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**PECULIARITIES OF INCOME
DISTRIBUTION IN SELECTED
COUNTRIES**

Manuela Tvaronavičienė,
*Vilnius Gediminas Technical
University,
Vilnius, Lithuania,
E-mail:
manuela.tvaronavicienel@vgtu.lt*

Rimantas Gatautis
*Kaunas University of Technology,
Kaunas, Lithuania,
E-mail: rimantas.gatautis@ktu.lt*

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ABSTRACT. The research is dedicated to the analysis of income distribution in selected countries. Middle segment of households with disposable income between 10 000 USD and 30 000 USD is in the focus of the performed here analysis. The following assumption is being raised: the pattern of income distribution, and especially the size of middle class are the preconditions for sustainable entrepreneurship in every country. We compare the current income distribution in developed countries with that in slightly less developed countries. After that, we select Latvia and Lithuania for a deeper analysis: we forecast the middle segment changes during the medium time span (until 2020) and for a longer time span (until 2030). Along with comparative analysis modelling of various scenarios is also performed (such as the recession of the Eurozone, no-compromised Brexit etc.). Finally, forecasting of middle-income segment development in Latvia and Lithuania for long time span is performed in USD and Purchasing Power Parity expressions. The obtained results signal about the comparative insensitivity of Latvia and Lithuania to external shocks with worsening of middle class position. The performed research reveals that maintaining a positive entrepreneurship system is virtually impossible without purposefully articulated and rather radical economic policy.

JEL Classification: J31

Keywords: income distribution; middle class; forecasting

Introduction

Sustainable development of regions depends on a wide array of intertwined factors, which are widely discussed in scientific literature (e.g., Lavrinenko *et al.*, 2016; Bartkowiak-Bakun, 2017; Simionescu, 2016; Zemlickiene *et al.*, 2017; Michailova *et al.*, 2017; Kendiukhov, Tvaronavičienė, 2017; Furková & Chocholatá, 2017; Ilysheva *et al.*, 2017). Among a variety of such factors well-functioning business plays an important role. Favorable entrepreneurship system heavily depends on purchasing capacity of clientele. There is unanimous agreement that countries with long-lasting and more even distribution of income across society are more favorable for doing business (Tvaronavičienė, 2016; Petrenko *et al.*, 2017; Diržytė *et al.*, 2017; Fabuš, 2017; Kvaratskhelia, 2017; Gavurova *et al.*, 2017; Kucharčíková *et al.*, 2017).

1. Literature review

Despite extremely large disparities in income are more characteristic for less developed countries, in our paper we will concentrate on developed countries. In their economies distribution of income (and wealth) does not affect the development processes so crucially, as compared to underdeveloped word (Simionescu *et al.*, 2017; Oladimej and Muhammed, 2017; Bilan *et al.*, 2017). Comparisons here are hardly possible as such. However, if to look for additional drivers in more sustainable entrepreneurship, we believe that the expansion of middle class could contribute to business flourishing in developed world too (Sinicakova and Gavurova, 2017).

In order to find out if the expansion of middle class could potentially result in palpable results for some of the less developed European countries, let us observe the distribution of income in the selected countries of this region.

2. Methodology of comparisons of income distribution in selected countries

Relying on official statistical data we will examine fraction of middle class in selected more developed European countries. Additionally to the selected countries from Europe we will include into our analysis United States of America. So, Germany and United Kingdom and Norway will represent the best developed countries in Europe with USA taken for comparison reasons with purpose to check if level of development conditions similar distribution even if economic policies differ. Comparatively less developed European countries in this research are represented by Check Republic, Bulgaria and there Baltic countries: Lithuania, Latvia and Estonia. After clarifying if consistent pattern could be traced, we will focus on Lithuania and Latvia. Besides comparisons of state of the art for Lithuania and Latvia, we will analyze various scenarios of external environment and will forecast change of middle class in that changed conditions. We assume that middle class is fraction of population with disposable income between 10 000 and 30 000 US dollars per year. Here we need to point that if we attribute different interval of income to represent middle class, we would receive respectively differing picture. Since we intend to focus on Lithuania and Latvia, we believe that chosen brackets for middle class characteristic are suitable because corresponds perception of middle class in targeted countries.

3. Conducting research and results: data and its interpretation

Below (*Figure 1*) we provide graphical depiction of middle class segment in selected countries. As it was already indicated above, we assume, that middle class segment could be represented by number of inhabitants with disposable income from 10 000 to 30 000 US dollars per year. At first let us juxtapose countries, representing geographic Europe – Germany, United Kingdom, Norway – and USA. It is interesting that in all selected developed countries we observe significant fraction of middle class. Inhabitants with disposable income below 10 000 USD is minority; middle class comprises significant fraction in all developed countries. One peculiarity is found: in USA and Norway distribution of income is reflected by inverted pyramid, which vividly signals the majority of population have disposable income above 30 000 USD per year. Despite those two countries are incomparable in their size, distribution of society is rather similar: rich people prevail. It is interesting that other two countries, which represent developed European countries, demonstrate slightly different pattern of income distribution across society: in Germany and UK we do not observe inverted pyramid, since here middle class (not the richest one) comprises majority. According theory of economic development, specifically such mode of income distribution the mostly facilitates further

economic development. To conclude, well developed countries have significant middle class and significant fraction of rich people. In some countries rich (top) class prevail, in some countries middle class prevail. Poor people in well developed countries comprise minority of population.

Income and Wealth Distribution Model

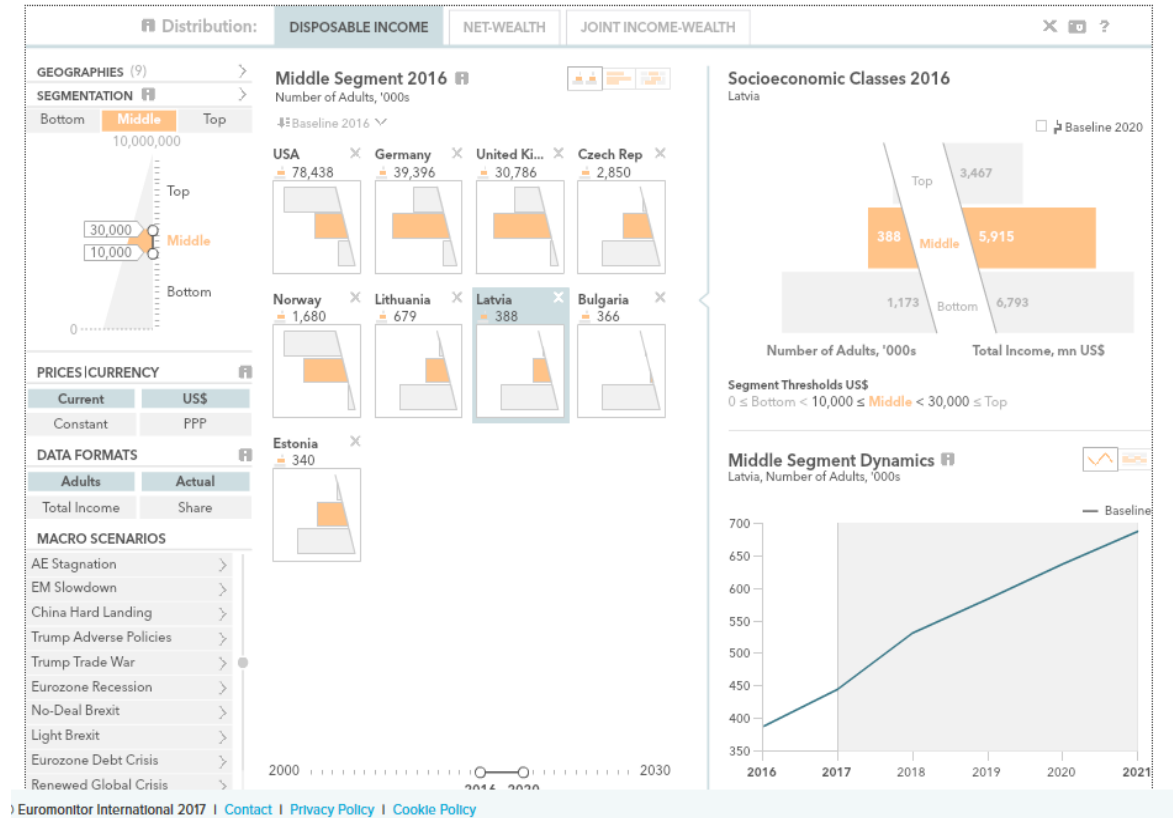


Figure 1. Middle class in selected countries, forecast of Latvia's middle class change until year 2021 *ceteris paribus*

Source: Euromonitor International, database Passport.

Let us examine pattern of income distribution in selected less developed European countries: Check Republic, Lithuania, Latvia, Estonia and Bulgaria. Pictograms of those countries presented in Figure 1 allow us to see that we have very differing pattern of income distribution across society: here middle class (in Bulgaria it is even nonexistent) is minority. The biggest share of three distinguished income groups comprise poor people, or bottom group. It is peculiar that well developed and less developed countries differ considerably in disposable income distribution patterns across society (Tomaszewicz and Trębska, 2015; Clowes and Bilan, 2014).

If to return to characteristic of entrepreneurship ecosystem, we can state that less developed European countries are much less favorable for business development. Less developed countries have to think about certain tradeoff to mitigate this unfavorable factor affecting overall business environment.

4. Plausible scenarios of development and their impact on middle class dynamics

Let us look at forecast of middle class change tendencies until year 2020. The forecast has been performed by use of Euromonitor International database Passport.

Let us look at the variant, when all conditions remain the same; i.e. *ceteris paribus*. Let us take Lithuanian case, middle class numbers. We will use two different estimations of disposable income for attribution of households to middle class segment. In one case we will attribute people to middle class by disposable income measured in current prices (*Figure 2*), and in the second case we will look at numbers of inhabitants, with disposable income 10 000 and 30 000 USD estimated in purchasing power parity (*Figure 3*). We see that number differ, and even direction of trend is opposite. Results of forecasting show that numbers of people with disposable income between 10 000 and 30 000 USD, estimated in current prices would increase in the nearest future, alas number of people within the same range estimated in PPP would diminish considerable. Let us recall that we are considering Lithuanian case. We reason that obtained results signal about fast diminishing of purchasing power of Euro in Lithuania. To put that in another words, we could say that prices of goods and services included into a basket for PPP estimations would increase in Lithuania enormously.

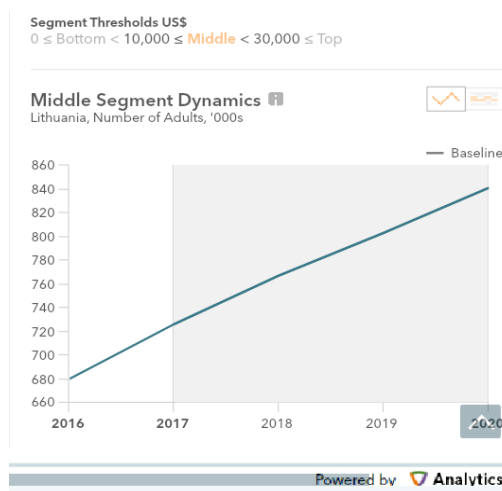


Figure 2. Forecast of Lithuanian middle class dynamics, in current prices

Source (*Fig. 1, Fig. 2*): Euromonitor International, database Passport.

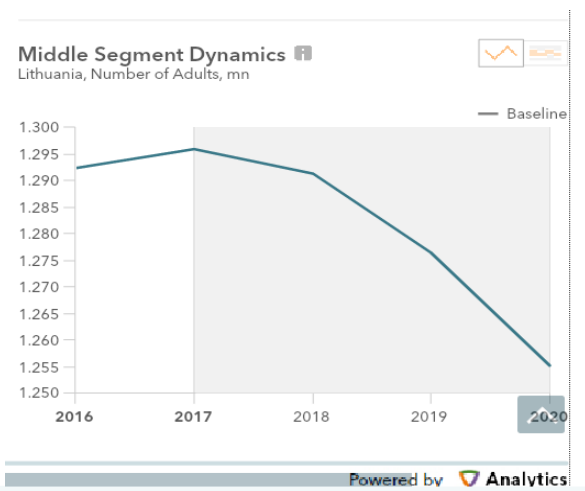


Figure 3. Forecast of Lithuanian middle class dynamics, in Purchasing Power Parity (PPP)

Let us look at Latvia's analogues data. Middle segment dynamics for Latvia is presented in *Figure 1* (look the right bottom of the picture) and middle segment dynamics estimated in PPP is presented in *Figure 4* (look below). It is very interesting to note, that Latvia's forecast in PPP completely differs from Lithuanian one.

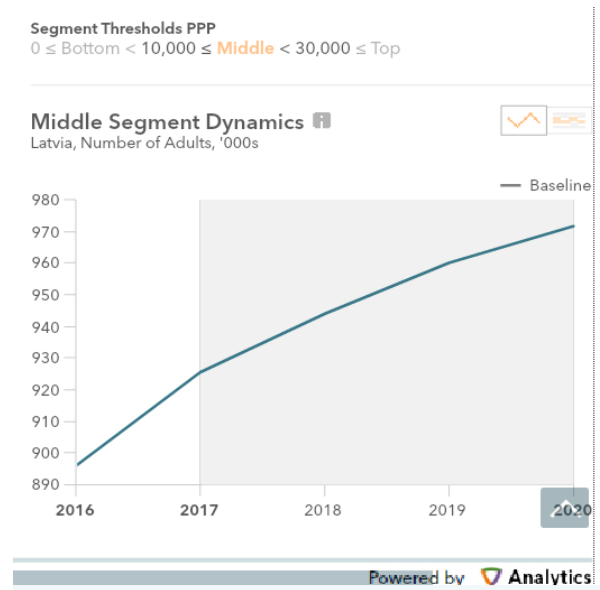


Figure 4. Forecast of Lithuanian middle class dynamics, in Purchasing Power Parity (PPP) *ceteris paribus*

The forecast suggests, that in Latvia size of middle class will expand. There is no controversy between data obtained using current price and PPP approach. We can expect sequent development of economy, with expanding middle class. Obtained data for Latvia allow us to expect favorable ecosystem for entrepreneurship in this country. Let us examine how plausible scenarios of international development would affect middle class development in Lithuania and Latvia. At first let us take two scenarios: Eurozone Recession, probability 8% and AE stagnation, probability 12% (scenarios and probabilities are taken from Euromonitor International database Passport). Eurozone recession assumptions in the database Passport is described as situation, when “growing geopolitical and EU break-up risks increase uncertainty and reduce investment. Significant deterioration in Eurozone credit markets, consumer confidence and business confidence. Estimated probability: 5-10% probability over a one-year horizon, 10-19% over a two-year horizon“. AE stagnation in its turns is understood as situation, when „growing influence of populist politicians leads to rising trade and immigration restrictions, and a slowdown in implementation of structural reforms. Annual labour productivity growth in advanced economies over the next five years declines significantly below the baseline forecast. Greater private sector pessimism about the future reduces business investment and consumer spending. The average annual GDP growth in advanced economies declines by 1.2-1.5 percentage points relative to the baseline forecast over a five-year horizon. Estimated probability: 10-15% over a one-year horizon, 19-28% over a two-year horizon“ (Euromonitor International database Passport).

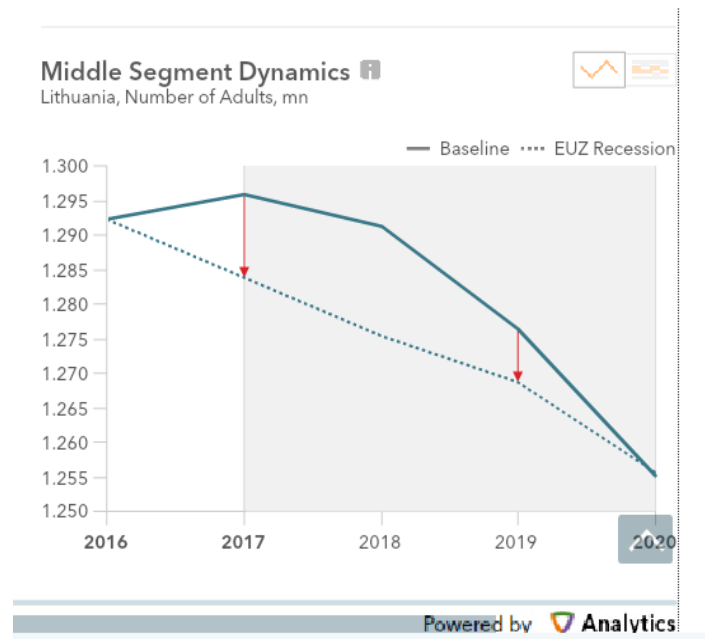


Figure 5. Impact of Eurozone recession on Lithuania's middle class development (PPP version)

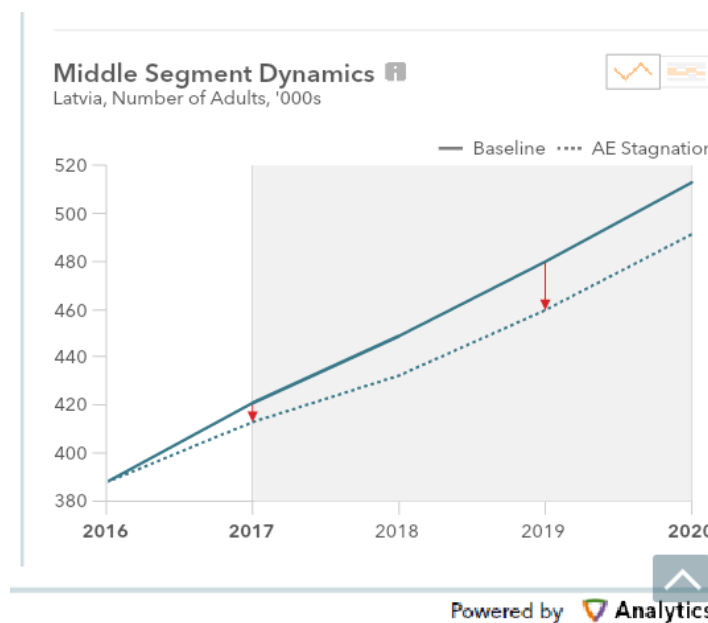


Figure 6. Impact of AE stagnation on Latvia's middle class development

Let us examine two additional scenarios. This time we will look at Latvia's results specifically. Emerging markets (EM) slowdown, 11%. Passport database describes this scenario in the following way: „Scenario Assumptions: Long Term Potential Output in Emerging Markets Lower than Expected. Domestic business and consumer confidence drop significantly. Increase in capital outflows leads to higher financing costs. Estimated probability: 9-14% over a one-year horizon, 18-26% over a two-year horizon“ Another scenario is so named “No-Deal Brexit probability 18%“ and “Scenario Assumptions: Negotiations between the EU and the UK break down, and the UK leaves the EU in 2019 without reaching a trade agreement. Trade relations with the EU default to World Trade Organisation (WTO) conditions.

Heightened uncertainty and lower labour productivity lead to a long-term decline in UK real GDP of around 3% relative to the baseline forecast. Estimated Probability: 30-40% over a 2-year horizon, 15-20% over a 1-year horizon“.

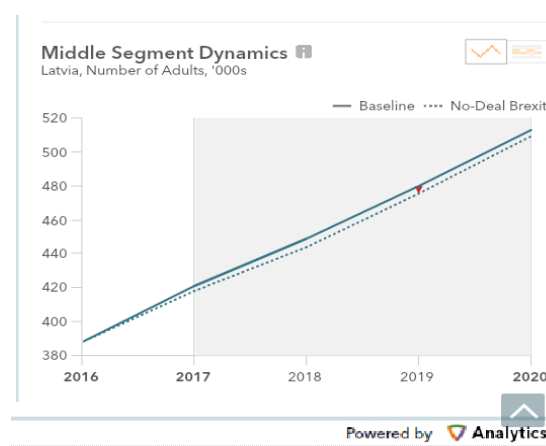
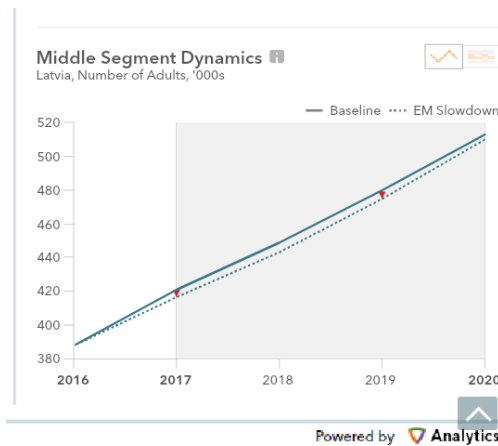


Figure 7. Impact of emerging markets (EM) slowdown on Latvia's middle class development

Figure 8. Impact of No-Deal Brexit on middle class development (PPP version)

Indicated above scenarios do not affect Latvia's middle class development tendencies (*Figure 7* and *Figure 8*).

The above provided scenarios signal about weak ties of Latvia with European countries. It seems that only one scenario – global crisis- would affect Latvia's middle economy more significantly (see *Figure 9* depicted below). Global crisis scenario is described in Euromonitor International database Passport in the following way:

“Global Crisis, probability 3%. Scenario: advanced economies stagnate, with annual potential output growth declining by 1-1.5 percentage points below the baseline forecast.

- Long-term potential growth in Emerging Markets is significantly below expectations, leading to reduced private sector confidence and higher country borrowing costs.

- A rise in the proportion of distressed loans leads to a financial crisis in China.

- Greater pessimism about Eurozone growth prospects lead to lower private sector spending and a deterioration in Eurozone credit markets. Estimated probability: 2-4% over a 1-year horizon, 4-8% over a 2-year horizon”.

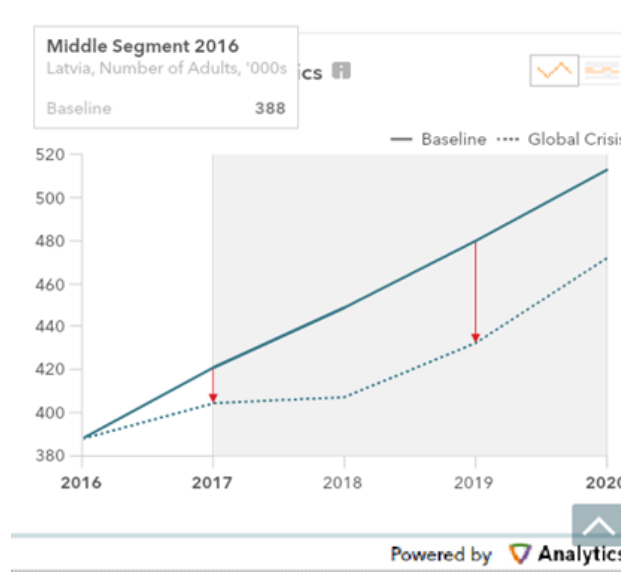


Figure 9. Impact of global crisis scenario on Latvia’s middle class dynamics

5. Income distribution in Latvia and Lithuania in long-range (until year 2030)

Middle class USD versus middle class in PPP

In order to have better understanding of long-term trends in income distribution in Lithuania and Latvia let us examine forecast of middle class change until year 2030. We will juxtapose forecast when disposable income of middle class is estimated in current prices and forecast when income, according which, population is attributed to middle class segment performed in PPP, or to put in other words, inhabitants are attributed to middle class segment according their real purchasing power, estimated on basis of basket of goods and services used for this purpose. Obtained trends of middle class change in long-term in Lithuania estimated in these two ways are presented below in *Figure 10* and *Figure 11*.

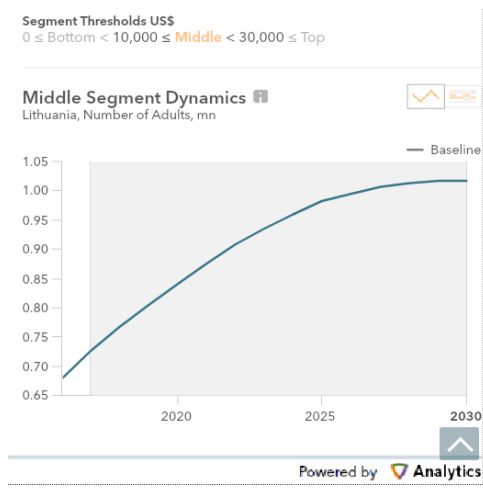


Figure 10. Forecast of Lithuanian middle dynamics until year 2030, in current prices

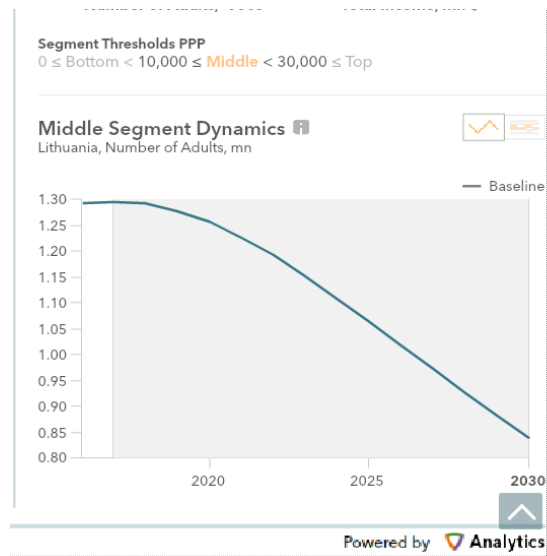


Figure 11. Forecast of Lithuanian middle class dynamics until year 2030, in PPP

Obtain results verify insights formulated basing on shorter-term forecasting results (untill year 2020) provided in *Figure 2* and *Figure 3*: despite formally looking middle class should expand, it remains unclear what will be real purchasing power of this middle class. It might be that in reality due to gradually diminishing purchasing power this middle segment will contract in reality as indicated in *Figure 11*. Let us examine analogous forecast for Latvia (below presented *Figure 12* and *Figure 13* respectively).

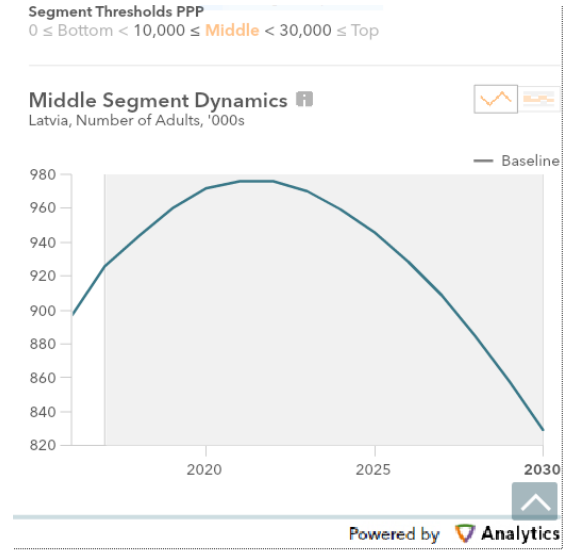
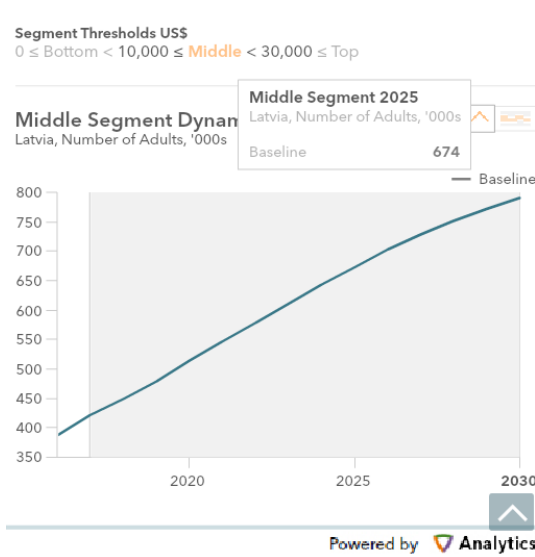


Figure 12. Forecast of Latvian middle class dynamics until year 2030, in current prices,

Figure 13. Forecast of Latvian middle class dynamics until year 2030, in PPP,

Obtained long-term forecasting results for Latvia suggest rather similar situation for Latvia in long-run: despite increasing numbers of inhabitants attributed to middle class segment according current prices, real situation of middle class remain rather obscure. Forecast performed in PPP signal that numbers of middle class would at first increase but starting from approximately year 2020 will, most likely, start diminishing.

To conclude, tendencies of income distribution in Lithuania and Latvia are rather similar with a single clearly visible difference: the same phenomenon in Latvia would take place with some delay. Expected delay is in the range of 3-5 years.

Distribution of income in Lithuania and Latvia will not contribute sufficiently to accomplishing of entrepreneurship ecosystem in analyzed countries.

Conclusion

Analysis of disposable income distribution patterns in selected well developed countries and comparatively less developed European countries let us come to the following insights.

Completely differing patterns of income distribution were found in affluent and less wealthy societies: in rich countries top and middle class embrace majority of population; while in less developed European countries the low income segment is the largest; it is followed by middle segment and the top segment is insignificant. Various scenarios of external environment change, would not impact Lithuania and Latvia in medium range. In long run middle class in Lithuania and Latvia should expand, alas its purchasing capacity may diminish hence real expansion of middle layer of society *ceteris paribus* is hardly plausible until year 2030. Latvia,

as it is expected, would replicated patterns of Lithuanian development with the single difference that the same phenomena will occur with delay.

Limitations of research

The presented research as all researches has own limitations. The main limitation that forecasting is based on historical data. Hence, the obtained results provide us with signals what would be if there were no structural changes, understood as orientation to high value added products and significant increase in productivity and competitiveness. Let us hope right orientation of future reforms will prevent Lithuania and Latvia from forecasted tendencies

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