



Five Years after the Reform: The Financial Sustainability of the Pension System of Georgia and EU27 Countries

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ABSTRACT

The aging population, caused by longer life expectancy and low birth rates, has led to a crisis in the public pension system in many countries. Changes are necessary to ensure the system's sustainability. The primary goal of pension system reforms in many countries is to reduce fiscal pressure in macroeconomic terms and, on a microscale, guarantee decent old age and adequate income for retirees. The paper aims to determine pension systems' sustainability in Georgia and EU countries based on the Open Method of Coordination (OMC) indicators. OMC evaluates pension systems in terms of three main objectives: adequacy, sustainability, and modernization of pensions. Our methodology is based on multivariate statistical analysis and employs synthetic indicators, such as pension expenditure, employment rate of people aged 55–64, and duration of working life for 2010, 2015, 2018, and 2023 sustainability objectives. The results of our study show an adverse change in pension system sustainability indicators from 2010 to 2023 in most European countries, including Georgia. The sustainability index of Georgia's pension system has deteriorated since 2010.

Keywords: Pension System, Pension Sustainability, Pension Reform in Georgia

JEL Classifications: B22, H55, P21, H75, E00, E20

1. INTRODUCTION

In recent years, researchers, public institutions, and individuals have become concerned about the sustainability of current pension systems (Alonso-García et al., 2019), representing the most severe and enduring challenge for developed and developing welfare states (Hinrichs, 2021). This has been due to the increase in life expectancy coupled with the sharp reduction in the birth rate (Pérez-Salamero González, et al., 2021), which has led to the search for a new system that will guarantee their viability in the future (Valls Martínez et al., 2018). Although many reforms have been implemented in recent years, they are considered insufficient to ensure the long-term sustainability of pensions (Alonso-García et al., 2019; Symeonidis et al., 2020).

Pension system reform is on its way in Georgia. Before implementing the reform, the Georgian pension system was limited to a public basic universal flat-rate pension for everyone living

in Georgia at retirement age (65 years for men and 60 years for women). The single objective of essential retirement is to avoid poverty in old age. Still, in Georgia, the retirement needed to be higher to be adequate, and the sustainability of the existing replacement rate (on average, 16,8%) needed to be revised in the long run. Besides, the PAYG pension system was not fair and constituted an incentive for informal work. This is because the pension was paid out to everyone, independent of his/her employment record, residence in the country during the active life, paid taxes, and level of means. It was neither means-tested nor based on the years of residence in the country, as in many developed countries, such as the Netherlands, Denmark, or Sweden.

A Pension Agency established following the 2018 pension reform started collecting and administering the participants' funds of the mandatory Funded Pension Scheme on January 1, 2019. The funded pension scheme in Georgia is based on the 2% + 2% + 2%

principle of accumulation. The employer transfers on behalf of the employee 2% of the untaxed amount of the employee's salary to the employee's pension account. The employer contributes the exact amount to the employee's pension account on their behalf. Based on the amount of the employee's salary (but not more than 2% of the untaxed wage), the contribution for the benefit of the employee is also made by the state.¹

In our previous research (Jgerenaia and Ghaniashvili, 2024), we assessed the adequacy of the pension systems of Georgia and EU countries according to the indicators (ARP, MRI, ARR, S80/S20) of the first group of the OMC framework policy. The research has revealed several trends:

- Only eight of 27 European countries (the Czech Republic, Germany, Estonia, Ireland, Latvia, Lithuania, Hungary, and Sweden) worsened their pension system adequacy ratio between 2010 and 2015.
- From 2015 to 2018, the adequacy ratio of the pension system of most European countries we studied deteriorated. The only exceptions in this case are Ireland, Romania, and the United Kingdom, whose pension system adequacy ratio has improved over the three years since 2015. Indicators of Finland and Sweden remained unchanged.
- As for 2023 data, in most countries, the adequacy indicator of the pension system remained unchanged or worsened. Except for Germany, Ireland, Latvia, Lithuania, Luxembourg, and Romania, their pension system adequacy indicator improved from 2018 to 2023.

The following research aims to determine trends for sustainability indicators for the same countries over the same periods.

2. LITERATURE REVIEW

Many hypotheses have been put forward about the fundamental drivers of the pension reform process, mainly how these have changed since the 2008 financial crisis. In many cases, the emphasis has been on the political process involved. For instance, Armeanu (2010) emphasized that changes in Eastern Europe reflected the role of political parties, their ideological orientation, and the coalition formation process. Anderson (2001) argued that the reforms in Sweden reflected organized labor's presence and political importance. On the other hand, Datz and Dancsi (2014) concluded that political dynamics and institutional considerations alone do not explain the timing of certain decisions and that short-term fiscal considerations played a key role. Maier et al. (2007) suggested that pension reforms (such as those pushing for more individual benefits) reflect changes in social arrangements and more complex life courses. Vis et al., (2011) and Fedotenkov and Meijdam (2011) noted that despite a severe fiscal and economic shock in advanced countries, the standard reaction has been to boost social programs rather than cut back. This suggests that policymakers are moving somewhat beyond the narrow interpretation of pension system sustainability adopted in previous decades, under which to be sustainable, spending on pensions was expected to remain unchanged or even fall.

¹ <https://nbg.gov.ge/en/page/funded-pension-scheme>

In most European countries, adverse demographic trends mean that reforms since the 1990s have shifted from the design of systems based on defined benefits (DB) to defined contribution schemes (DC) where retirement capital, collected over years of work, derived from income-dependent contributions, is the critical value. Furthermore, the role of employee funds and investment is being strengthened by the pillar construction of pension systems. The specific impact of pension reform in European countries on benefits for women and men is summarized by Samek Lodovici (2015). However, the main effect of reforms during this period has been to strengthen the dependence of retirement benefits on the employment period and the earnings amount. This represents a departure from the principles of solidarity and redistribution, with pressure on individual retirement accounts.

Meanwhile, Whitehouse (2014) defined pension system sustainability as a commitment to ensure that current contributions are equivalent to or exceed the current benefits. European Commission (2017) argued that sustainability in pension plans refers to the financial equity between income and obligations. Meanwhile, Hallmark (2016) identified three variables to assure long-term sustainability: the reliability of program fund revenues, the contribution scope of the program, and the level of fund shortage.

3. METHODOLOGY

To assess the financial sustainability of pension systems, we will use the target indicators set by the EU Framework Policy Open Method of Coordination (OMC)² According to the OMC Framework Policy Paper, there are three main groups of indicators for evaluating the effectiveness of pension systems: Adequacy indicators (ARP - The at-risk-of-poverty rate of pensioners; MRI65+ Median relative income ratio of older adults aged 65+, ARR - Aggregated replacement ratio; S80/S20 - Inequality of income distribution for people aged 65+), Sustainability indicators (PE/GDP - Pension expenditure; EMP55-64 - Employment rate of people aged 55-64; DWL - Duration of working life) and Modernization indicators (dARP - Gender difference in the at-risk-of-poverty rate of pensioners, $ARP_{males} - ARP_{females}$; dMRI - Gender difference in the median relative income ratio, $MRI_{males} - MRI_{females}$; dARR - Gender difference in the aggregated replacement ratio, $ARR_{males} - ARR_{females}$).

The study uses a quantitative analysis method of pension systems developed by the Polish scientist Filip Chybalski (Filip Chybalski, 2016). This method is particularly suited to the macro scale of the pension system and considers its global openness. It is based on empirical research and statistics. It allows for comparing the pension systems of several countries or the pension systems of the same country over different periods. In the present study, we will focus on the second group of OMC objectives—the three variables of sustainability indicators.

² OMC is an EU policy framework that, which doesn't represent regulatory norms at the legislative level, but however aims to implement best practices in one area or another (including the management of pension systems) and to promote coordinated policies for governments. (<https://www.europarl.europa.eu/EPRS/EPRS-AaG-542142-Open-Method-of-Coordination-FINAL.pdf>).

The study’s first phase includes searching for statistical data for 2010, 2015, and 2018 indicators in Georgia and 27 European countries: PE/GDP, EMP55-64, and DWL (Statistics in the Appendices).

The next step is to transform the data. Three of the used variables, PE/GDP, have a destabilizing character (the lower the rate, the better). In contrast, in the case of EMP55-64 and DWL indicators, the best pension systems are characterized by a high score for these indicators. Therefore, in the first stage, we transform the PE/GDP variables with the following formula: $x_{ij} = \max x_{ij} - x_{ij}$

The obtained x_{ij} value is the optimal value of the given (i) indicator for the object (j).

Using the normalization formula, We plot all the indicators between intervals [0, 1].

Finally, we convert the indexed indicators into a synthetic indicator of sustainability using the following formula:

$$S_{ij} = \frac{1}{3}(PE / GDP_{ij} + EMP55 - 64_{ij} + DWL_{ij})$$

PE/GDP (Current pension expenses as a percentage of GDP) measures the share of GDP spent on retirement age and, therefore, indicates the macroeconomic value of the pension system.

EMP55-64 (Employment rate in the 55-64 age group) measures the side effects of the pension system on the employment market. The pension system can affect the employment market in different directions, including the younger generation, although the impact is different for the younger and older generations. However, the pension system influences people’s decisions about leaving the employment market.

DWL (Expected Number of Working Years) - Measures the expected number of working years for a person aged 15+ during their lifetime.

The indicators defined by the OMC policy are available on the Eurostat website for European countries. Statistics are obtained from various sources in Georgia, including the Statistics Office of Georgia, the Central Bank of Georgia, and the Ministry of Economy and Sustainable Development of Georgia (Annexes).

4. RESEARCH RESULTS

Quantitative analysis of the pension system can identify the countries and the pension systems that improve their pension sustainability ratios from year to year and those whose situation deteriorated from 2010 to 2023. Examples of successful and unsuccessful countries can provide experiences and recommendations for Georgia.

Our study does not compare pension systems to determine the best pension system. Instead, it aims to assess the financial

sustainability indicators of the countries’ pension systems and draw conclusions regarding Georgia’s action policy in the coming years (Table 1).

Table 1 shows the results of our quantitative survey, which shows how the synthetic indicator of a country’s pension system’s sustainability changes from year to year:

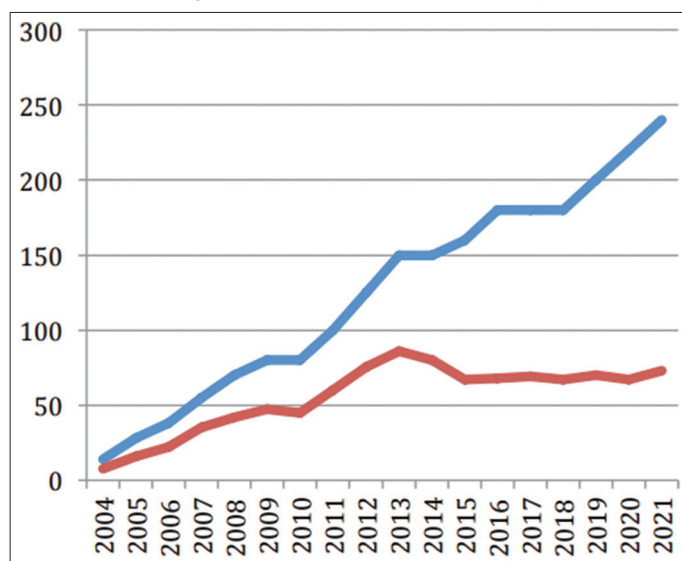
1. Particular attention should be paid to the decline in the financial sustainability of many pension systems from 2010 to 2015. In most cases, the deterioration in the financial sustainability of pension systems since 2010 resulted from the financial crisis of 2007-2008 (Ghaniashvili 2020);
2. The trend mentioned above has changed since 2015. From 2018 to 2023, most countries’ synthetic sustainability indicators improved. The exceptions are Latvia, Austria, Romania, Sweden, Norway, and Georgia.
3. However, in the case of Norway and Sweden, the synthetic indicator of the financial sustainability of the pension system of these countries is still high;
4. For macroeconomic analysis of the pension system, it is also essential to determine its impact on the employment market. Another trend of the survey results is essential in this regard - the five countries with the lowest DWL (average number of working years) are characterized by the low financial stability of the pension system (Italy, Luxembourg, Hungary, Malta, Poland). Moreover, countries with high DWL

Table 1: Research Results

Country	Pension system synthetic rates of sustainability by years			
	2010	2015	2018	2023
EU27	0.29	0.32	0.39	0.42
Belgium	0.2	0.21	0.23	0.32
Czech republic	0.4	0.46	0.59	0.62
Denmark	0.48	0.44	0.61	0.68
Germany	0.45	0.49	0.62	0.62
Estonia	0.51	0.57	0.73	0.85
Ireland	0.48	0.41	0.65	0.79
Greece	0.16	0.03	0.04	0.14
Spain	0.33	0.29	0.31	0.37
France	0.18	0.22	0.26	0.26
Italy	0.05	0.09	0.12	0.19
Cyprus	0.6	0.39	0.55	0.63
Latvia	0.38	0.51	0.66	0.61
Lithuania	0.4	0.53	0.43	0.65
Luxembourg	0.28	0.29	0.24	0.35
Hungary	0.13	0.34	0.43	0.63
Malta	0.18	0.37	0.42	0.57
Netherlands	0.46	0.47	0.62	0.74
Austria	0.7	0.26	0.36	0.33
Poland	0.16	0.24	0.26	0.37
Portugal	0.35	0.28	0.43	0.48
Romania	0.30	0.32	0.33	0.23
Slovenia	0.24	0.25	0.37	0.38
Slovakia	0.33	0.36	0.41	0.54
Finland	0.45	0.41	0.52	0.54
Sweden	0.66	0.63	0.81	0.77
The great britain	0.51	0.49	0.6	
Norway	0.72	0.61	0.76	0.75
Georgia	0.73	0.68	0.68	0.47

Source: Table data is based on the results of a quantitative survey conducted by the author. Data: eurostat; geostat.ge; nbg.gov.ge; world bank

Graph 1: Volume of social pensions in Georgia (2004-2021, in Georgian GEL [blue] and US dollar [red])³



³ Author's graph
source: nbg.gov.ge; ssa.gov.ge

- rates (Iceland, Norway, Sweden, and the Netherlands) are characterized by a high, stable or growing sustainability rate;
5. Georgia's synthetic sustainability indicator has sharply reduced from 0.73 points in 2010 to 0.47 points by 2023.

5. DISCUSSION AND CONCLUSION

The high rate of financial sustainability of the pension system of Georgia compared to other countries in 2010 was due not to the system's financial sustainability but to very low pension rates, which cannot ensure a dignified old age for pensioners. However, it still puts much pressure on the country's budget. After independence, from the very first years, the pension amount was equalized for pensioners of all ages and amounted to 50 US cents in coupons. In 1998, the pension became 14 GEL - this amount remained unchanged until 2004, and due to inflation, its purchasing power decreased significantly. In 2003, the pension amounted to about 11% of the average salary and was significantly lower than the living wage. Since 2004, the state pension has gradually increased. Since 2012, state pensions have increased from 100 GEL to 125 GEL for persons aged 67 and older and 110 GEL for persons under 67. Since 2013, state pensions have been equalized for all and have begun to increase at a small pace. In 2013, the basic pension for each pensioner became 125 GEL. From September 2013, the amount of social pension for all beneficiaries increased to 150 GEL per month. Two years later, the pension increased again, reaching 160 GEL in 2015. The subsequent increase stage was in July 2020, when 30 GEL was added to the pensioners over 70 years of age, which amounted to 250 GEL. Moreover, before that, in 2020, the pensions of old-age pensioners increased by 20 GEL to 220 GEL. From 2021, pensions have increased to 240 GEL for pensioners under 70 and those aged 70 or older - 275 GEL.

As the trend in Graph 1 shows, even though pensions in the nominal expression of Georgian lari have been steadily increasing since 2004, the dollar-converted figure shows a decline since 2013 and a flat since 2015. This is important for the prices of consumer-basket goods in an import-dependent country. The synthetic indicator of the sustainability of the Georgia pension system has been deteriorating over the last few years, from 0.73 in 2010 to 0.47 by the end of 2023. However, it should also be taken into account that the result of 2023 can still be considered a continuation of the social pension system and not a result of the reform. It can be assumed that the sharp deterioration of the synthetic indicator of financial sustainability at this stage is the result of the PAYG system. The DC scheme was launched in Georgia only 5 years ago, so it is too early to discuss its results.

According to Georgia's capital market development strategy for 2023- 2028 in 2025, the total value of pension fund assets is planned to increase to 6.55 billion GEL, 3.25 times the value from 2021. 2028, it will reach 12.1 billion GEL, which means an increase of 6.02 times the value from 2021. So, in addition to the environmental conditions in the local or global economy, the increase in the sustainability ratio of citizens' pensions will significantly depend on the investment policy of the Georgian Pension Agency. According to the regulations in Georgia, the share of foreign assets in the high-risk portfolio is allowed from 40 to 60%, in the medium-risk portfolio - from 20 to 40%, and in the low-risk portfolio - up to 20%. According to the updated strategy of the Pension Agency's Investment Board in 2023, these indicators were determined by 55%, 35%, and 20%, respectively.

At the initial stage of the reform, the Pension Agency invested pension funds only in low-risk portfolios for 5 years. Since August 2023, the Investment Board has had the right to invest accumulated pension assets in medium—and high-risk assets, including assets from global markets. In the long run, investing in international markets is essential, as it protects the best interests of beneficiaries and beats inflation.

One of the main differences between the investment portfolios of the Georgian Pension Agency is the percentage of international assets purchased, and the risks stem from this, as the value of stocks on the stock exchanges often fluctuates. When investing pension contributions in shares, profits are expected over a more extended period, and hence, this package is preferred by those with a long time left before retirement. As of the end of September 2024, the share of stocks in the dynamic portfolio was 51%; in the balanced portfolio, it was 31%, and in the conservative portfolio, it was 17%.

As of October 31, 2024, the Pension Agency's assets totaled 5.8 billion GEL, and the total generated assets reached 1.34 billion GEL. It should be noted that in October 2024, more than 1 year has passed since the launch of 3 portfolios. In this period, the dynamic portfolio is in the lead in nominal and real numbers. From August 2023 to October 2024, the actual growths of the dynamic portfolio amounted to 15.6%; in the same period, the actual growths of the balanced and conservative portfolios were 14.5% and 12.7%, respectively.

Compared to economically developed countries, Georgia will need more means to compensate for mistakes in managing pension assets with taxpayers' money. One of the main reasons for implementing the mandatory DC scheme is that taxpayers, given the increase in the share of pensioners in the population and the average life expectancy, can no longer afford the pension contributions necessary to ensure a valuable retirement life for pensioners.

Taking into account all the trends we discussed above, we consider that:

- (a) Growth at such a rate requires investing in assets with a higher risk than the existing ones; in particular, since capital market assets have a higher rate of return, it is essential for the policy of the Georgian pension agency to increase the limits for investing in the foreign market, as there are not enough opportunities and alternatives in the local capital market;
- (b) Therefore, employment market parameters are of great importance for the sustainability indicators of the pension system and improvement, which should become a priority for countries' governments. This primarily aims to promote employment growth among the elderly population and the emergence of mechanisms that will encourage future beneficiaries of the pension system to stay in the labor market as long as possible;
- (c) The Georgian government should give the pension agency more flexibility in setting limits for low-risk, medium-risk, and high-risk assets to reflect the changes in both international and local markets;
- (d) The returns can be increased if the assets are primarily used to purchase shares or other relatively high-risk instruments. Changing the volume of pension assets placed in local deposits is essential. Giving preference to one instrument, such as bank deposits, especially in the face of rising inflation, cannot ensure stable real yields and a "decent" pension at retirement age; without a riskier investment policy, it would be challenging to increase Georgia's pension systems' adequacy ratio over the years.

Cumulative pension contributions will allow for an increase in pensions in the wake of inflation and, at the same time, will not put growth pressure on the part of the social pension at the expense of the increase in budget taxes. This will be a way to improve the synthetic indicator of the sustainability of the Georgian pension system in the long term.

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ANNEXES

Annex 1

	Sustainability indicators					
	PE/GDP		EMP55-64		DWL	
	2010	2015	2010	2015	2010	2015
EU27	12.6	12.8	44.7	52.1	34.6	35.5
Georgia	3.1	4.7	64.15	71	35	35
Belgium	11.8	12.5	37.3	44.0	32.5	32.6
Czech republic	8.8	8.6	46.5	55.5	33.9	35.2
Denmark	12.6	13.5	55.5	63.0	39.0	38.7
Germany	12.5	11.8	57.8	66.2	36.8	37.9
Estonia	8.6	8.0	53.8	64.5	35.8	37.2
Ireland	8.1	5.8	50.2	55.4	35.3	36.0
Greece	14.8	17.7	42.4	34.3	32.3	32.3
Spain	10.6	12.7	43.5	46.9	34.5	35.0
France	14.4	15.1	39.8	48.7	34.0	34.9
Italy	15.4	16.4	36.5	48.2	29.7	30.7
Cyprus	7.1	10.1	56.3	48.5	36.9	36.2
Latvia	10.1	7.7	47.8	59.4	34.5	35.4
Lithuania	8.5	6.9	48.3	60.4	33.1	34.9
Luxembourg	9.2	9.3	39.6	38.4	31.6	33.5
Hungary	10.7	8.6	33.6	45.3	29.2	32.6
Malta	9.4	7.5	31.9	42.3	30.3	33.7
Netherlands	12.2	13.0	52.9	61.7	38.9	39.9
Austria	14.5	14.6	41.2	46.3	36.0	36.7
Poland	11.8	11.6	34.1	44.3	31.6	32.6
Portugal	13.7	14.9	49.5	49.9	36.9	36.9
Romania	9.4	8.1	40.7	41.1	32.3	32.8
Slovenia	11.0	10.9	35.0	36.6	34.2	34.3
Slovakia	8.2	8.5	40.5	47.0	32.4	33.4
Finland	12.1	13.2	56.2	60.0	36.8	37.7
Sweden	11.4	11.3	70.4	74.5	40.0	41.2
The great britain	11.2	11.3	57.2	62.2	38.0	38.7
Iceland	7.2	8.5	79.8	84.8	44.6	46.6
Norway	8.3	10.3	68.6	72.2	39.5	39.8

Source: Table data is based on the results of a quantitative survey conducted by the author. Data: eurostat; geostat.ge; nbg.gov.ge; world bank

Annex 2⁴¹

	Sustainability indicators					
	PE/GDP		EMP55-64		DWL	
	2018	2023	2018	2023	2018	2023
EU27	12.5	9.8	57.9	63.9	36.2	36.9
Georgia	4.2	3.9 ⁴	66.95	52.3	35	35
Belgium	12.6	9.1	50.3	57.8	33.3	34.7
Czech republic	8.2	7.4	65.1	74	36.3	37.1
Denmark	12.3	9	69.2	74.2	39.5	41.3
Germany	11.9 ⁵	9.3	71.4	74.6	38.7	39.6
Estonia	7.7	4.8	68.9	76	39.1	40.8
Ireland	5.3	3.6	60.4	67.7	37	40
Greece	16.5	13.3	41.1	54.1	32.9	34.2
Spain	12.6	9.4	52.2	59.5	35.2	36.3
France	14.9	12.3	53.3	58.4	35.4	36.8
Italy	15.8	11	53.7	57.3	31.8	32.9
Cyprus	9.2	6.7	60.9	66.9	37.2	39
Latvia	7.4	6.7	65.4	70.9	36.7	37
Lithuania	7	5.8	68.5	69.1	36.7	37.8
Luxembourg	9.3	5.4	40.5	46.3	33.5	35.2
Hungary	7.8	5.7	54.4	69.1	34.1	37
Malta	7.2	5	50.2	56.5	36	38.4
Netherlands	12.5	9.5	67.7	75	40.5	43.7
Austria	14	11.6	54	57.3	37.5	38.6
Poland	11.1	8.2	48.9	58.1	33.5	35.2
Portugal	13.9	10.7	59.2	67.1	38	39.1
Romania	8	7.7	46.3	51	33.5	32.2
Slovenia	9.8	7.9	47	54.2	36.1	36.6
Slovakia	8.5	6.5	54.2	66.6	34.1	35.7
Finland	13.4	10.9	65.4	71.7	38.7	39.9
Sweden	10.9	9.1	78	78	41.8	43.1
The great britain	11		65.3		39.2	
Norway	12.5	7.1	57.9	73.8	36.2	41.1

Source: Table data is based on the results of a quantitative survey conducted by the author. Data: eurostat; geostat.ge; nbg.gov.ge; world bank

- https://idfi.ge/ge/future_of_the_georgian_pension_reform
- In case of Germany, Estonia, Greece, Netherlands, Malta, Romania, Slovakia, Finland, Great Britain and Nirwat datas are uset for 2017