t-1} + \varepsilon_{1t}$$
$$Econ_{Indtype_t} = \alpha_2 + \sum_{i=1}^{p} \beta_{2i}\, GDP_{t-i} + \sum_{i=1}^{p} \gamma_{2i}\, Econ_{Indtype_{t-1}} + \varepsilon_{2t} \quad (2.1)$$

Fh

where GDP_t – Gross Domestic Product,

Econ_Ind*type*$_t$ – type of economic indicator (state budget balance, inflation rate and public debt).

Empirical estimates were obtained for annual data, in particular, the indicators of GDP and the balance of the state budget, inflation and public debt from the IMF World Economic Outlook Database and the IMF International Financial Statistics for Great Britain and Ireland (annual data 1998–2019), a total of 6 vector autoregressions were constructed .

Within the framework of vector autoregression of time series, the mutual causality between each type of economic indicator (state budget balance, inflation rate and public debt) and GDP of countries was tested separately. The results of the Granger test (Table 1) support the hypothesis of the impact

Table 1

Granger test for GDP (GDPt) and economic indicators
(Bud_Bal$_t$, Inf_R$_t$, Gov_Debt$_t$ – state budget balance, inflation rate and public debt)

Country	The studied indicator	Lags			
		GDP	Bud_Bal	Inf_R	Gov_Debt
The UK	GDP		2.12 (0.35)	0.18 (0.67)	10.74 (0.00)[a]
	Bud_Bal	2.78 (0.25)			
	Inf_R	0.28 (0.60)			
	Gov_Debt	1.11 (0.57)			
Ireland	GDP		17.12 (0.00)[a]	29.04 (0.00)[a]	43.08 (0.00)[a]
	Bud_Bal	5.26 (0.15)			
	Inf_R	20.13 (0.00)[a]			
	Gov_Debt	8.43 (0.13)			

Note: The sample range is indicated in parentheses by country name. In parentheses, along with Wald-statistics, the values of the P-criterion are given: a, b, c – 1%, 5% and 10% levels of significance, respectively (calculated by the author)

Source: author's calculations

of certain economic indicators on GDP. Analysis of the obtained results of modeling the dependence of GDP and economic indicators (balance of the state budget, inflation rate and public debt) of Great Britain and Ireland for the period under study indicates that there is a mutual dependence between Great Britain's GDP and public debt. Also, a relationship was found between Ireland's GDP and government debt, inflation and government budget balance. There is also a one-sided relationship that has been found between GDP and inflation in Ireland.

Conclusions. After examining the work of various authors, we can conclude that the financial system is a system of economic relations, financial funds and financial institutions that interact to raise funds for investment, to facilitate payments in the economy, financial systems play an important role in the allocation of scarce resources. To study the financial systems of countries, the authors use the analysis of the dynamics of indicators, as well as regression analysis to investigate how various factors affect each other. The GDP indicator in the UK is quite volatile, but in 2018 it showed an increase. In connection with the decision of the UK to leave the European Union in 2015–2016, there was a significant decrease in this figure. A regression analysis was carried out to investigate the impact of individual factors on UK GDP. Regression analysis shows a significant relationship between GDP and factors influenced by it. The balance of the state budget and the state debt are inversely related, the consumer price index is directly related.

Irish GDP, on the contrary, is growing steadily from year to year, this growth is associated with a significant increase in consumer spending, investment and export. Countries are classified as high-income countries in terms of GDP per capita.

Inflation in the UK in 2018 was the lowest in the last two years, because after the declaration of Brexit, the inflation rate has increased significantly, the Bank of Great Britain aims to maintain the inflation rate below 2%. In Ireland, the consumer price index rose in 2018, which is associated with increases in prices for housing, water, electricity, gas and other fuels.

The unemployment rate is showing positive changes, as in both countries there is a decrease in the unemployment rate. In 2018, the UK had the lowest unemployment rate since 1975. At this time, about 100 thousand new jobs were created in the UK, but experts note that Brexit could also provoke companies to move their financial activities abroad, which could lead to an increase in unemployment. In Ireland in 2018, the unemployment rate returned to the level it was before the global financial crisis. They note that the labor market has improved significantly in Ireland, reflecting the strengthening of the economic recovery.

Having examined the state of the UK public finances, it should be noted that in 2018 the level of the state budget deficit, as well as the external debt, decreased. But, since the country is a member of the European Union, it must meet the criteria established – 3% of GDP, state budget deficit and 60% of GDP, external debt. In this case, the country meets only the criterion related to the state budget deficit. The situation is similar in Ireland. Analysis of the obtained results of modeling the dependence of GDP and economic indicators (balance of the state budget, inflation rate and public debt) of the United Kingdom and Ireland for the period under study indicates that there is a mutual dependence between the UK's GDP and public debt. Also, a relationship was found between Ireland's GDP and government debt, inflation and government budget balance. There is also a one-sided relationship that has been found between GDP and inflation in Ireland.

REFERENCES:

1. Caruntu G. A. (2015) The Role Of The Financial System In Market Economy. Economy Series, Constantin Brancusi University, vol. 6, pp. 101–104.

2. Ankargren S., Bjellerup M., Shahnazarian H. (2017) The importance of the financial system for the real economy. *Empirical Economics*, 53(4), pp. 1553–1586.

Available at: https://doi.org/10.1007/s00181-016-1175-4 (accessed 15 August 2020).

3. Claessen S. (2016) Regulation and structural change in financial systems. ECB Forum on Central Banking, pp. 1–34. Available at: https://www.ecb.europa.eu/pub/conferences/ecbforum/shared/pdf/2016/claessens_paper.pdf (accessed 15 August 2020).

4. Yakubovskiy S., Rodionova T., Derkach T. (2019) Impact of foreign investment income on external positions of emerging markets economies, *Journal Transition Studies Review*, 26(1), pp. 81–91. Available at: https://doi.org/10.14665/1614-4007-26-1-005 (accessed 20 September 2020).

5. Yakubovskiy S., Rodionova T., Kyfak A. (2019) “Inflow of Foreign Capital as a Factor of the Development of Current Accounts of the Eastern European Countries”. *Journal Transition Studies Review*, 26(2), pp. 3–14. Available at: https://doi.org/10.14665/1614-4007-26-001 (accessed 20 September 2020).

6. Rodionova T., Yakubovskiy S., Kyfak A. (2019) Foreign Capital Flows as Factors of Economic Growth in Bulgaria, Czech Republic, Hungary and Poland, *Research in World Economy*, vol. 10, no. 4, pp. 48–57. Available at: https://doi.org/10.5430/rwe.v10n4p48 (accessed 20 September 2020).

7. Lomachynska I., Yakubovskiy S., Plets I. (2018) Dynamics of Austrian foreign direct investment and their influence on the national economy. Baltic Journal of Economic Studies, 4(5), 167–174. Available at: https://doi.org/10.30525/2256-0742/2018-4-5-167-174 (accessed 20 September 2020).

8. Tetlow G. (2018) Understanding the economic impact of Brexit. Institute for Government, pp. 1–80. Available at: https://www.instituteforgovernment.org.uk/sites/default/files/publications/2018%20IfG%20%20Brexit%20impact%20%5Bfinal%20for%20web%5D.pdf (accessed 10 September 2020).

9. International Monetary Fund (2020) Gross domestic product. Available at: https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/weorept.aspx?pr.x=51&pr.y=10&sy=2014&ey=2018&scsm=1&ssd=1&sort=country&ds=.&br=1&c=178%2C112&s=NGDPD&grp=0&a= (accessed 5 September 2020).

10. UK’s Office for National Statistics (2020) Consumer price inflation time series. Available at: https://www.ons.gov.uk/economy/inflationandpriceindices/timeseries/l55o/mm23 (accessed 5 September 2020).

11. BBC News (2019) Inflation falls to lowest level in nearly two years. Available at: https://www.bbc.com/news/business-46889433 (accessed 5 September 2020).

12. UK’s Office for National Statistics (2020) Unemployment time series. Available at: https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/timeseries/mgsx/lms (accessed 5 September 2020).

13. Financial Times (2019) UK unemployment rate drops to lowest level since 1974. Available at: https://www.ft.com/content/4cce6f54-7624-11e9-bbad-7c18c0ea0201 (accessed 5 September 2020).

14. Ireland`s Central Statistics Office (2020) Consumer Price Index. Available at: https://www.cso.ie/en/releasesandpublications/er/cpi/consumerpriceindexoctober2019/ (accessed 7 September 2020).

15. International Monetary Fund (2020) Unemployment rate. Available at: https://www.imf.org/external/pubs/ft/weo/2018/02/weodata/weorept.aspx?pr.x=45&pr.y=7&sy=2014&ey=2018&scsm=1&ssd=1&sort=country&ds=.&br=1&c=178%2C112&s=LUR&grp=0&a= (accessed 7 September 2020).

16. Irish Examiner (2018) Unemployment at lowest level in more than 10 years. Available at: https://www.irishexaminer.com/breakingnews/ireland/unemployment-at-lowest-level-in-more-than-10-years-866723.html (accessed 7 September 2020).

17. The Organisation for Economic Co-operation and Development. Available at: https://data.oecd.org/government.html (accessed 7 September 2020).