Selected aspects of modernization processes in “Younger Europe”. Past and present

Editors: Paweł Grata, Jarosław Kinal

WYDAWNICTWO
UNIWERSYTETU RZESZOWSKIEGO
RZESZÓW 2023

Review by
dr hab. ANDRZEJ PIECZEWSKI

Editing and proof-reading
JOANNA MAZUR-OKALOWE

Graphic design
EWA KUC

Typesetting
KATARZYNA KOT

Cover design
JULIA SOŃSKA-LAMPART

Project co-financed from state budget funds allocated by the Minister of Education and Science under the "Excellent Science" Program

ISBN 978-83-8277-126-8

2057

WYDAWNICTWO UNIWERSYTETU RZESZOWSKIEGO
35–959 Rzeszów, ul. prof. S. Pigonia 6, tel. 17 872 13 69, tel./faks 17 872 14 26
e-mail: wydaw@ur.edu.pl; https://wydawnictwo.ur.edu.pl
wydanie I; format B5; ark. wyd. 12,5; ark. druk. 14; zlec. red. 41/2023

Druk i oprawa: Drukarnia Uniwersytetu Rzeszowskiego

Zenonas Norkus
Vilnius University, ORCID: 0000-0001-6364-0716

Jurgita Markevičiūtė
Vilnius University, ORCID: 0000-0002-9653-7798

Ola Honningdal Grytten
NHH Norwegian School of Economics, ORCID: 0000-0003-1416-0980

Gatis Krūminš
Vidzeme University of Applied Sciences, ORCID: 0000-0002-9316-3786

New Gross Domestic Product (GDP) Benchmark Estimate for Latvia in 1935[1]

Abstract

The interwar independent Republic of Latvia was among the first ten pioneering states, where a national statistical office published official estimates of total output (1934–1936). Paradoxically; however, Latvia is the Baltic country with the most disputed interwar economic growth performance. According to the authoritative account of Roses and Wolf in *The Cambridge Economic History of Modern Europe* (2010), Latvia's GDP per capita growth rate was the highest among European countries in 1929–1938. It impressively ranked number ten next to Sweden, France, and Norway. However, according to Norkus and Markevičiūtė (2021), it only surpassed Southern European countries, and its growth performance was mediocre. Both these contradictory estimates are derived by indirect methods. This paper contributes to the resolution of this controversy, directly estimating Latvia's GDP in 1935 within the SNA

[1] The authors acknowledge financial support from the Baltic Research Programme project "Quantitative Data About Societal and Economic Transformations in the Regions of the Three Baltic States During the Last Hundred Years for the Analysis of Historical Transformations and the Overcoming of Future Challenges" (BALTIC100), project No. EEA-RESEARCH-174, under the EEA Grant of Iceland, Liechtenstein and Norway Contract No. EEZ/BPP/VIAA/2021/3.

2008 framework, providing gross value-added calculation for 20 ISIC industries at basic and at market prices. It provides a more fine-grained analysis of the composition of Latvia's total output in comparison with interwar historical national accounts, where only 11 industries were distinguished. This estimate provides the benchmark for future research on Latvia's interwar economic growth performance. Converting our estimates into monetary units, used in the Maddison Project Database, we assess Latvia's position in the international GDPpc rankings. coming to conclusions that are closer to Norkus and Markevičiūtė (2021) findings.

Keywords: Gross Domestic Product (GDP); Benchmark GDP Estimate; Latvia 1918–1940; Historical National Accounts; Cross-National Wealth Comparison.

Introduction

We start with explanation why new estimate of the gross domestic product (GDP) of Latvia in 1935 is needed to advance the knowledge of the economic past of this Baltic country (in section 2). This explanation includes brief presentation of the state of art in the historical macroeconomical measurement of the output growth of interwar Latvia. It also clarifies, why current controversies cannot be resolved just by updating pioneering attempts at the estimation of Latvia's national income from interwar time. In the section 3, we describe our methods and sources. Section 4 presents our key findings on the size of Latvia's GDP in 1935 and its composition by industries. Concluding discussion (section 5) uses them for the assessment of Latvia's international wealth standing in the interwar Europes and discusses the venues of continuation of research, presented in this paper.

Why Estimate Gross Domestic Product of Latvia in 1935?

Getting information about the relative economic standing or comparing the growth performance of most European countries during selected periods of 20th century is not a daunting task. Researchers have access to standard data source, namely the famous Angus Maddison "Historical Statistics of the World Economy: 1–2008 AD" data collection, which was updated and extended in the Maddison Project Database (MPD) releases

2013, 2018, 2020[2]. In the last two MPD releases, an user can find even the cross-time and cross-country comparable annual GDP per capita (GDPpc) series of former republics of Yugoslavia since 1952, including those which never were independent states before its dissolution in 1991. For Poland, this series starts with 1400 (!).

This is truly enviable, because for Baltic countries MPD 2020 provides first GDPpc estimates only for 1973 (together with other former Soviet Union republics), and annual series are available only since 1980. This situation stands in the sore contrast with the self-perception of Baltic countries as aged national states, which did celebrate in 2018 their centenary anniversaries. Therefore, international research project „Quantitative Data about Societal and Economic Transformations in the Regions of the Three Baltic States during the Last Hundred Years for the Analysis of Historical Transformations and the Overcoming of Future Challenges (BALTIC100)", involving researchers from Norway (NHH Norwegian School of Economics), Estonia (Tartu University), Latvia (Vidzeme University of Applied Sciences), and Lithuania (Vilnius University) considers as one of its aims the filling out gaps in the available total output (GDP) knowledge.

Rather obviously, this work should start with production of the GDP estimates for interwar period (1918–1940), because inability of historians to produce reliable knowledge about real size of economies during the first period of the independence of Baltic countries is least tolerable for so many stakeholders during the second period of their independence. There are three ways, in which historical GDP estimates can be produced.

Firstly, pioneering interwar time national income calculations can be reused (or ‚recycled') in the framework of the actual System of National Accounts (SNA 2008) version.

Secondly, indirect (econometric) methods can be used, where the GDP value of a country is derived from its values for benchmark countries and selected indicators that are known to be closely associated with GDP.

Thirdly, GDP value can be estimated "from the scratch", compiling historical production (supply), income or consumption (expenditure) accounts according to actual SNA rules for selected benchmark year(s). Among these three methods of the direct estimation of GDP, the produc-

[2] *Historical Development*, https://www.rug.nl/ggdc/historicaldevelopment/ (accessed: 02.01.2023).

tion method is preferable, because it allows knowing not only the size but also the sectoral composition of the gross added value (GVA; which is identical to GDP in the production method). As the second step, physical volume indexes for particular sectors are constructed, and their values for years before and after the benchmark year are established. As the third step, the GVA of sectors at the prices of the benchmark year is derived from volume index values and GVA in the benchmark year. Finally, summing up sectoral GVA for each non-benchmark year, we get the values of total GDP for these years.

Direct methods are reputed to be the most reliable, and this is the reason why we prefer them to indirect methods. In fact, indirect methods were already applied to our problem. Roses and Wolf published GDPpc figures for Estonia and Latvia in 1922, 1929, and 1938 in the authoritative "The Cambridge Economic History of Modern History"[3]. Recently, these were disputed by Norkus and Markevičiūtė, who provided GDPpc estimates for all the three Baltic states for 1913, 1922, 1929, 1938[4]. According to Roses and Wolf (2010, 190), the Latvian GDPpc in 1990 Geary Khamis international Dollars (GK 1990$) was 1929 in 1922, 2798 in 1929, and 4048 in 1938. The alternative figures are 1847, 2347, and 2836, respectively. The differences are most dramatic for 1938, with estimates by Roses and Wolf exceeding those of Norkus and Markevičiūtė by 43%. According to Roses and Wolf, Latvia's GDP per capita growth rate was the highest among European countries – 1929–1938. It impressively ranked number ten next to Sweden, France, and Norway. According to Norkus and Markevičiūtė (2021), it only surpassed Southern European countries, and its growth performance was mediocre.

These differences in results are related to use of the indirect estimation methods by both teams. Roses and Wolf did not disclose their method in the detail necessary to replicate their calculations. Norkus and Markevičiūtė used the method applied by the researchers at the Groningen Growth and Development Centre (GGDC) to fix GDP value gaps for African countries for the

[3] J. R. Roses, N. Wolf, *Aggregate growth, 1913–1950* [in:] *The Cambridge economic history of modern Europe*, vol 2. *1870 to the Present*, eds. S. Broadberry, K. H. O'Rourke K.H, Cambridge 2010, pp. 183–207.

[4] Z. Norkus, J. Markevičiūtė, *New estimation of the gross domestic product in Baltic countries in 1913–1938*, "Cliometrica" 2021, 15, pp. 565–674.

1950s and 1960s in the MPD 2018[5]. In this method, pioneered by Allen[6], GDPpc values for countries with insufficient data are derived from the GDP data of the benchmark country and data on real wages and agricultural employment, using urban population data as a proxy. Norkus and Markevičiūtė calibrated their model with data on food self-sufficiency and the comparative labour productivity in the Baltic and benchmark countries. In the final assessment, they used a geometric mean of GDP values, derived from the application of this method to 13 benchmark countries.

While this could increase the reliability of their estimates, it is still not possible to know for sure whether they are more accurate than the figures of Roses and Wolf. Importantly, even reliable indirect estimates of GDP are of limited usability. While they may allow for cross-national comparisons of the levels of living standards, they are not usable for the fine-grained analysis of productivity variation across industries and regions. The only way to move out of this deadlock is to measure the GDP of Latvia in a direct way.

But why not spare the effort by using pioneering national income estimates from interwar time just properly updating interwar time calculations, because they were also produced by direct method? This way was used by Estonian researchers Jaak Valge and Martin Klesment to derive GDP estimates for Estonia in 1923–1938, basing on the pioneering work of Juhan Janusson on Estonian national income published in interwar time[7]. His methodology was outdated from contemporary view, as Janusson believed that the bulk of service sector is "economically unproductive". However, it was sufficiently transparent to allow for Valge and Klesment to expand Janussons calculations by missing industries and expand them backwards and forwards.

---

[5] J. Bolt, R. Inklaar, H. de Jong, J. L. van Zanden, *Rebasing "Maddison": new income comparisons and the shape of long-run economic development*, https://www.rug.nl/ggdc/html_publications/memorandum/gd174.pdf (accessed: 02.01.2023).

[6] R. C. Allen, *Economic structure and agricultural productivity in Europe, 1300–1800*, "European Review of Economic History", 2000, 3, pp. 1–25.

[7] J. Valge, *Uue majanduse lätteil. Eesti sisemajanduse kogutoodang aastatel 1923–1938,* „Akadeemia" 2003, 10–12, pp. 2202–2228; 11, pp. 2443-87; 12, pp. 2712–35; M. Klesment, *Eesti majandusarengu dünaamika näitajaid sõdadevahelisel perioodil*, „Tuna. Ajalookultuuri Ajakiri", 2008, 1, pp. 25–37; J. Janusson, *Eesti majanduslik areng*, Tallinn 1932; idem, *Eesti majanduse arengu perspektiive,* „Konjunktuur", 1937, 3/4(28/29), pp. 134–144.

Vaskela and Norkus did attempt to do the same for Lithuania, using interwar estimates of national income for 1924, 1938 and 1939[8].

This "Estonian way" of arriving at the output estimates, comparable to MPD figures may appear even more attractive in Latvia's case. According to Studenski, Latvia belonged to the first ten pioneer countries where national statistical offices published estimates of total output[9]. In Latvia, this happened in 1936[10]. These estimates cover 1933–1935 period. Before that, Alfred Ceichners did publish national income estimates for 1925, 1927, 1929–1930, and 1932[11]. However, after examining interwar publications we came to the conclusion that this will not work in Latvia's case[12].

The most important obstacle is that the Latvian statistical office did publish only final figures, but did not report its methodology. It looks like this methodology was not stable, because there are no official publications of national income estimates for later (1936–1938) years, although some figures (including the revision of downward revision of figures for 1933–1935) did leak into the press. However, relevant archival materials did not survive or are still not found, so their methodology remains unknown. Differently from the national statistical office, Alfred Ceichners did explain the methodology of his national income estimates. However, he was not employed to continue this work by the national statistical office, of which (maybe exactly for this reason) he was highly critical[13]. As a result, putting together Ceichners estimates for 1925–1932 and national statistical office estimates for 1933–1938 and applying to them extant price indexes, we do not get sensible time series of real national income[14].

---

[8] G. Vaskela, *Tautiniai aspektai Lietuvos ūkio politikoje 1919–1940 metais*, Vilnius 2014; Z. Norkus, *Kas turtėjo greičiausiai? Baltijos šalių ūkio augimo 1913–1938 metais palyginimas*, „Politologija", 2015, 3(79), pp. 3–54.

[9] P. Studenski, *The Income of Nations. Theory, Measurement, and Analysis: Past and Present*, Washington 1958, p. 151.

[10] *Finanču un kredita statistika 1936*, Valsts statistiskā pārvalde, Rīga 1936.

[11] For survey of Ceichners work see O. Grytten, Z. Norkus, J. Markevičiūtė, J. Šiliņš, *Can the economic growth of interwar Latvia be estimated by contemporary national accounts?*, "Baltic Journal of Economics", 2022, 22(2), pp. 90–109.

[12] Ibidem.

[13] A. Ceichners, *Lauksaimniecība un zemnieki – Latvijas pamats*, Rīga 1937.

[14] For details, see O. Grytten, Z. Norkus, J. Markevičiūtė, J. Šiliņš, op. cit.

Therefore, we come to conclusion, that interwar Latvia's real GDP can only be established, by starting "from the scratch" and measuring its size and composition in the benchmark year as the first step.

Sources and Methods

Because of the reasons explained in the preceding session, from three methods of direct GDP estimation (production (supply), income, and expenditure (consumption)) we prefer the production method. Its application is very data-intensive. Therefore, we selected as benchmark year 1935, which was the year of four censuses, i.e. a population census (12.02.1935), an industrial census (26.06.1935), a trade census (26.06.1935), and agricultural census (26.06–09.07.1935). Estimating intermediate consumption in agriculture, we used data of regular agricultural survey of a sample of farms, representing all four Latvia regions (Kurzeme, Latgale, Vidzeme, Zemgale). Estimating output of the public sector, in addition to published sources we used archival materials. They were of critical importance, in estimating the size of state subsidies to agriculture. The data on subsidies is needed to estimate the size of GDP both at the basic and at market prices.

This distinction of an essential part of the application of the production method according to SNA 2008[15]. Namely, using the production method, GDP is conceived as gross value added (GVA) for all industries of the economy. It is calculated by subtracting the gross value of intermediate consumption IC_i from the gross value of output in this sector (GVO_i):

$$GVA_i^b = GVO_i - IC_i.$$

Intermediate consumption (IC) is the value of goods and services used as inputs to produce the output in the economy. It is valued at the purchaser's (market) prices and includes material expenses and additional service costs, but excludes capital, labour costs, and taxes.

[15] *System of National Accounts 2008*, http://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf (accessed: 02.01.2023); V. Q. Viet, *GDP by production approach: a general introduction with emphasis on an integrated economic data collection framework*, New York 2009.

To distinguish GVA at basic and market (purchaser's) prices, we mark GVA with upper indices, denoting them GVA^b and GVA^m correspondingly. "Basic prices exclude any taxes on products the producer receives from the purchaser and passes on to government but include any subsidies the producer receives from government and uses to lower the prices charged to purchasers"[16]. Basic prices also exclude trade markups and transportation markups[17]. The purchaser's or market price includes trade, transportation markups, and taxes on products (T) less subsidies on products (S):

$$GVA_i^m = GVO_i - IC_i + (T_i - S_i).$$

Industries according to the SNA are discerned by International Standard Industrial Classification (ISIC)[18], including 21 sections, denoted using the alphabetical sequence from A to U (see table 1 below). However, the last industry (U: Activities of extraterritorial organizations and bodies) is irrelevant to our purpose. Although extraterritorial organizations and bodies did exist in the interwar time, represented by the League of Nations and associated bodies (e.g. International Organization of Labour), they are not known to have local branches or agencies active in Latvia by 1935.

After establishing industrial GVA, the total GDP can be achieved by summing up the added value of all industries. However, some industries, e.g. education in countries where it is provided for free, are represented by non-market activities. Here value is generated, although there are no market prices or their role is insignificant. For such industries, the only practicable method to find added value created in these sectors is to use the component approach. It is usable also for industries with no data on output and intermediate consumption. Applying this approach, GVA_i^b is calculated according to the following equation:

[16] *System of National...*, p. 101.

[17] SNA 2008 contains also the concept of producer's prices, which excludes (similarly to basic prices) transportation and trade markups, but includes taxes on products except value added tax (VAT) and excludes subsidies on products.

[18] *International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4,* New York, https://unstats.un.org/unsd/publication/seriesm/seriesm_4rev4e.pdf (accessed: 02.01.2023).

$$GVA_i^b = CE_i + other\ production\ (t - s)_i + CFC_i + NOS_i.$$

CE denotes the compensation of employees. Compensation of employees is the total remuneration in kind or cash payable to employees by employers for work done. It also includes direct social transfers to employees, retired employees, and their families from their employers, payments for sick-leaves, educational grants, and pensions.

"Other production (t-s)" means other taxes less subsidies on production. "Other taxes" are taxes payable by employers to carry out production independently of the quantity of services and goods produced. "They may be payable as license fees or on the ownership or use of land, buildings or other assets used in production or on the labour employed or on the compensation of employees paid"[19]. They should be distinguished from taxes on products, which are taxes charged on values of produced outputs or sales (e.g. value added tax). For taxes on production, "examples include taxes on land or premises used in production or on the labour force employed. The distinction between subsidies on products and other subsidies on production is made on similar grounds"[20].

CFC is the consumption of fixed capital, i.e., the cost of fixed assets used in production. NOS is net operating surplus, which is nearly equal to the net profit of a firm but does not include capital gains from stocks, incidental income gained as interest or dividends, and rental income. It should be distinguished from a gross operating surplus (GOS), which is obtained by deducting CE and other taxes less subsidies on production. It still includes rents on non-produced assets such as patents, land, and subsoil assets. CFC should also be deduced from GOS to obtain NOS. However, practical guidebooks on how to apply SNA allow for exemptions from these rules: "for many developing countries with limited information on fixed assets, the calculation of net operating surplus may not be feasible, thus, gross operating surplus is the only alternative"[21]. Working with the ISIC classification retrospectively, we made use of this exemption when necessary.

[19] V. Q. Viet, op. cit., p. 22.

[20] *The System of National...*, p. 101.

[21] V. Q. Viet, op. cit., p. 22.

Findings: Latvia's GDP in 1935 at basic and market prices

Table 1 provides the summary (in the second column from the left) of our estimation of added value by ISIC 4 sectors in Latvian national currency *Lats* (Ls) at current prices. To make more transparent the economic substance of these figures, they are also expressed as percentages of total GVA (in the ultimate right column)[22]. They provide the picture of a still mainly agrarian economy (with the primary sector creating the largest share of GVA), which however was fairly advanced along the industrialization pathway, as the share of manufacturing (C) together with kindred sectors B, D, E, F did make out 22.6% of total GVA. In this respect, our findings do not differ from the results of the interwar time Latvian pioneers in national accounting. However, our calculation contains much more gain, because even in the semi-official estimates by the Latvian national office only 11 industries (sectors) were distinguished.

Table 1. Latvia's total GDP (in mil. Ls) in 1935

ISIC sector	GVA at basic prices	Taxes on products	Subsidies on products	Other taxes	Percentage in total GVA at basic prices
A. Agriculture, forestry, and fishing	383.5		13.34		36.11%
B. Mining and quarrying	1.92	0.03			0.18%
C. Manufacturing	199.13	3.96			18.75%
D. Electricity, gas, steam and air conditioning supply	13.85	0.03			1.30%

[22] For details of calculation see Z. Norkus, J. Markevičiūtė, O. Grytten, J. Šiliņš, A. Klimantas, *Benchmarking Latvia's economy: a new estimate of gross domestic product in the 1930s*, „Cliometrica", 2022 https://link.springer.com/article/10.1007/s11698-022-00260-x (accessed: 02.01.2023).

ISIC sector	GVA at basic prices	Taxes on products	Subsidies on products	Other taxes	Percentage in total GVA at basic prices
E. Water supply, sewerage, waste management and remediation activities	1.62	0.14			0.15%
F. Construction	23.59	0.70			2.22%
G. Wholesale and retail trade	137.17				12.92%
H. Transportation and storage	44.96				4.23%
I. Accommodation and food service activities	13.63				1.28%
J. Information and communication	8.18				0.77%
K. Financial and insurance activities	13.87	1.09			1.31%
L. Real estate activities	68.90	9.89			6.49%
M. Professional, scientific and technical activities	1.30				0.12%
N. Administrative and support service activities	5.73				0.54%
O. Public administration, defence, and compulsory social security	64.39				6.06%
P. Education	27.64				2.60%
Q. Human Health and Social Work activities	11.54				1.09%
R. Arts, entertainment and recreation	4.82				0.45%
S. Other service activities	11.82				1.11%

ISIC sector	GVA at basic prices	Taxes on products	Subsidies on products	Other taxes	Percentage in total GVA at basic prices
T. Activities of Households as employers and producers for own use	24.35				2.29%
U. Activities of extraterritorial organizations and bodies	0.00				0.00%
Excise taxes				19.90	
Alcohol monopoly				19.99	
Sugar monopoly				10.00	
Import taxes				25.39	
Total economy	**1061.85**	**15.84**	**13.34**	**75.28**	**100.00%**
GDP at market prices	**1139.63**				

Source: Latvia's total GDP (in mil. Ls) in 1935 by industries according to International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, and UN System of National Accounts 2008. Own calculation.

Adding up all sectoral GVA's at basic prices, we obtain a national aggregate of GDP at basic prices, which is equal to 1061.85 mil. Ls. To obtain GDP at market prices, we add product taxes less subsidies. These were excluded when calculating GVA at basic prices of ISIC industries B-F, K, and L. They include excise taxes, import taxes, and net revenue from state monopolies. Importantly, the last ones could serve both as instruments of taxing and of subsidizing. The first interpretation (taxing) applies to state alcohol and sugar monopolies, and the second (subsidising) to state monopoly for food grain. Running alcohol and sugar monopoles, the state did sell these products to consumers significantly above its production cost. We interpret the surplus appropriated by the state treasury, as (indirect) consumption tax. Running a grain monopoly, the state bought grain for human consumption at stable prices, which in 1935 were significantly above international market prices.

As bad conjuncture on grain markets continued for several years, the grain production was in excess of internal demand, and the state was forced

to sell the grain from overstocked storages in international markets significantly below the acquisition prices[23]. Interpreting losses of government as subsidies on products, we follow the SNA 2008 instruction: "losses of government trading organizations <…> consist of losses incurred as a matter of deliberate government policy by government trading organizations whose function is to buy the products of resident enterprises and then sell them at lower prices to non-residents. The difference between the buying and selling prices is an export subsidy"[24].

The pre-estimated net cost (loss) of the grain monopoly 1935–1936 was 4,400,790 Ls[25]. The actual net cost became 7,334,698 Ls[26]. The central government did also maintain stable purchasing prices for flax, pork, and milk. Flax, pork (bacon) and butter (produced from milk), together with wood and wood products, were the main staples of Latvian exports. State-controlled production and trade agencies, which had monopoly rights to buy pork and butter for exports, paid stable prices for bacon and milk to farmers and received compensations for net losses from selling their products abroad. In the 1935–1936 state budget 5.9 mil Ls were allocated to subsidize flax producers[27].

However, due to rising flax prices and lower-than-expected flax harvests, the state was able to purchase and re-sell flax at international markets with no loss[28]. The costs of maintaining stable milk and pork (bacon) in 1935 were

[23] A. Stranga, *Kārļa Ulmaņa autoritārā režīma saimnieciskā politika: (1934–1940)*, Rīga 2017, pp. 58-59.

[24] *The System of National...,* p. 149.

[25] Latvian State Historical Archive 1307, 1, 1217, 800.

[26] *Valsts kontroles revīzijas darbības pārskats par 1935/1936 saimniecības gadu*, Latvijas Republikas Valsts kontrole, p. 55, Rīga 1936. Differently from the subsidies to support bacon and butter export, those to run food grain monopoly were classified under Ulmanis regime (they are not reflected in the officially published 1935/1936 state budget). In the State controle office report on the budget execution, net loss inflicted on state budget by running of food grain monopoly is concealed by the description of this loss as a „loan from the Ministry of Finance". The reason for this secrecy was that food grain monopoly increased price of bread for urban consumers. Bread producers had to pay for a ton of food grain more than state received selling it abroad.

[27] Latvian State Historical Archive 1307, 1, 1217, 771.

[28] P. Vanags, *Valsts ienemumi 1935/1936 gada*, „Ekonomists", 1936, 18, p. 626.

3 271 112 and 2 707 055 Ls respectively. There were also minor losses from promotion of exports of eggs and chees, with total subsidies on products making 13.34 mil. Ls. So they were only slightly less than total taxes on products (15.84 mil.Ls). Adding the total taxes less subsidies to the aggregated GDP at basic prices (1061.85 mil. Ls) we get GDP at market prices 1139.63 mil. Ls. According to the 12.02.1935 Population Census, Latvia's population was 1 950 502[29]. Hence, its GDPpc in 1935 was 544.40 Ls at basic prices and 584.27 Ls at market prices.

Final considerations: tasks of further research and Latvia's international wealth standing in 1935

There are two major uses of the GDP figures in economical historical research. Firstly, they enable researchers to find out the rates of economic growth during specific periods. The use of our results for this aim is the major task of further research. Next steps in this research is construction of the physical volume indexes for relevant periods. Ideally, such indexes should be constructed for all ISIC sectors. However, many sectors of importance in contemporary postindustrial economies (e.g. M (Professional, scientific and technical activities) and R (Arts, entertainment, and recreation)) still made only a minuscule contribution to total GDP. Therefore, they can be agglomerated with kindred sectors, with a single output index covering the whole group of ISIC 4 industries.

The second use is a cross-national comparison to find out Latvia's position in the international economic productivity or wealth ranking. Some authors still argue that conversion of the GDP estimate (in the national monetary units) into leading international currency at the foreign exchange rate may give satisfactory or even the best result[30]. However, this barely can apply to Lats in 1935, because since the breakdown of the international gold standard in September

[29] Z. Norkus, A. Ambrulevičiūtė, J. Markevičiūtė, V. Morkevičius, G. Žvaliauskas, *Latvian Population by Sex and Age in 1935 Census Data*, https://hdl.handle.net/21.12137/CZV5CH (accessed: 02.01.2023).

[30] R. P. Korzeniewicz, A. Stach, V. Patil, T. P. Moran, *Measuring National Income: A Critical Assessment*, „Comparative Studies in Society and History", 2005, 46(3), pp. 535-86; S. Babones, *Methods for Quantitative Macro-Comparative Research,* Los Angeles 2014, pp. 59-66.

1931 Latvian currency was under strict foreign exchange control by the government with its unavoidable companion – the black market in currencies[31].

Therefore, we follow the standard approach of calculating purchasing power parities. Preferably, they should allow converting GDP estimates in 1935 Lats into monetary units, used in the most encompassing real GDP database, which is MPD. In the most recent MPD release, these units are 2011 international Geary Khamis $. The shortest way to convert 1935 Latvia's GDP in Lats into 2011 GK$ is to establish PPP between 1935 Lats and national currencies of selected comparator countries which already have their GDP estimates for 1935 in the 2011 GK$.

Important consideration in selecting such countries is similarity of consumption habits and so the consumer expenditure composition. However, this composition depends not only on culture ("tastes"), but also on their richness (it is well known that consumers in poor countries spend more on food). All considered, we used as comparator countries Sweden and Lithuania. They are culturally close to Latvia (therefore, the same basket of goods and services was used for all three countries)[32], but Sweden was (and remains) richer, while Lithuania was poorer than Latvia. Besides that, Swedish historical national accounts are reputed as reliable[33]. There are also no no-

[31] See A. Aizsilnieks, *Latvijas saimniecības vēsture, 1914–1945*, Stockholm 1968; G. Krūmiņš (ed.), *Latvijas tautsaimniecības vēsture*, Rīga.

[32] We thank Adomas Klimantas for sharing his price data on Lithuania and Sweden. Z. Norkus, A. Ambrulevičiūtė, J. Markevičiūtė, V. Morkevičius, G. Žvaliauskas 2021, *Annual Average Retail Prices of Food in Lithuania, 1913-1939,* V3, „Lithuanian Data Archive for HSS (LiDA)", 2022 https://hdl.handle.net/21.12137/UN7JZ9 (accessed: 02.01.2023); Z. Norkus, A. Ambrulevičiūtė, J. Markevičiūtė, V. Morkevičius, G. Žvaliauskas 2021, *Annual Average Retail Prices of Non-Food Goods in Lithuania, 1913-1939,* V3, „Lithuanian Data Archive for HSS (LiDA)", 2022 https://hdl.handle.net/21.12137/QFUBCC (accessed: 02.01.2023); Z. Norkus, A. Ambrulevičiūtė, J. Markevičiūtė, V. Morkevičius, G. Žvaliauskas, *Annual Average Retail Prices of Food in Latvia, 1913-1939,* V3, „Lithuanian Data Archive for HSS (LiDA)", 2022 https://hdl.handle.net/21.12137/NISDN4 (accessed: 02.01.2023); Z. Norkus, A. Ambrulevičiūtė, J. Markevičiūtė, V. Morkevičius, G. Žvaliauskas 2021, *Annual Average Retail Prices of Non-Food Goods and Other Selected Services in Latvia, 1913-1939,* V3, „Lithuanian Data Archive for HSS (LiDA)", 2022 https://hdl.handle.net/21.12137/BHSV3V (accessed: 02.01.2023).

[33] R. Edvinsson, *Main page. Sweden*. 2018, http://www.historicalstatistics.org (accessed: 02.01.2023).

ticeable criticisms of the conversions of the estimates of Swedish national income in the national currency at current prices into international dollars at constant prices of 1990 or 2011 (differently from other prospective comparator country Norway). Lithuania's benchmark GDP estimate (for 1937) was only recently published (together with conversion into MPD monetary units)[34].

Adjusting the Latvian–Swedish and Latvian-Lithuanian GDPpc capita comparisons for differences in price levels, we computed three PPP indices (Laspeyres, Paasche, and Fisher) for each of these comparisons and used as final Latvia's GDPpc values the geometric means of GDPpc values derived by using Fisher index. To make our results comparable both to MPD 2013 and MPD 2020 releases, we converted Latvian GDP values both into 1990 GK$ (used in MPD 2013) and into 2011 GK$ (used in MPD 2020). This makes our findings cross-nationally comparable (see Table 2).

Table 2. International GDP per capita for 1935

Rank	Country	GDP pc (GK$ 1990)		Rank	Country	GDP pc (2011 $)
1	Switzerland	7697.80		1	United States	9681.00
2	United Kingdom	5799.01		2	Switzerland	9479.00
3	Denmark	5479.69		3	United Kingdom	9244.00
4	United States	5466.84		4	Denmark	8735.00
5	Netherlands	4929.46		5	Netherlands	7857.00
6	Belgium	4894.20		6	Belgium	7801.00
7	Sweden	4491.73		7	Sweden	7160.00
8	Germany	4119.81		8	Norway	7003.00
9	France	4085.93		9	Germany	6567.00
10	Norway	4069.24		10	France	6513.00
11	Finland	3092.66		11	Finland	4930.00
12	Ireland	2966.00		12	Ireland	4728.00
13	Austria	2906.66		13	Italy	4670.00

[34] A. Klimantas, *Estimation of GDP PPP of interwar Lithuania, 1919–1940*, Oxford 2020; A. Klimantas, A. Zirgulis, *A new estimate of Lithuanian GDP for 1937: How does interwar Lithuania compare?*, „Cliometrica", 2020, 14, p. 227–281.

14	**Latvia**	**2776.05**		14	Austria	4634.00
15	Italy	2654.11		**15**	**Latvia**	**4424.94**
16	Estonia	2598.00		16	Greece	3953.00
17	Spain	2582.77		17	Hungary	3939.00
18	Greece	2479.91		18	Czechoslovakia	3841.00
19	Hungary	2471.22		19	Japan	3825.00
20	Czechoslovakia	2409.90		20	Spain	3806.00
21	Japan	2120.47		21	Lithuania	3029.01
22	Lithuania	1900.37		22	Soviet Union	2971.00
23	Soviet Union	1863.87		23	Portugal	2660.00
24	Portugal	1668.65		24	Poland	2546.00
25	Poland	1596.71		25	Bulgaria	1992.00
26	Bulgaria	1249.58		26	Yugoslavia	1672.00
27	Romania	1196.21		27	Romania	674.00
28	Yugoslavia	1049.24		28	Estonia	Nd

Sources: Maddison Project Database, version 2013; Maddison Project Database, version 2020; O. H. Grytten, *Revising growth history: new estimates of GDP for Norway, 1816–2019*, „Economic History Review", 2022 75(1) (for Norway); J. Valge, op. cit. (for Estonia); . Norkus, J. Markevičiūtė, O. Grytten, J. Šiliņš, A. Klimantas, op. cit. (for Lithuania).

Using MPD (2013) and MPD (2020) data, we replace Norwegian data with the newest and more precise calculations by Grytten[35]. The GDP numbers for Norway in 1990 international Geary Khamis $ are underestimates due to the problem with low oil prices in 1990, which make appear Norwegian GDP back in time low too. This accounts for a marked increase in the rank of Norway due to change of base year from 1990 to 2011. For Lithuania, we are using updated figures from work by Klimantas and Zirgulis[36]. We include also an estimate for Estonia by Valge in 1990 GK$[37].

[35] O. H. Grytten, *Revising growth history: new estimates of GDP for Norway, 1816–2019*, „Economic History Review", 2022, 75(1), pp. 181–202. The MPD (2020) estimate for Romania in 2011 international $ (see Table 2) is obvious mistake, as in 1990 international $ it was nearly twice higher (according to MPD (2013). It makes Romania in 1935 to appear as poorest country in the world (among those with data available).

[36] A. Klimantas, A. Zirgulis, op. cit.

[37] J. Valge, op. cit.

The position of particular countries differs in both rankings. So Portugal was richer than Poland in 1935 according to MPD 2013, but poorer according to MPD 2020, while Switzerland was richer than US according to MPD 2013 but poorer according to MPD 2020. However, these differences reflect only changes in the knowledge of particular countries by 2013 and by 2020 as well as changes in the methodology applied by the experts of Groningen Growth and Development Centre, updating MPD. Anyway, in the context of both sets of data, Latvia emerges as the richest country of Eastern Europe, its GDPpc surpassing by some 74% the GDPpc of Poland (Poland=100%) according to both MPD 2013 and MPD 2020.

Comparing our GDP findings of Latvia in 1935 with the previous estimates, we can conclude that Roses and Wolf with 4048 GK$ 1990[38] were more off mark than Norkus and Markevičiūtė with 2836 GK$ 1990[39]. In 1935–1938 Latvia's GDPpc could grow from 2776 to 2836 GK$ 2011, but "big leap" from 2776 to 4048 GK$ is not credible. Nevertheless, the ultimate resolution of differences in the picture of Latvia's interwar output growth between these authors will be possible only after Latvia's GDP in the years preceding and following 1935 will be estimated using sectoral volume indexes and our benchmark estimate. This is the task for further research.

Bibliography

Aizsilnieks A., *Latvijas saimniecības vēsture, 1914–1945*, Stockholm 1968.

Allen R.C., *Economic structure and agricultural productivity in Europe, 1300–1800*, "European Review of Economic History", 2000, 3.

Babones S., *Methods for Quantitative Macro-Comparative Research,* Los Angeles 2014.

Bolt J., Inklaar R., de Jong H., van Zanden J.L., *Rebasing "Maddison": new income comparisons and the shape of long-run economic development*, https://www.rug.nl/ggdc/html_publications/memorandum/gd174.pdf (accessed: 02.01.2023).

Ceichners A., *Lauksaimniecība un zemnieki – Latvijas pamats*, Rīga 1937.

Edvinsson R., *Main page. Sweden*. 2018, http://www.historicalstatistics.org (accessed: 02.01.2023).

Finanču un kredita statistika 1936, Valsts statistiskā pārvalde, Rīga 1936.

Grytten O.H., *Revising growth history: new estimates of GDP for Norway, 1816–2019*, „Economic History Review", 2022, 75(1).

[38] J. R. Roses, N. Wolf, op. cit.

[39] Z. Norkus, J. Markevičiūtė, op. cit.

Grytten O., Norkus Z., Markevičiūtė J., Šiliņš J., *Can the economic growth of interwar Latvia be estimated by contemporary national accounts?*, "Baltic Journal of Economics", 2022, 22(2).

International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, New York, https://unstats.un.org/unsd/publication/seriesm/seriesm_4rev4e.pdf (accessed: 02.01.2023).

Janusson J., *Eesti majanduslik areng*, Tallinn 1932.

Janusson J., *Eesti majanduse arengu perspektiive,* „Konjunktuur", 1937, 3/4(28/29).

Klesment M., *Eesti majandusarengu dünaamika näitajaid sõdadevahelisel perioodil*, „Tuna. Ajalookultuuri Ajakiri", 2008, 1.

Klimantas A., *Estimation of GDP PPP of interwar Lithuania, 1919–1940*, Oxford 2020.

Klimantas A., Zirgulis A., *A new estimate of Lithuanian GDP for 1937: How does interwar Lithuania compare?,* „Cliometrica", 2020, 14.

Korzeniewicz R.P., Stach A., Patil V., Moran T.P., *Measuring National Income: A Critical Assessment*, „Comparative Studies in Society and History", 2005, 46(3).

Krūmiņš G. (ed), *Latvijas tautsaimniecības vēsture*, Rīga.

Latvian State Historical Archive 1307, 1, 1217, 800.

Latvian State Historical Archive 1307, 1, 1217, 771.

Norkus Z., *Kas turtėjo greičiausiai? Baltijos šalių ūkio augimo 1913–1938 metais palyginimas*, „Politologija", 2015, 3(79).

Norkus Z., Markevičiūtė J., *New estimation of the gross domestic product in Baltic countries in 1913–1938*, "Cliometrica" 2021, 15.

Norkus Z., Ambrulevičiūtė A., Markevičiūtė J., Morkevičius V., Žvaliauskas G., *Latvian Population by Sex and Age in 1935 Census Data*, https://hdl.handle.net/21.12137/CZV5CH (accessed: 02.01.2023).

Norkus Z., Ambrulevičiūtė, A., Markevičiūtė, J., Morkevičius, V., Žvaliauskas, G. 2021, *Annual Average Retail Prices of Food in Lithuania, 1913–1939* V3, "Lithuanian Data Archive for HSS (LiDA)", 2022 https://hdl.handle.net/21.12137/UN7JZ9 (accessed 02.01.2023);

Norkus, Z., Ambrulevičiūtė A., Markevičiūtė J., Morkevičius V., Žvaliauskas G., 2021, *Annual Average Retail Prices of Non-Food Goods in Lithuania, 1913–1939,* V3, „Lithuanian Data Archive for HSS (LiDA)", 2022 https://hdl.handle.net/21.12137/QFUBCC (accessed: 02.01.2023).

Norkus, Z., Ambrulevičiūtė A., Markevičiūtė J., Morkevičius V., Žvaliauskas G., *Annual Average Retail Prices of Food in Latvia, 1913–1939,* V3, „Lithuanian Data Archive for HSS (LiDA)", 2022 https://hdl.handle.net/21.12137/NISDN4 (accessed: 02.01.2023).

Norkus, Z., Ambrulevičiūtė A., Markevičiūtė J., Morkevičius V., Žvaliauskas G., 2021, *Annual Average Retail Prices of Non-Food Goods and Other Selected Services in Latvia, 1913–1939,* V3, „Lithuanian Data Archive for HSS (LiDA)", 2022, https://hdl.handle.net/21.12137/BHSV3V (accessed: 02.01.2023).

Norkus Z., Markevičiūtė J., Grytten O., Šiliņš J., Klimantas A., *Benchmarking Latvia's economy: a new estimate of gross domestic product in the 1930s*, „Cliometrica", 2022 https://link.springer.com/article/10.1007/s11698–022–00260–x (accessed: 02.01.2023).

Roses J.R., Wolf N., *Aggregate growth, 1913–1950* [in:] *The Cambridge economic history of modern Europe*, vol 2. *1870 to the Present,* eds. S. Broadberry, K. H. O'Rourke, Cambridge 2010.

Stranga A., *Kārļa Ulmaņa autoritārā režīma saimnieciskā politika: (1934–1940)*, Rīga 2017.

Studenski P., *The Income of Nations. Theory, Measurement, and Analysis: Past and Present*, Washington 1958,

System of National Accounts 2008, http://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf (accessed: 02.01.2023).

Valge J., *Uue majanduse lätteil. Eesti sisemajanduse kogutoodang aastatel 1923–1938,* "Akadeemia" 2003, 10–12: 2202–2228, 2443–2487, 2712–2735.

Vanags P., *Valsts ienemumi 1935/1936 gada*, "Ekonomists", 1936, 18.

Vaskela G., *Tautiniai aspektai Lietuvos ūkio politikoje 1919–1940 metais*, Vilnius 2014.

Viet V.Q., *GDP by production approach: a general introduction with emphasis on an integrated economic data collection framework*, New York 2009.

Historical Development, https://www.rug.nl/ggdc/historicaldevelopment/ (accessed: 02.01.2023).

Nowe reperowe oszacowanie produktu krajowego brutto (PKB) dla Łotwy w 1935 roku

Abstrakt

Niepodległa w okresie międzywojennym Republika Łotewska była jednym z dziesięciu pionierskich państw, w których krajowy urząd statystyczny opublikował oficjalne szacunki dotyczące produkcji ogółem (1934–1936). Paradoksalnie jednak Łotwa jest krajem bałtyckim o najbardziej spornych wynikach wzrostu gospodarczego w okresie międzywojennym. Według autorytatywnej relacji Roses and Wolf w *The Cambridge Economic History of Modern Europe* (2010) tempo wzrostu PKB na mieszkańca Łotwy było najwyższe wśród krajów europejskich w latach 1929–1938. Łotwa imponująco zajęła dziesiąte miejsce obok Szwecji, Francji i Norwegii. Jednak według Norkusa i Markevičiūtė (2021) przewyższyła tylko kraje Europy Południowej, a wzrost jej PKB był mierny. Oba te sprzeczne szacunki są wyprowadzane metodami pośrednimi. Niniejszy artykuł przyczynia się do rozwiązania tej kontrowersji, bezpośrednio szacując PKB Łotwy w 1935 r. w ramach SNA 2008, dostarczając obliczenia wartości dodanej brutto dla

20 branż ISIC w cenach podstawowych i rynkowych. Zapewnia bardziej szczegółową analizę składu całkowitej produkcji Łotwy w porównaniu z międzywojennymi historycznymi rachunkami narodowymi, w których wyróżniono tylko 11 branż. Szacunek ten stanowi reper dla przyszłych badań nad wynikami wzrostu gospodarczego Łotwy w okresie międzywojennym. Przeliczając nasze szacunki na jednostki monetarne, wykorzystywane w Maddison Project Database, oceniamy pozycję Łotwy w międzynarodowym rankingu PKB na mieszkańca, dochodząc do wniosków bliższych ustaleniom Norkusa i Markevičiūtė (2021).

Słowa kluczowe: produkt krajowy brutto (PKB); oszacowanie PKB reperowe, Łotwa 1918–1940, historyczne rachunki narodowe, międzynarodowe porównanie bogactwa