

ИНСТИТУТ ЗА ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ НА БЪЛГАРСКАТА АКАДЕМИЯ НА НАУКИТЕ  
**ИКОНОМИЧЕСКИ  
ИЗСЛЕДВАНИЯ**  
*ECONOMIC STUDIES*

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## **BULGARIAN ECONOMY ON THE VERGE OF EURO AREA – CURRENT CHALLENGES AND MEDIUM-TERM PROJECTIONS<sup>7</sup>**

*The paper examines the current state and development of the Bulgarian economy in 2022 and the first quarter of 2023 considering domestically determined and regional factors and processes. We analyse the real sector of the Bulgarian economy by tracing the dynamics of economic activity (GDP, inflation, and unemployment) considering internal and external factors affecting inflation dynamics and labour market processes. The sustainability of the fiscal sector is viewed through the possibilities of financing the green and digital transition using EU funds and programmes, and the policies needed to preserve the fiscal stability. Prospects for foreign trade are discussed in terms of the economic situation and expectations of Bulgaria's main trading partners, considering the high connectivity with the euro area and the structural specificities of foreign trade relations. The analysis of the financial sector (banking sector and capital market) focuses on the implications of the monetary policy pursued by the European Central Bank and the regulatory actions of the Bulgarian National Bank, as well as on the risks*

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<sup>7</sup> The paper is an abridged version of the first part “Analysis of Macroeconomic Development in 2022 and Medium-term Projections” of the Annual Report of the Institute of Economic Research at the Bulgarian Academy of Sciences for 2023.

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*for the stable functioning of the sector in a dynamic macroeconomic environment. Expectations and forecasts for the Bulgarian economy to 2025 are based on key assumptions about the global economic processes and locally determined challenges. Recommendations are made to the national economic policy aimed at preserving the purchasing power of the population's income and the need to restructure certain fiscal measures.*

*Keywords: economic dynamics; labour market; fiscal sustainability; foreign trade; banking sector; capital market; macroeconomic projections; economic policy recommendations*

*JEL: E2; E44; E47; E60*

## **Introduction**

Traditionally, the Institute of Economic Research at the Bulgarian Academy of Sciences (ERI at BAS) presents its Annual Report that analyses the economic development of Bulgaria and the economic policies implemented. The Annual Report for 2023 examines the state and development of the Bulgarian economy in 2022 and the first quarter of 2023 and presents estimates of economic development to 2025.

The real sector of the Bulgarian economy is examined both in terms of the dynamics and short-term indicators of economic activity and in relation to labour market processes and their relationship to price developments. The strong dependence of budget revenues on the dynamics of consumption and imports, and hence on inflation in Bulgaria is discussed. We view the delay in national legislation as regards the National Recovery and Resilience Plan (NRRP) as a significant risk to the implementation of the planned investment projects and the government's capital programme. Although government debt in Bulgaria is still low, fiscal prudence is advisable given the pressures on public finances and the need to maintain fiscal buffers amid high regional and global economic uncertainty.

When analysing the processes in the external sector, we focus on the dynamics of the external environment, in particular the euro area, and the country's main trading partners. The commodity structure of exports and imports and the balance of payments are examined in terms of competitiveness and the sustainability of the foreign trade position. The analysis of banking sector processes in Bulgaria in 2022 and early 2023 is based on the regulatory policy of the Bulgarian National Bank (BNB) and banks' lending activity. The structural specificities of the capital market and positive developments in recent years are also commented. The main factors and risks that are expected to determine the state of the financial sector in the country in 2023 are outlined.

Based on a structural macroeconomic model, a medium-term macroeconomic framework for the Bulgarian economy to 2025 is proposed. The forecast reflects different assumptions about both the dynamics of the external economic environment and the expected directions of economic governance that shape the state and opportunities for the Bulgarian economy in the forthcoming accession to the euro area. In conclusion, we made recommendations that aimed at preserving the purchasing power of the population's income and restructuring certain fiscal measures so smooth accession to the euro area to be ensured.

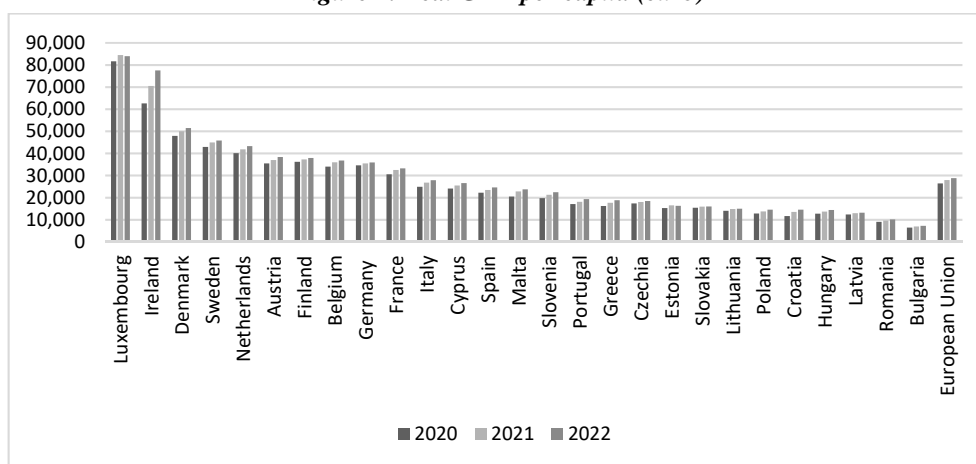
## 1. Real Sector and Labour Market

### 1.1. Economic Activity Dynamics

The economic growth for 2022 was 3.4% which represents a significant slowdown compared to the record real GDP growth of 7.6% achieved in 2021. The slowdown in economic activity in 2022 is a result of the deteriorating economic situation both regionally and globally due to the military conflict between Russia and Ukraine, the subsequent multifaceted economic sanctions against Russia, as well as the strict anti-epidemic measures taken in China to contain COVID-19, which caused difficulties and disruptions in supply chains of goods and raw materials.

The real GDP per capita in Bulgaria for 2022 amounts to 7,250 Euros. In comparison, the average real GDP per capita in the EU for 2022 is 28,810 euro indicating that Bulgaria lags in real income per capita more than 4 times compared to the EU average (Figure 1). The significant income disparity between Bulgaria and Romania is also evident, where the real GDP per capita in 2022 reaches 10,110 euros. According to Sariiski and Rangelova (2022), the different focus of initiated reforms and specific design of economic policies account for Romania's more successful transition to a market economy compared to Bulgaria. Unlike Bulgaria, Romania emphasizes more on improving its institutional framework, contributing to enhancing the competitiveness of its economy and the development of an effective market mechanism.

**Figure 1. Real GDP per capita (euro)**

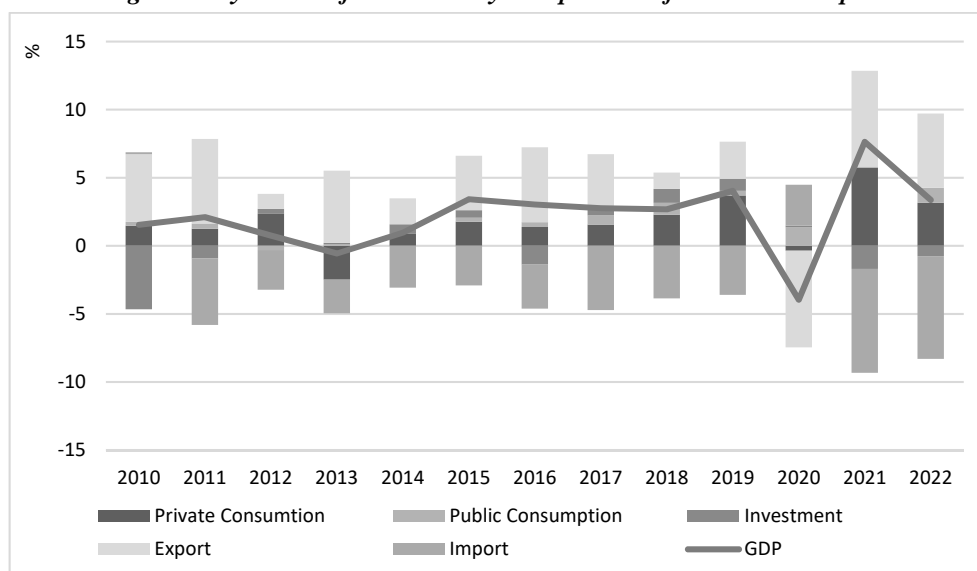


Source: Eurostat.

Another important indicator that confirms the country's lagging position among the other EU Member States (Minassian, 2021) is the Gini coefficient. According to Eurostat data for 2022, in Bulgaria, the equivalised disposable income before social transfers stands at 38.4 points, compared to the EU average of approximately 30 points and around 32.0 points for Romania. This indicates the highest income inequality in Bulgaria within the EU.

The most significant contributions to the annual growth of real GDP in 2022 are due to the increase in private and public consumption, as well as exports of goods and services (Figure 2). The higher household consumption in 2022 is driven by substantial growth in nominal labour incomes, including pension and social assistance increases, as well as wage indexation throughout the year outpacing the inflation rate. The increase in net fiscal transfers to households maintains employment and accelerates credit activity. Along with lower household savings rates due to rising inflation and low-interest rates on deposits, the increased fiscal transfers have an additional stimulating effect on household consumption. However, compared to 2021, there is a decline in the real growth of individual consumption due to higher economic uncertainty and households' expectations of deteriorating future financial conditions primarily driven by rising consumer prices in 2022. The increase in public consumption is driven by higher government intermediate consumption and wages for employed in the budgetary sector.

**Figure 2. Dynamics of Real GDP by Components of Final Consumption**



Source: National Statistical Institute.

Net exports also contribute to economic growth in 2022. The annual growth rate of exports is increasing, both in the export of goods and services. The growth in imports is in line with the dynamics of the components of final demand and the high import component of local production.

In 2022, gross fixed capital formation recorded a real decline of 4.3%, further deepening the unfavourable trend of contracting investment activity in Bulgaria as observed in recent years. Among the leading factors for this decline in the private sector are the high level of economic uncertainty and the underutilized production capacities in the industry, which hinder the transformation of corporate financing into investments in physical capital. The reasons for

the decline in investments in the public sector are mainly due to the nearly three years of political instability which has led to delays in the implementation of various infrastructure projects. However, it is noteworthy that in 2022, the decline in investments is significantly smaller compared to 2021 and a positive change can be expected in 2023. The reasons for this are associated with payments under the NRRP.

In 2022, the gross value added (GVA) increased by 3.4% on an annual basis. The industrial sector accounts for approximately 26% of the GVA in the economy and is the only sector that experienced growth during the year under review. The growth in this sector is primarily attributed to manufacturing driven by increased exports of goods and higher domestic demand. On the other hand, the construction sector continues to experience a decline in its value-added mainly due to the slowdown in infrastructure projects. The share of the agricultural sector remains unchanged at 5% of the GVA despite a decrease in production volumes in crop and livestock farming and an increase in prices in the sector ranging between 20% and 50%<sup>8</sup>.

Enterprises in the IT sector, which traditionally realize high value-added, account for a relatively low share of the total production in the country (7.3%). The sector, which includes scientific research, also achieves relatively low value-added (6.8%). The contribution of these two sectors to the structure of GDP should be a primary source for revitalizing innovative processes in Bulgaria. It is necessary to establish an effective mechanism for interaction between the government and these two sectors, aiming to create goods and services with high value-added and enhance the resilience of the Bulgarian economy to external shocks and cyclical fluctuations.

The data for the overall business climate indicator in Bulgaria in 2022 shows that its values remained close to the levels at the end of 2021. A significant decline in the index was observed in March and October 2022. During the remaining months, the values of the index increased but at a relatively slower pace. Among the most significant reasons causing economic uncertainty are the military conflict between Russia and Ukraine which started in late February 2022, high energy prices, shortages of materials and equipment due to difficulties in global supply chains, and a labour shortage in certain sectors of the economy crucial for the implementation of the green and digital transition (such as healthcare, education, engineering, food, and beverage industry, etc.). However, trends in the first quarter of 2023 appear favourable, with reported slight growth in the business climate indicator compared to the first quarter of 2022.

### *1.2. Inflation Dynamics and Wages*

Inflation, measured by the Consumer Price Index (CPI), recorded a significant increase of 15.3% on an annual basis in 2022 (compared to 3.3% in 2021 and 1.7% in 2020). The annual inflation, measured by the Harmonized Index of Consumer Prices (HICP), also registers a substantial rise in 2022 (reaching 14.3%) with a slight deceleration observed towards the end

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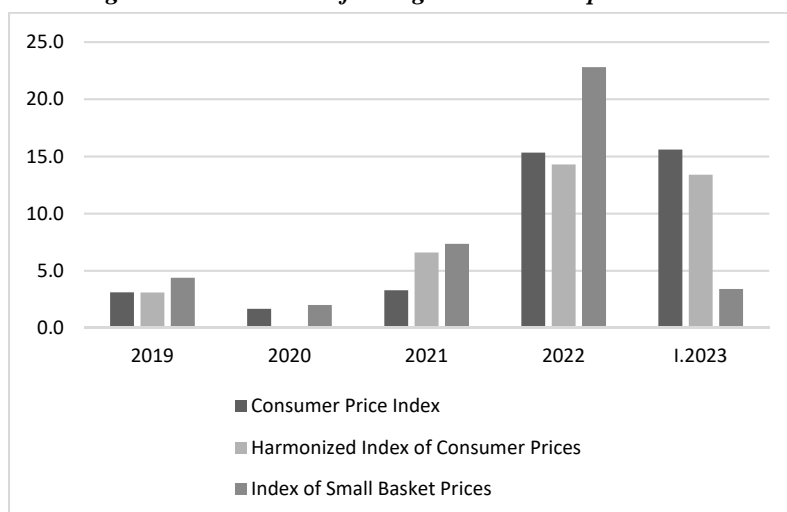
<sup>8</sup> First Estimate of Economic Accounts for Agriculture for 2022  
[https://www.nsi.bg/sites/default/files/files/pressreleases/AgrEAA\\_firstEst2022\\_9QO84WL.pdf](https://www.nsi.bg/sites/default/files/files/pressreleases/AgrEAA_firstEst2022_9QO84WL.pdf).

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of the year. The faster price growth in Bulgaria compared to the euro area Member States imposed the government to postpone the preparation of the Convergence Report to assess Bulgaria's readiness to join the euro area in 2022 mainly due to the failure to meet the inflation criterion.

The price dynamics are attributed to a series of external and internal shocks. Among the factors contributing to the rise in prices in 2022, the most significant are the increasing costs of primary energy sources (such as oil, natural gas, and electricity) and agricultural products on international markets, as well as high prices for international transportation. The depreciation of the euro against the US dollar is another factor driving up prices, affecting both imported basic raw materials, many of which are traded in US dollars on international markets, and imported consumer goods from third countries outside the EU and the euro area. Low-interest rates on deposits and loans set by the European Central Bank (ECB), which were maintained during the first half of 2022, combined with the continued fiscal stimulus to address the consequences of the COVID-19 pandemic, are also essential factors contributing to the acceleration of inflation. These factors amplify consumption growth during the first half of 2022.

**Figure 3. Annual rate of change in consumer price indices**



Source: National Statistical Institute.

The domestic pro-inflationary factors that have the most significant effect are the increased production costs due to higher electricity prices for industrial consumers and rising labour costs. The higher domestic demand resulting from increased wages, pensions, and social payments, as well as the growth of credits to households and non-financial enterprises, is also a significant driver for the acceleration of consumer prices.

During the first quarter of 2023, the slowdown in inflation observed at the end of 2022 continues, but the reported values are still relatively high. The annual inflation rate in



Bulgaria, measured by the HICP, decelerates to 8.6% in May. The pace of increase in the main components of the index such as food, services, energy products, and transport fuels, also shows moderation. Among the factors contributing to the slowing down of inflation, the most significant contribution comes from the declining dynamics of energy and other commodity prices in international markets.

In 2022, the average annual wage in Bulgaria continued the trend from the previous year, increasing both nominally and in real terms. According to preliminary data from the National Statistical Institute (NSI) the average annual wage in 2022 increased by 13%. Bulgaria ranked at the top among the EU Member States in terms of the growth in the average wage, with an increase that was over 3 times higher compared to the EU Member States of Western Europe.

Although the nominal wages have been steadily increasing over the past five years, in 2022 the growth rate was the highest which is reflected in the overall price level in Bulgaria. The reasons for this can be attributed to the indexing of a significant portion of labour remuneration due to the general rise in consumer prices and the limited labour supply in the country. The continued impact of fiscal measures to overcome the consequences of the COVID-19 pandemic also plays a role. However, in 2022, the previously established differences in the leading growth of labour incomes in the public compared to the private sector are no longer evident. The accelerated increase in wages compared to the previous few years is largely attributed to the private sector (14%). In the public sector, wage growth compared to 2021 is 9.5%. It is noteworthy that in the healthcare sector, wages decrease by 12.5% primarily due to the discontinuation of additional material incentives paid to frontline medical workers during the COVID-19 pandemic.

Despite the increase in the minimum wage in 2022 the share of the minimum wage compared to the average wage remains relatively constant (around 40%). It remains close to values observed in other EU Member States. This process has a negative impact on the disposable income of low-skilled workers, who predominantly purchase essential goods, the prices of which have increased most drastically in 2022.

The process of wage growth continues to outpace labour productivity growth. In 2019-2021 both indicators followed identical growth rates, with a difference of around 7 percentage points. However, in 2022, a difference of 11 percentage points was observed. These discrepancies in the dynamics of labour productivity and wages indicate that wages in Bulgaria are primarily influenced not so much by the workers and employees achieved economic results but rather by other mainly price-related factors. This is a contributing factor to the acceleration of inflation in the country.

### *1.3. Main labour market indicators in Bulgaria compared to the European Union*

After a two-year decline, the labour force (comprising both employed and unemployed individuals) in Bulgaria indicates growth in 2022, despite a reported decrease in the working-age population. This increase was primarily due to the lifting of all restrictive measures related to the COVID-19 pandemic in sectors such as commerce, transportation, hospitality, and restaurants.

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In 2022, the number of unemployed individuals was 140.4 thousand people, which was even lower than the registered minimum in 2019 (142.8 thousand people). Among the unemployed individuals aged 15 and above, the largest decline in unemployment was observed in the 35-44 age group. The number of long-term unemployed individuals, those without a job for over a year, also decreased in 2022. In 2022 there were 52 thousand discouraged individuals in the same age group. The number of long-term unemployed individuals also decreases as the relative share of long-term unemployed compared to the total number of unemployed for 2022 is 54%.

Following the indicators of economic activity, employment, and unemployment, Bulgaria's position is improving and converging with the overall trends of labour market indicators for EU-27 Member States after 2019 (Table 1). The employment rate of individuals between 15- and 64-years old reaches values comparable to the EU-27 average in the past few years, and in 2022, it even surpasses the EU-27 average (70.4%). The unemployment rate is decreasing in all EU Member States, with Bulgaria maintaining a lower rate compared to other EU countries (4.3%). However, the slower transition of the unemployed to employment is the main reason why the share of long-term unemployed individuals aged 15-74 in Bulgaria continues to remain higher compared to other EU Member States.

The value of the Neither in Employment nor in Education and Training (NEETs) indicator for Bulgaria is significantly higher than the other EU Member States although its values have been continuously decreasing between 2020 and 2022. Among the most important reasons for the youth being outside the labour market are the lack of education and poverty. Considering that Bulgaria is among the five countries with the highest share of NEETs in the EU, there is a need for reformulation and reorientation of existing policies addressing this issue.

**Table 1. Employment rate, unemployment rate, and long-term unemployment rate in Bulgaria and EU-27 (%)**

	2020	2021	2022
<i>Employment rate (15-64)</i>			
Bulgaria	67.6	68.1	70.4
EU-27	67.0	68.3	69.8
<i>Unemployment rate (15-74)</i>			
Bulgaria	6.1	5.3	4.3
EU-27	7.2	7.1	6.2
<i>Share of long-term unemployed in total unemployed (15-74)</i>			
Bulgaria	44.4	49.4	53.7
EU-27	33.9	39.2	38.5
<i>Neither in Employment nor in Education and Training (NEETs)</i>			
Bulgaria	18.2	17.6	15.1
EU-27	13.9	13.1	11.7
<i>Economic activity rate (15-64)</i>			
Bulgaria	72.1	72.0	73.6
EU-27	72.4	73.6	74.5

Source: Eurostat.

Increasing the economic activity of the population should be among the fundamental priorities of the economic policy in Bulgaria. The main stimulating measures aimed at increasing the economic activity of the population should be directed towards activating the potential workforce (inactive individuals, people with disabilities, those not working due to personal or family reasons, seasonal workers, etc.), supporting the work-life balance, offering flexible employment, part-time jobs, maintaining the labour force participation of individuals in retirement age, and removing barriers to active job search caused by poverty, poor health, and unfavourable living conditions. On the other hand, increasing incomes and implementing appropriate policies to encourage employment and active labour market behaviour will enhance activity and motivation for work. Another possibility is the effective management of free movement and migration processes.

## **2. Fiscal Sector and Challenges to Public Finances**

At the beginning of June 2023, the National Assembly approved a second extended budget law, ensuring stability in the budget expenditure financing until the approval of the State Budget Law for 2023. In the updated medium-term budget forecast for 2023-2025 and the draft State Budget for 2023, a fiscal deficit of 2.5% of GDP on a cash basis and 3% of GDP on an accrual basis has been set up. Such a target for fiscal position for 2023 complies with the Maastricht fiscal deficit criteria required for joining the euro area. The fiscal deficit target of 3% of GDP in the draft budget has been achieved, implementing fiscal policies for keeping VAT reductions for some businesses, and collecting 100% dividends from the profit of state-owned enterprises for 2022. In the expenditure part of the Consolidated Fiscal Program (CFP), all social payments, as well as the update of pensions from July 1, 2023, have been preserved, while business subsidies have been substantially reduced. Capital expenditure has been increased by 1.1% compared to 2022, reaching 4.5% of GDP to support economic growth. According to ERI of BAS estimates, however, these funds will not be sufficient, considering the completion of payments on European projects for the EU Multiannual Financial Framework (MFF) 2014-2020 and the new projects started with the EU MFF for 2021-2027.

### *2.1. Budget revenues and tax policy*

In 2022, the budget revenues increased by 1.5% of GDP on an annual basis, mainly due to higher non-tax revenues and EU grants. The relative reduction of the share of tax revenues in the structure of budget revenues shows the collection of tax revenues in the country, which, despite tax compliance measures in recent years, remains relatively unsatisfactory. The recorded annual growth in non-tax revenues and grants reflects the increased receipts of the Electricity System Security Fund, as well as EU grants, including the initial tranche from the EU Recovery and Resilience Mechanism (RRM) under Bulgaria's NRRP.

The tax revenues recorded an increase in nominal terms on an annual basis but a decrease of about 1% as a ratio to GDP (figure 4). The growth of tax revenues in the context of rising inflation is expected, with the catch-up growth of incomes in line with the fiscal expansion driving additional inflationary processes. The taxes on profits rose because of the restored economic activity and the normalized functioning of global supply chains. As a result of the

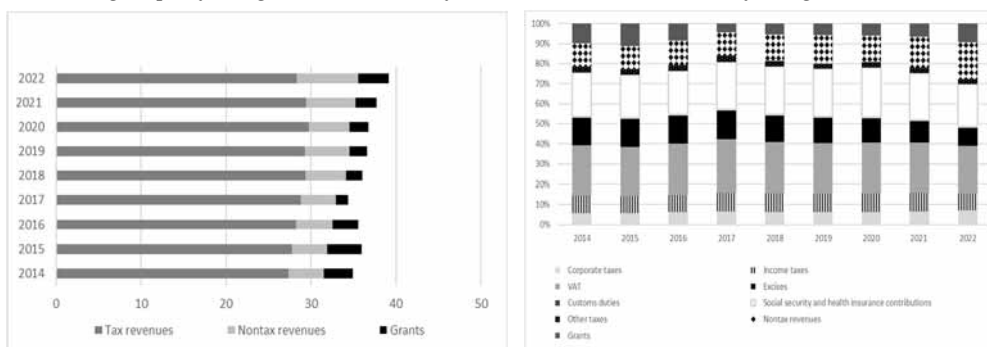
anti-crisis government measures taken to overcome the decline in employment and incomes and the gradual recovery of economic activity, personal income tax revenues increased in nominal terms, but fell as a ratio of GDP. The reduction in relative terms is a result of imposing new additional tax reliefs to support households.

The indirect tax revenues were strongly influenced by the increased domestic consumption and imports. However, the reduction of VAT for some businesses has had a negative effect on revenues from VAT. Such measures should only be applied temporarily because they lead to a decrease in tax revenues, which limits the fiscal space for implementing priority spending policies. They represent hidden state aid and have a questionable impact on economic activity and employment. In 2022, the increased household incomes, higher social security maximum taxable income (up to BGN 3,400), and the increase in the length of service and retirement age led to an increase in social security revenues, and thus, the tax burden has been increasingly transferred to social security. The non-tax revenues grew significantly compared to the previous year, which was mainly due to the revenues of the Electricity System Security Fund. The funds were used to compensate households and business entities given the high electricity prices and to increase the share of renewable sources in the energy mix. Other policies that had an effect on the non-tax revenues during the year were related to the contributions to the state budget from deductions from profit and income from dividends of state-owned enterprises and commercial companies with state participation in the capital, the expansion of the scope and the update of the tariffs for the distance travelled within the phased introduction of the toll system, as well as the use of kindergartens and nurseries free of charge.

**Figure 4. Budget revenues for the period 2014-2022**

a) Main groups of budget revenues (% of GDP)

b) Structure of budget revenues (%)



Source: Ministry of Finance.

In 2022, Bulgaria received the first tranche of EUR 1.3 billion from the RRM. Despite project delays, the ending of the 2014-2020 EU program period and the advanced stage of implementation of investment projects for the new 2021-2027 period also had an impact on the growing revenues from EU grants. However, non-implementation of some European projects within the specified period by the end of 2023 becomes a fiscal risk for the next budgets as the national resources for their finalization will be needed.

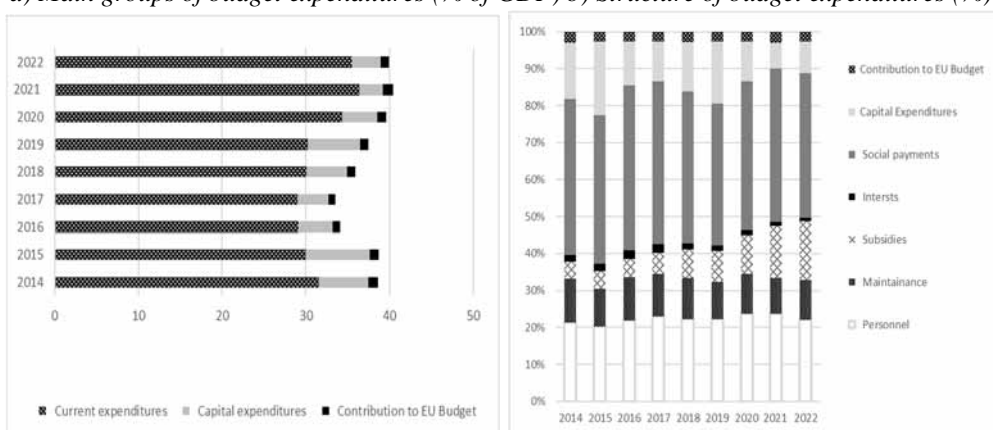
## 2.2. Government expenditure and spending policy

In 2022, the total budget expenditures under the CFP amounted to 40% of GDP, with a growth trend (figure 5). Although the share of budget expenditures for 2022 remained within the limits of 40% of GDP, determined by the Law on Public Finances, the implementation of investment projects with European funding in 2023 and increasing social expenditures may result in exceeding that level. The COVID-19 pandemic crisis measures have had an upward effect on current social expenditure, and they could hardly be reduced in the future without improving the efficiency of public expenditures. The one-off fiscal measures to support households and businesses to overcome the consequences of the pandemic crisis have been additionally reduced in 2022.<sup>9</sup>

Government subsidies continued to grow in 2022. A significant contribution to this surge was the cost of compensating business and households' customers of electricity, as well as the implementation of investment projects of state-owned enterprises and companies from the private sector, financed with EU funds. However, compensation for high energy prices represents a distortionary support mechanism by increasing the production of electricity from renewable sources.

**Figure 5. Budget expenditures for the period 2014-2022**

a) Main groups of budget expenditures (% of GDP) b) Structure of budget expenditures (%)



Source: Ministry of Finance.

The government programs for supporting many sectors of the economy had a positive effect on employment and predictability for business, but they also fuelled a higher inflationary environment. For households, fiscal support should be adjusted by gradually shifting existing mechanisms towards directly supporting those households who are in real need, building on existing income-based social protection programs, such as heating allowances (Peneva,

<sup>9</sup>According to estimates by the International Monetary Fund, one-time anti-crisis measures for businesses and households amount to 3.2% of GDP in 2020, 5% in 2021 and 1.5% in 2022. See the International Monetary Fund Article IV Report for 2022 for Bulgaria.

*Zlatinov, D., Sariisky, G., Yotzov, V., Paliova, I., Vojcheska-Nikodinoska, K., Georgieva, S. (2023). Bulgarian Economy on the Verge of Euro Area – Current Challenges and Medium-Term Projections.*

2022). This would preserve energy affordability, be fairness, limit price distortions and promote efficiency and energy savings as a goal of the green transition.

Although public sector compensations of employees decreasing as a proportion of GDP and as a share of total costs, they are showing sustained growth. The main factors for their rise were the higher minimum wage and minimum social security insurance thresholds, as well as the additional increase in remuneration in health and education areas of the public sector.

In the structure of budget expenditures in 2022, social security and other social benefits continued to become the biggest share. The persistent upward trend in public social spending and the ageing of the population represents a major risk to the fiscal position in the medium term, which requires structural reforms and optimization of public spending. A positive factor for restoring the balance in the pension system has been the gradual increase in the age and the period of social insurance for retirement, whose effects, however, have been assessed limited in the medium term considering the excessive expansion of pension costs.

The inefficiency of public spending and low taxation led to a limitation of fiscal space, which should be used as a priority to solve and address long-term social security and protection needs within the planned fiscal trajectory<sup>10</sup>. Given the small size of the national market, the open nature of the economy and its high degree of dependence on the processes in the EU and the euro area, tax and social security policy must be tailored to the promotion of the business environment and the achievement of higher sustainable economic growth. The development of economic capacity to ensure higher incomes, and, accordingly, social security budget revenues would ensure fiscal sustainability and stability of the pension system in the medium term.

Public investment projects with national and European funding are a major source for improving and protecting the environment in the context of the green transition, infrastructure and trans-European connectivity, modernization of educational and social infrastructure, and their delay had a negative impact on convergence and catch-up income growth. The mechanisms for transparent spending of public funds for investment projects are still limited only to compliance with European procedures, but the capacity to implement public-private partnerships, where the private sector shares the risk, is still not developed. In 2022, capital spending, an important fiscal stimulus for economic growth, slightly increased as a share of GDP to 3.5%, however, to a much lesser degree compared to 5.9% of GDP in 2014 and 7.7% in 2015 when the payments for the European projects for the program period 2007-2013 ended. Expectations for accelerated implementation of European investment projects for the EU program period 2014-2020 in 2022 have not been justified. The latter puts the fiscal position for 2023 at risk, because, in addition to the end of the already finished EU program period, the implementation of the new projects for the 2021-2027 EU program period, as well as the projects under the NRRP, began, and emphasis should be placed on the optimization of current costs and improving their efficiency.

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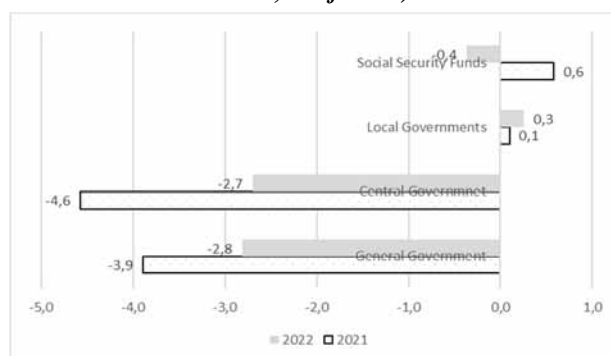
<sup>10</sup> This issue is discussed in detail in Tsanov, Shopov, Hristoskov (2022).

### 2.3. Budget balance and government debt

The deficit of the General Government for 2022 amounted to 2.8% of GDP (Figure 6), fulfilling the Maastricht criteria. The deficit of the central government decreased on an annual basis, mainly due to the low implementation of the European investment projects and the limited capital expenditure with national funding. The surplus of social security funds was a result of larger transfers from the central government.

The cash deficit of the CFP is significantly lower due to the surplus on European funds. The continued maintenance of a national budget deficit for the third year in a row is the result of the government's discretionary policy in income and social protection. The structural reforms should be undertaken in the revenue and expenditure parts of the budget, as the continuity of deficits over the following years threatens fiscal sustainability in the medium term.

**Figure 6. Fiscal deficit by sub-sector of General Government for 2022 and 2021 (accrual basis, % of GDP)**



Source: Fiscal Notification (April 2023).

The increase in government debt to finance the fiscal deficit because of the expected lower budget revenues relative to government expenditures in the coming years and higher interest rates in international financial markets will lead to an increase in debt servicing costs and will further limit fiscal space for priority spending policies. The consolidated government debt for 2022 amounts to 22.9% of GDP, which continues to be among the lowest in the EU. The external debt represented 70% of the consolidated government debt. In March 2022 the Eurobonds of EUR 1.25 billion were repaid, but the debt issuance of Eurobonds remained with the largest relative share in the government debt structure.

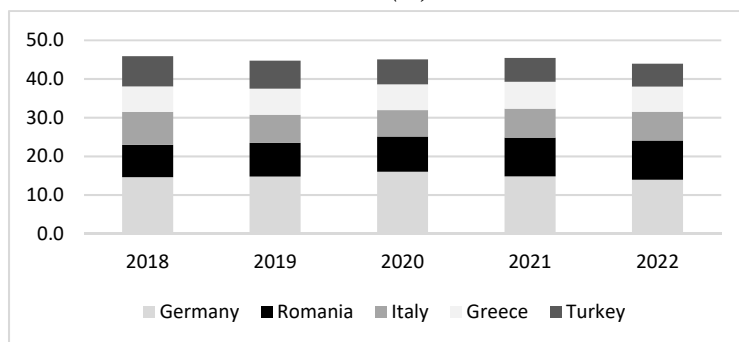
## 3. External Sector and External Economic Environment

### 3.1. Main trading partners and processes in foreign trade in goods in 2022

According to BNB data on Bulgaria's trading partners, Germany, Romania, Italy, Greece, and Turkey stand out as regards merchandise exports, consistently accounting for over 45% of Bulgaria's total exports between 2018 and 2022 (Figure 7). That is why the economic

situation in the abovementioned countries, as well as the prospects for their economic development, are key factors for the dynamics of Bulgarian foreign trade in goods.

**Figure 7. Share of Bulgaria's total exports to major trading partners in the period 2018-2022 (%)**



Source: Bulgarian National Bank.

Bulgarian exports are directed to the domestic market of the euro area, which accounts for over 45% of the country's exports. The weaker recovery of the German economy, the steady decline in the importance of the Italian and Greek markets for Bulgarian exports in recent years and the uncertain macroeconomic situation in Turkey are factors that further negatively affect the dynamics of exports of goods in 2022.

In the period 2018-2022, Germany accounts for 15% of Bulgaria's total exports of goods, making its economic development key for Bulgaria as regards foreign trade. Despite maintaining its persistently high income levels (GDP per capita in PPP is above 120 compared to the EU average), the German economy was beginning to experience a slowdown in economic growth due to the lower domestic demand growth rates, slowing export growth because of global and regional uncertainties, and the gradual imposition of new environmental standards in manufacturing and especially automotive. The severely tightened health measures to contain the COVID-19 pandemic further exacerbate the processes described. Such a development would adversely affect the opportunities of Bulgarian exporters given that the high exports of goods to Germany are primarily based on German investment attracted in the country. According to BNB data, the share of foreign direct investment from Germany in total foreign investment attracted for 2022 is 10% (EUR 235 million). The most affected by a deterioration in economic development in Germany would be exports of raw materials (copper, ores, and precious metals) as well as investment goods from the engineering, chemical, electronics and pharmaceutical sectors, which are also high value-added.

The share of Bulgarian exports to Romania is gradually increasing, amounting to 10% of total exports in 2022. The geographic proximity of the country allows for export specialisation mainly in agricultural production, but the accelerated growth rates of the Romanian economy (GDP per capita in the PPP of 55 compared to the EU average in 2011 reaches 77% in 2022) also expand the opportunities for exports of electricity, medicines,



agricultural machinery, and goods from the chemical industry. The fiscal measures to increase the average income in all age groups, the improvement of the business environment and the accelerated attraction of foreign investment shape the increasing import and investment goods needs in Romania and provide new opportunities for Bulgarian exporters.

The economic difficulties after the global financial and economic crisis of 2008 in Italy led to a gradual decrease in exports of goods from Bulgaria, with their share in 2021 and 2022 stabilizing at 7.5%, while in 2008 Italy was the first among Bulgarian foreign trade partners. The traditional links between the two countries in the field of foreign trade are based on the enterprises financed by Italian investments, which in 2022 exceeded 197 million euros, as well as the high share of Bulgarian emigrants, which are more than 60 thousand people (according to Eurostat). Very similar to the economic situation in Italy is the economic situation in Greece, whose share in Bulgaria's merchandise exports is gradually shrinking and in 2022 amounted to 6.5%. The Bulgarian trade flows to Greece are mainly related to the country's tourism sector as regards hotel equipment, food products, non-durable consumer goods and textiles. Given the high cyclical vulnerability of the tourism and travel sector, export opportunities from Bulgaria to Greece are volatile. In addition to geographical proximity, traditional links through Greek-owned enterprises and a large expatriate community also contribute to trade between the two countries.

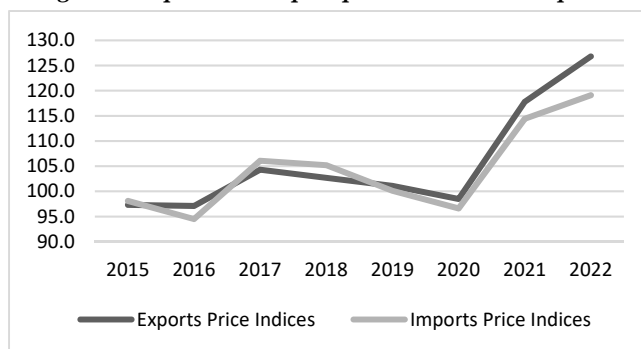
The average value of exports of Bulgarian goods to Turkey over the last 5 years is the same as that to Greece and is approximately 7% of total foreign trade. Following the depreciation of the Turkish lira and difficulties in the functioning of Asian supply chains, which Turkish exporters are partly compensating, Turkish export opportunities are favoured, which negatively affects Bulgarian exporters. Strong domestic consumption has been a key driver of Turkey's economic growth, sustaining imports, but the outlook for 2023 looks unfavourable. The slowdown in private investment in physical capital is expected to be offset by higher public investment, especially in infrastructure in the affected areas by the devastating earthquake in February 2023 and by the spending incurred in the pre-election period. Domestic demand is expected to be supported by sustained job creation and a substantial increase in the minimum wage in 2023, but it should not be overlooked that unemployment is permanently settling at 10%.

### 3.2. *Foreign trade developments in 2022*

The analysis of Bulgarian foreign trade relations in 2022 shows that the advantages arising from the increase in global prices are being realised to a relatively low degree and structural inability of the economy to adapt to higher-tech production is evident. To a large extent, the developments observed in 2022 are not significantly different from previous years. However, several specific factors stand out:

- 1) After 2019, the export price index for commodities is higher than the import price index in Bulgaria which is an indicator of improved terms of trade for the economy (Figure 8). The most significant price advantages in 2022 are realized in trade in agricultural products and mineral fuels and to a lesser extent in chemicals and investment goods.

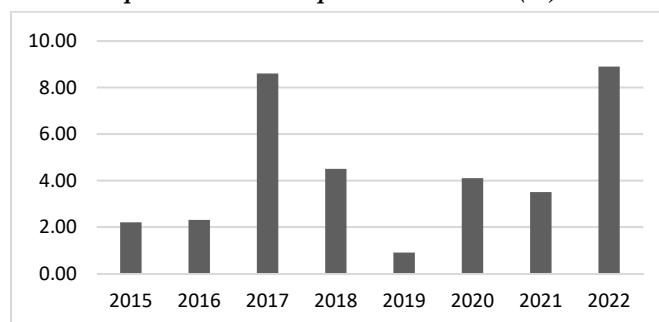
**Figure 8. Bulgaria's export and import price indices in the period 2015-2022**



Source: National Statistical Institute.

- 2) As regards labour costs, Bulgaria is one of the EU Member States with the most pronounced tendency to lose competitiveness vis-à-vis euro area trading partners (Figure 9). This indicator reflects not only changes in the exchange rate but also changes in labour costs, given the catching-up effects in the Bulgarian economy. In 2022, Bulgaria is the EU Member State with the highest labour cost growth in the whole EU, ahead of Estonia, Lithuania, and Hungary.

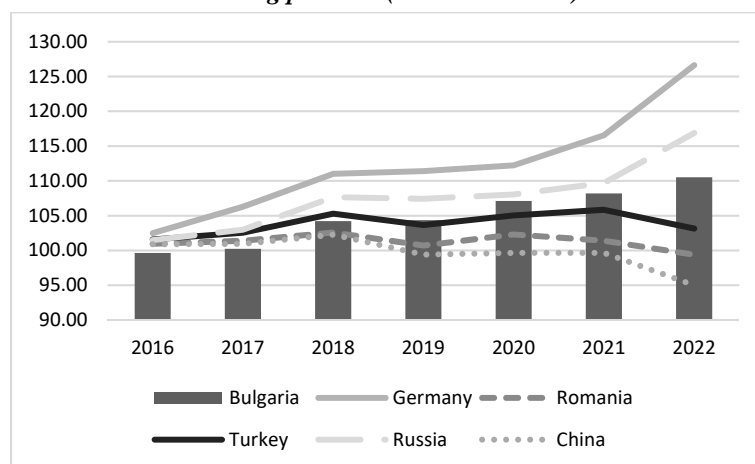
**Figure 9. Annual labour cost change in Bulgaria relative to the main euro area trading partners over the period 2015-2022 (%)**



Source: Eurostat.

- 3) Bulgaria's main import trade partners are Germany (10.6%), China (9.2%), Russia (8.7%), Turkey (7.1%) and Romania (5.3%). A comparison with the real effective exchange rate by trading partner (Figure 10) shows that the Bulgarian currency appreciates in real terms against the Turkish lira and the Romanian leu, which is unfavourable as regards the exports to these countries.

**Figure 10. Real effective exchange rate deflated by the consumer price index against 42 trading partners (index 2015=100)**



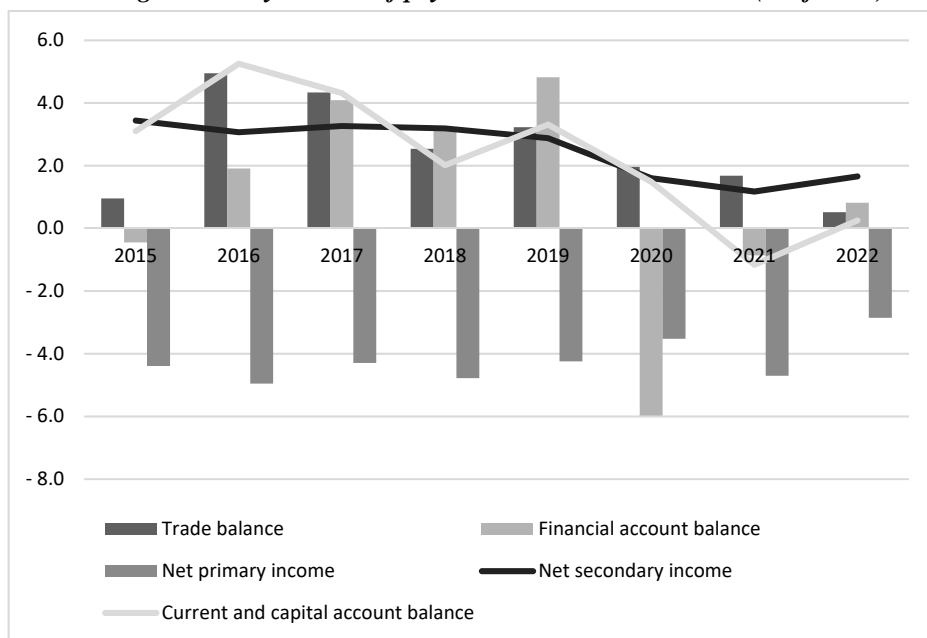
Source: Eurostat.

The higher value of the BGN against the Chinese yuan favours increased imports from China, and this is a prerequisite for a deterioration of Bulgaria's external trade balance. On the other hand, the process of appreciation of the Russian rouble in 2022 due to high energy prices and capital flow controls imposed by the Russian central bank made fuel imports from the country even more expensive. Given the high energy intensity of the Bulgarian economy, these developments further deteriorate competitiveness and have a negative effect on the terms of trade. On the positive side, the differences in the real effective exchange rate between Bulgaria and Germany favour the increase in exports to the country's main trading partner, despite signs of a contraction in domestic demand in Germany.

### 3.3. Balance of payments and external debt position

In 2022, the current and capital account balance improve relative to 2021 and amounts to 0.25% of GDP (Figure 11). The main contributor to this change is the over 70% year-on-year increase in general government receipts. The relative recovery of the economies of Spain, Italy and Greece has an impact on remittances received from nationals working abroad, which amount to 2% of GDP in 2022. Although shrinking in 2022, the primary income balance continues to be negative with a recorded outflow of over EUR 4 billion (4.8% of GDP) of investment income from Bulgaria. This process reflects the unfavourable investment environment in the country, where incentives to reinvest profits and business confidence of foreign investors are low. This is also demonstrated by foreign direct investment hardly exceeding 3% of GDP in recent years.

**Figure 11. Key balance of payments indicators 2015-2022 (% of GDP)**



Source: Bulgarian National Bank.

The country's external trade balance is also slightly positive (0.5% of GDP) with substantial growth in exports and imports of goods and services in 2022, reflecting higher prices and volumes of exported goods (especially electricity) and higher domestic demand and a high import component of exports. The relative improvement in the terms of trade (Figure 8) has had some restraining effect on the trade deficit. The trend of recent years for net trade in services to be positive has been maintained, exceeding 6.3% of GDP in 2022. The phasing out of the COVID-19 countermeasures and rising inflation, which is leading to an improvement in the terms of trade in services, allow for an annual growth of over 30% in international transport revenues and over 55% in tourism revenues in 2022. The two components of services have steadily accounted for over 60% of Bulgaria's total services exports by 2018, with their share shrinking to 45% between 2020 and 2022 because of the COVID-19 constraints.

The higher accumulation of foreign assets of residents in 2022 leads to a persistence of the positive balance on the financial account of the balance of payments (5.5% of GDP). This is mainly due to a substantial increase in foreign currency and deposits in Bulgarian banks of over EUR 3.2 billion, leading to an increase in the BNB's reserve assets, and a positive net value of the "Portfolio investments" item.

At the end of 2022, the country's gross external debt stands at 52.5% of GDP. Public sector external debt increased by 2.4% y-o-y, due to the EUR 2.25 billion sovereign Eurobond issuance on international capital markets in September 2022. Private sector external debt

changed to a more significant extent (10.1% annual growth), mainly driven by the increase in the country's short-term banking sector debt. Although such a development is unfavourable, starting from the stronger pressure to repay short-term debt, the country's external debt dynamics are not unsustainable at present and the debt burden is far lower compared to other countries.

#### **4. Banking Sector and Capital Market in Bulgaria**

##### *4.1. The banking system in 2022*

In 2022, the banking sector operated in an environment mostly characterized by the military conflict in Ukraine, which resulted in the interruption of some traditional partnerships and sustainable logistics chains, as well as to blocking of a considerable portion of business activities globally because of the sanctions imposed against Russia. To rein in price trends, most central banks (including the ECB) took measures towards monetary tightening. The transmission of the effects of the monetary policy in Bulgaria resulted in simultaneous dynamics of inflation.

Against the background of the stable condition of the banking sector and the weakening of risks related to the COVID-19 pandemic as early as February 2022, BNB announced that it would discontinue the effect of the macroprudential measures imposed in March 2020 in relation to restrictions on banks' profit distribution for years 2019 and 2020. As from 1 April 2022, the effect of the measure for imposing individual and group limits on foreign counterparts aimed at limiting credit risk and the risk of concentration in the balances of commercial banks was also discontinued. The timely introduction of the above-mentioned measures had a crucial role in limiting the specific risks that arose during the period of the pandemic, but given their weakening, the lifting of measures at the beginning of last year was quite logical.

Along with that, the regulator took actions directed at the growing risk of cyclical decline, which were dictated by the prolonged high rates of credit growth and the increased economic uncertainty. As early as 2021, BNB announced two decisions to raise the level of the countercyclical capital buffer (respectively from 0.5% to 1.0%, as from 1 October 2022, and to 1.5%, as from 1 January 2023), and on 29 September 2022, a decision was made for another raising of the countercyclical capital buffer to 2.0%, as from 1 October 2023. During the annual review of the so-called other systemically important institutions, eight banks were identified for special measures. To obtain a more precise assessment of the risk resulting from the high growth rate (and the increasingly probable adjustment) of home prices at the beginning of 2022, BNB introduced an additional reporting form providing detailed information about the real estate-secured loans granted by banks to households.

The overall approach for managing the price dynamics (not only on the real estate market) continued in 2023, and by means of the amendments to Ordinance 21 of BNB adopted in April of the same year, as from 1 June 2023 the process of minimum reserve requirements on attracted funds from non-residents will be made equal to those from residents (by increasing it from 1 to 10%), and a month later (as from 1 July 2023) minimum reserve

requirements on all attracted funds (from both residents and non-residents) will be raised from 10 to 12%.

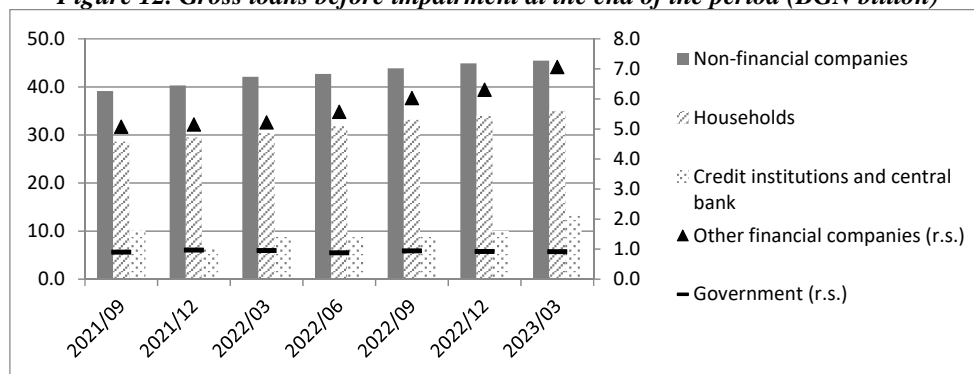
The banking system is adapting (without having to take any particularly active actions) to the changing situation, and in the conditions of automatically rising loan interest rates (as far as most loan agreements have been arranged under conditions for floating interest rate, or have a limited initial period of fixed interest rate), gross interest income increased by 19.4% on an annual basis against a much more moderate increase in gross loans (13.5%). There is a comparable rate of increase (18,5%) in gross fees and commissions income along with the increase in the net interest margin resulted in a record profit for the sector, at the amount of BGN 2,079 billion (or 46.8% more than in 2021). As a whole, 2022 was characterized by retaining intensive lending rates against the background of a still moderate increase of interest rates (which could be explained by the significant volume of liquidity buffers accumulated), faster growth in operating expenses (interest on deposits and fees) because much lower volume compared to gross revenue so far do not significantly affect net income; still continuing (though insignificant) costs for impairment and accrued provisions and most of all – the record increase in the sector’s financial results.

In the conditions of serious challenges in the economic and regulatory environment, the Bulgarian banks continue to be sustainable and profitable, to retain high levels of liquidity and capital buffers. The immediate main trends in the sector are (directly and indirectly) dictated by the processes related to the military conflict in Ukraine; the restructuring of assets and liabilities so as to limit risks resulting from the rising interest rates; maintaining an adequate dynamic balance between lending conditions and standards in an unfavourable macroeconomic environment, but also from the intensive processes of digital transformation and establishing the necessary basis for managing the processes related to a transition to the green economy.

#### 4.2. Lending activity and savings

As a result of the increased economic activity, loans to entities at the end of 2022 reached BGN 44.9 billion (Figure 12).

**Figure 12. Gross loans before impairment at the end of the period (BGN billion)**



Source: BNB, own calculations.

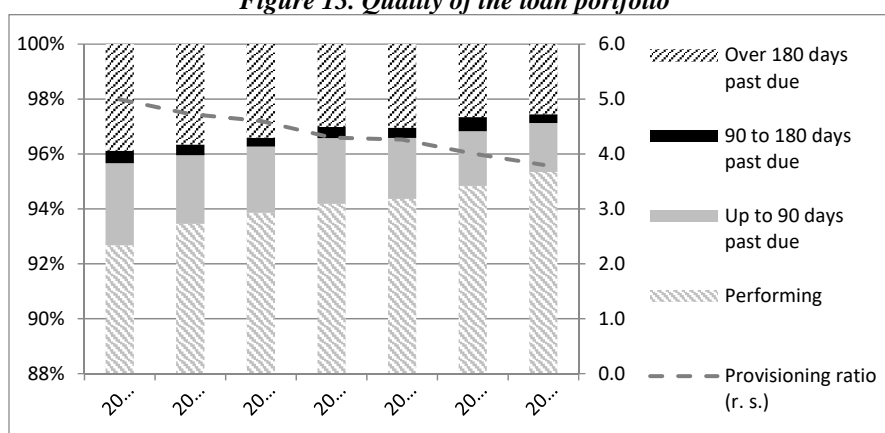
Over BGN 11.10 billion of contracted loans in the segment have an original maturity of over 5 years and thus the share of long-term loans reaches 55.5%. This is due to the different structure of lending activity because of the raising of reference rates to which the effective interest rates are linked, the lower optimism of economic agents and the greater need of loans for working capital to finance operations because of the intensively growing costs of manufacturing and principal activities.

Along with the increased interest on loans for working capital, the higher lending activity in the corporate segment can also be attributed to the retention of the lending policy of commercial banks. The summarised results from the BNB lending activity survey show that more active actions to raise the interest spread were only taken at the beginning of the second half of 2022 which incentivized economic agents to benefit from the decreasing effective interest rate on loans.

The changes in the price and interest dynamics in the third quarter of 2022 resulted in interrupting the trend of higher lending. It can be expected that given the rising risks of recession (both in Bulgaria and in its main trade partners) banks will be less prone to taking risks in corporate lending. The costs for provisions may start rising, which may provoke further tightening of both lending standards and the conditions of loans offered (in view of charging the increased risk premium as part of the price of the loan).

The nominal increase in loans to non-financial corporations (NFCs) by 4.6 billion for 2022 is significantly faster than that of new business volumes in the segment (BGN 3.8 billion). This is partially due to the continuing weakening of the pressure against the increase in the gross amount of the portfolio from a forced collection of past-due receivables and the writing-off of non-performing loans. In 2022 this trend was largely due to the rising share of performing loans (Figure 13) but also to the slower (compared to the nominal turnover rates in most sectors) increase in effective interest rates, respectively – in loan servicing costs. Such a trend was also influenced by the residual effect of the contracts concluded under the procedure for deferral of payables which results in some restriction in forced collection activities, respectively – to maintaining exposures that would have otherwise matured.

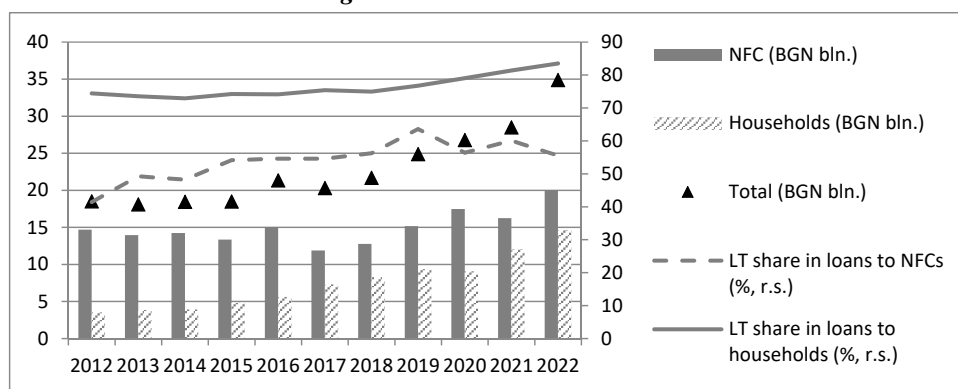
**Figure 13. Quality of the loan portfolio**



Source: BNB, own calculations.

There were particularly favourable trends in retail lending (Figure 14). The sector demonstrated high activity and the total new business volume continued to grow which is 44.2% higher than in 2020. The increasing share of long-term household loans was also evident. The faster growth in consumer prices and living costs compared to the nominal increase in wages motivates households to apply for a consumer loan and to structure their repayment plan so that the costs for servicing their debt take up the lowest possible share of their disposable income.

**Figure 14. New business volumes**



Source: BNB, own calculations.

The negative trend in the number of property transaction registrations with the Registry Agency since the end of the first half of 2022 to a large extent explains the relatively small growth in the share of mortgages. The demand and realization rates in the segment will weaken in 2023 which would result in a gradual decrease in the share of long-term loans within the overall contracted amount of loans to households.

The change in the parameters offered by individual banks on specialized websites, as well as the change in the balance of loan conditions (according to the results of the annual BNB lending activity survey) show without a doubt that the number of banks offering better conditions, especially in the past years, has decreased, and this has resulted in a lower number and gross amount of re-financing transactions in 2022. This trend may continue in the mid and long term and will initially result in an even greater shrinkage in the share of re-financing, followed by a limited new business volume for households in general.

Savings continue to grow irrespective of the slower rate of deposit interest raising and respectively the retention of negative actual profitability on all deposit products. The total amount of attracted funds from the non-financial sector grew by 15.41% on an annual basis. Households increase their deposits at a much slower rate – by less than 1/10 – mainly due to the beginning of disinflation processes at the end of the third and the beginning of the fourth quarter in 2022.



#### 4.3. The capital market in Bulgaria

The market capitalization of the segments organized by the Bulgarian Stock Exchange (BSE) decrease by 2% in 2022 compared to the end of 2021. In the BSE trading structure, the largest share of 47% is the turnover of the Standard shares segment, followed by the share of the turnover of the segment for companies with a special investment purpose on the main market and that of the segment of shares on the alternative market. The capitalization of the Premium shares segment increased by BGN 66 million (or 4.3%). In 2022, a decline was noted in the capitalization of the Standard shares segment by nearly BGN 887 million. In the capitalization of the segments for shares of joint-stock companies with a special investment purpose (REIT) on the main market, there was a change of 9.4% and an increase in the capitalization of the same segment for shares on the alternative market by 1.25%.

2022 ended with a divergent change in the values of the BSE indices (SOFIX, BGBX40, BGTR30 and BGREIT). The movement in the values of SOFIX, BGTR30 and BGBX40 was similar, and the change in BGREIT had a different form, which is due to the type of companies that make up the index (Table 2). The value of SOFIX decreased by 5.4% and the index performed better compared to the recorded double-digit declines of other national measures during the year. The movement of the broader index BGBX40 is analogous to the behaviour of SOFIX. BGREITH managed to fully recover its value after the global financial and economic crisis of 2008 and even reached record values. At the same time, in the period 2018-2022, a well-defined cycle of rise and fall in the trading levels of securities on the Bulgarian stock market is observed, which to a significant extent reflects the trends of the world financial markets.

**Table 2. Main indicators of the development and activity of the Bulgarian capital market for the period 2018-2022**

Indicator	2022	2021	2020	2019	2018
Market capitalization (million BGN)	30 176	30 781	28 355	27 905	26 765
Market Cap/GDP (%)	19.53	22.14	23.64	23.30	24.40
SOFIX	601.49	635.68	447.53	568.14	594.46
Change in SOFIX value (%)	-5.38	42.04	-21.23	-4.43	-12.25
BGBX 40	139.28	143.68	101.38	111.83	115.91
Change in BG40 value (%)	-3.06	41.72	-9.34	-3.52	-12.19
BG TR30	731.20	682.96	499.17	516.28	496.14
Change in BGTR30 value (%)	7.06	36.82	-3.31	4.06	-10.76
BG REIT	183.17	163.98	137.69	130.03	121.07
Change in value of BGREIT (%)	11.70	19.09	5.89	7.40	4.28

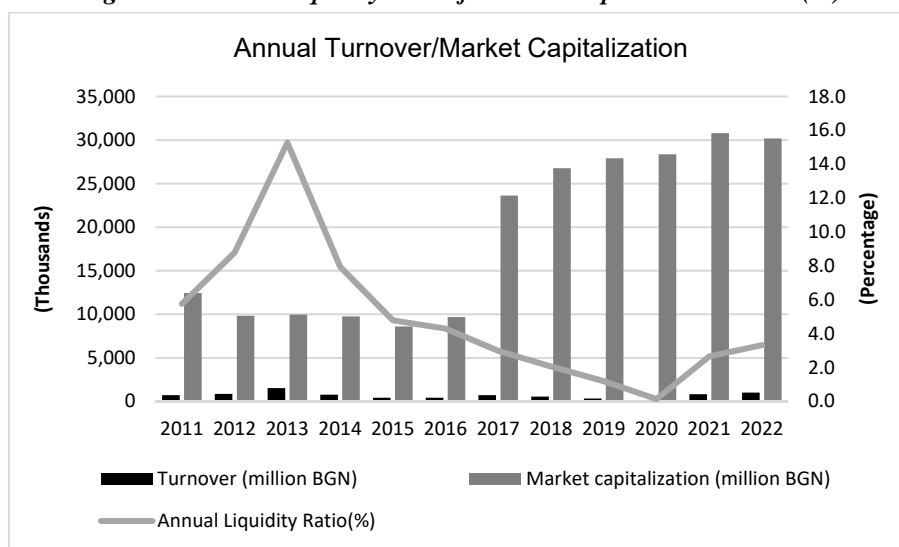
Source: BSE, Annual Statistics, FSC, own calculations.

The Bulgarian capital market remains small during the period 2018-2022. It continues to be characterized by low liquidity and extremely low turnover of trade, with the main share of equity capital concentrated in unlisted shares and other types of capital, and the share of loans remains high. The period since the global financial and economic crisis of 2008 has affected the results of public companies. However, in recent years they have started to report an improvement in their sales and profits. This can restore confidence in investors, and hence facilitate the financing of Bulgarian companies and the issuance of shares. The number of transactions is an important indicator of the comparability of exchange operators. It

complements the turnover information by showing to what extent the turnover is realized by the high liquidity or the large number of financial instruments traded through single trades. One of the main problems with transaction prices in the conditions of low market liquidity and an underdeveloped market is that they are subject to manipulation, respectively deforming the values of trade turnover and market capitalization. This largely applies to the Bulgarian capital market.

Although for the last 20 years, the Bulgarian capital market has been permanently established with low activity on the primary market, low turnover on the secondary market and low capitalization in relation to GDP, the BSE's turnover has already reported growth for the third year in a row in 2022 due to the huge unused potential and some initiatives undertaken by the BSE (incl. the opening of the new BEAM market for growing companies). The expected annual turnover of BGN 1 billion was realized after over 100,000 transactions with more than 233 million lots. For comparison, a similar volume was registered in the distant 2013 (Figure 15). The ratio between trading volume and market capitalization, which is considered an indicator of market liquidity, shows a very sharp decline from 15.3% in 2013 to 0.1% in 2020 during the COVID-19 crisis and a recovery to only 3.3% in 2022. This is a big risk because if the turnover does not increase, ownership will change in about 50-60 years. On the other hand, the market decline is a result of the global financial and economic crisis of 2008 and the regulatory changes undertaken in its wake, driving away many investors who previously traded on the BSE when share prices rose rapidly and were unrealistically high.

**Figure 15. Annual liquidity ratio of BSE in the period 2011-2022 (%)**



Source: Own database calculations from the World Bank Global Financial Development Database.

The positive results in 2022 can also be represented by the 7 successful and 1 unsuccessful initial public offering (IPO), 6 of which are on the market for the growth of small and medium-sized enterprises – BEAM. On the other hand, shares and other stock instruments of

400 foreign companies are already traded on the stock exchange in Sofia. The purpose-built BSE International market, which launched on July 5, 2021, with the shares of around 200 well-known foreign companies, is in addition to all instruments traded on the BSE and enables investors to access all the world's most liquid companies. Investors can also invest in exchange-traded funds, which follow the movement of indices such as the DAX, S&P 500, FTSE All-World, NASDAQ-100 and STOXX Europe 600.

In Bulgarian conditions, however, there are several problems that do not allow the capacity of non-bank financing to be deployed. The lack of professional training and subsequent understanding of how stock markets work leads to low interest, low levels of liquidity and low efficiency. Banking is extremely popular and is valued as a highly prestigious activity in society, leading to a mass preference by both investors and citizens over the capital market. This is evident from the high levels of excess liquidity in the banks because of the accumulated savings of the population compared to the minimal trade turnover and ownership indicators of the stock market in the country. Another important issue to focus on is market manipulation and the removal of insiders from the markets. The presence of insider trading reduces efficiency, discourages, and drives bona fide investors<sup>11</sup> out of the market. This function should be within the prerogatives of the Financial Supervision Commission, but the problem is that: "most sanctions imposed by the Commission for market manipulation are confirmed by the court, but the disclosure and proof of these cases is complicated and slow" (Dima, Barna, Nachescu, 2018). Thus, the main challenges to the development of the capital market in Bulgaria stem from the control of insider trading, the lack of quality capital projects and the protection of minority shareholders in the case of high concentration of shareholder ownership.

## **5. Forecast for the Development of the Bulgarian Economy until 2025**

The macroeconomic forecast is based on assumptions about economic developments in the medium term (until 2025) regarding international prices and external demand, as well as the economic policies adopted by the government and outlined in the Medium-Term Budget Forecast for the period 2023-2025. The macroeconomic forecast of the ERI at BAS is based on macroeconomic information available as of April 28, 2023.

### *5.1. Key Assumptions for the Period 2023-2025*

The forecast is based on a structural model that includes key macroeconomic indicators. The simulations are made under the following assumptions:

- Global economic activity and trade volumes are expected to slow down, primarily affecting developed economies and to a lesser extent developing countries.

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<sup>11</sup> Bona Fides Invest is an EU-based financial technology that globally helps individuals and organizations finance their projects through crowdfunding (Foote QC, 2021).

*Zlatinov, D., Sariisky, G., Yotzov, V., Paliova, I., Vojcheska-Nikodinoska, K., Georgieva, S. (2023). Bulgarian Economy on the Verge of Euro Area – Current Challenges and Medium-Term Projections.*

- Despite the easing of inflationary pressures, especially concerning energy resources, inflation will remain relatively high as central banks of G7 countries continue to pursue restrictive monetary policies in the short term.
- The military conflict in Ukraine will continue, and in the second half of 2023, further escalation is possible. Sanctions imposed against Russia and Belarus will continue to be effective and might be strengthened.
- Prices of essential energy resources will remain high compared to the average values of the previous three-year period, but with a tendency to gradually decrease.
- Most EU Member States will enter a recession in 2023, which will suppress Bulgaria's external demand, and export rates will decline, particularly during the current year. This will be counteracted by the production and export of military products and electricity, which will continue throughout 2023 and probably in the following years.
- The inflow of financial flows to the country will mainly depend on funds from EU programs and the package of programs related to the European Recovery and Resilience Fund.
- Economic activity will continue to be subdued due to both the unstable external environment and internal political specificities. Acceleration of economic development can be expected after 2023, as the effects of the absorbed funds allocated by the NRRP become evident. However, economic growth rates will remain low (especially at the beginning of the forecast period) and will not exceed the potential GDP growth.
- If there are no new shocks to energy prices, the economy will enter a period of disinflation, but the process will be rather slow. Meeting the Maastricht inflation criterion within the forecast period is highly unlikely.
- There is significant uncertainty concerning the labour market. A substantial increase in unemployment is not expected despite rising wages in recent months. This can be explained largely by the deteriorating demographic situation in Bulgaria rather than economic activity. However, such a state of the labour market is unsustainable.
- The budget deficit will be heavily dependent on the political situation. Continuing the implementation of adopted compensatory mechanisms and promises of further increases in the minimum wage and pensions will not allow the economy to achieve a balanced budget throughout the forecast period. The public debt is likely to reach levels of about 30% of GDP by the end of the period, but this is unlikely to have a significant impact on economic activity and inflation. Significant changes in the tax policy are not expected.
- The recent policy of the BNB to increase the minimum reserve requirements is not expected to have a significant effect on inflationary processes in Bulgaria but would reflect in some slowdown in the pace of lending.

## 5.2. *Dynamics of key macroeconomic indicators during the forecast period*

Given the unfavourable external and internal economic environment, real GDP growth is expected to decline to around 1.7% in 2023. High inflation in the past two years means that by 2024, the nominal GDP will exceed BGN 200 billion. By the end of the forecast period, economic growth is expected to gradually recover to pre-COVID-19 levels. The forecast for Bulgaria's economic growth in the medium term is expected to remain at around 3-3.5% annually. The growth in investments will mainly depend on the progress of the program period and the expectations for accelerated absorption of European funds in Bulgaria, especially under the NRRP.

At the beginning of the forecast period, internal demand will decrease, but it is expected to gradually recover. The dynamics of consumption will be influenced by increasing wages, moderate employment growth, and weak but positive credit activity which will be further slowed down by measures taken by the BNB to increase minimum reserve requirements. The contribution of external demand to economic growth is expected to remain negative throughout the forecast period.

Inflation is expected to remain higher than usual in recent years, largely due to external factors and some inconsistent decisions in the field of economic policy (implementation of measures not in line with the country's real financial capabilities), contributing to a higher rate of price growth compared to the EU Member States' average values. High inflation and potential fiscal consolidation will have a negative impact on households' purchasing power, which is expected to lead to relatively weaker consumption growth. Inflation leads to higher production costs, which, combined with high economic uncertainty at both domestic and international levels, is expected to result in restrained investment activity, largely determined by public capital expenditures.

During the second half of the forecast period, a recovery in internal demand is expected based on a combination of real income growth and a decrease in inflationary pressures. The external sector is not expected to make a significant contribution to economic growth in the coming years. In 2023, the current account deficit is expected to slightly decrease mainly due to price factors (improving trade conditions), but over the entire period, the trade balance is likely to remain negative.

Until 2025, employment in Bulgaria is expected to continue to be determined by the pace of economic growth, considering demographic constraints. At this stage, there is no consideration of a change in labour supply due to the refugee wave from Ukraine, as almost one-third of the refugees are of working age, and the rest do not demonstrate (at least for now) a desire for permanent settlement in Bulgaria. Unemployment is forecast to remain at the same levels, even slightly decreasing. Wage growth will remain positive in real terms but lower than in previous years.

Considering the overall macroeconomic situation, lending in the economy (both for households and firms) will slow down at the beginning of the forecast period due to the negative impact of higher interest rates, with a tendency to gradually increase in the following years. As most commercial banks in Bulgaria maintain reserves significantly above the minimum reserve requirements, the recent changes in the BNB's monetary policy are

Zlatinov, D., Sariisky, G., Yotzov, V., Paliova, I., Vojcheska-Nikodinoska, K., Georgieva, S. (2023). *Bulgarian Economy on the Verge of Euro Area – Current Challenges and Medium-Term Projections.*

expected to have a weak effect, and the effect on the money supply strongly depends on the population's reaction to available money.

**Table 3. ERI's Macroeconomic Forecast until 2025**

	Preliminary	Forecast		
	2022	2023	2024	2025
<b>Real Sector (%)</b>				
Economic Growth – Growth Rates by Components	3.4	1.7	3.4	3.1
Private Consumption	4.8	3.6	3.6	3.5
Public Consumption	6.5	5.4	5.4	5.0
Gross Fixed Capital Formation	-4.3	5.5	4.8	5.5
Exports of Goods and Services	8.3	2.3	5.7	6.7
Imports of Goods and Services	10.5	5.4	6.1	7.3
<b>Price dynamics (%)</b>				
Average Annual Inflation (HICP)	13.0	9.0	4.0	2.7
GDP Deflator	15.1	11.7	4.2	3.5
<b>Labor market</b>				
Employment Rate (ages 15-64)	70.8	71.0	71.1	71.1
Unemployment Rate (ages 15-64)	4.3	4.0	3.9	3.9
Increase in Wages (%)	12.8	11.6	6.6	5.7
<b>Rest of the World (% of GDP)</b>				
Current Account	-0.7	-0.8	0.3	1.2
Trade Balance	-5.8	-3.3	-2.3	-1.3
Capital Account	0.9	0.9	1.3	1.4
Financial Account (including currency reserves)	5.5	3.3	2.5	2.5
Foreign Direct Investments	3.6	3.3	3.4	3.6
Gross External Debt	52.5	50.6	51.9	53.3
<b>Financial Sector (annual change, %)</b>				
Money Supply (M3)	13.2	11.2	8.7	7.8
Credit to Non-Financial Sector	12.1	5.3	6.8	6.2
<b>Fiscal Sector (% of GDP)</b>				
Budget Revenues	39.2	36.4	36.5	36.7
Budget Expenditures	40.0	40.2	39.5	39.7
Budget Balance (on cash basis)	-0.8	-3.8	-3.0	-3.0
Debt of the "Central Government"	22.4	23.6	25.5	27.1

### 5.3. External and internal constraints on economic growth and risks

The risks of a possible escalation of the military conflict between Russia and Ukraine and its potential transformation from a local to a global conflict are difficult to estimate. The consequences would be of such magnitude that any forecasts would become meaningless and thus would not be considered. Therefore, we pay attention to other limitations and risks:

- The inability to form a lasting political consensus on important issues for Bulgaria jeopardizes the implementation of already undertaken commitments, including those related to the NRRP. If this situation continues, a higher budget deficit and a greater need for external financing can be expected. In such circumstances, joining the euro area could be postponed until after 2025.

- The external environment is likely to remain unfavourable, with the risk of further deterioration if a quick resolution to the military conflict between Russia and Ukraine is not found. The slowdown in economic growth in the euro area has already been observed. Given the inflation dynamics, it is more likely that the ECB will follow its policy towards a gradual increase in interest rates.
- The domestic demand, which has been emerging as a key factor driving economic growth over the past two to three years, is unlikely to grow at the same pace as before the COVID-19 pandemic. The increase in purchasing power will be limited by the slower growth of new jobs and higher inflation.
- The Bulgarian economy has practically achieved (or is very close to) full employment. Any newly created job will come at the expense of reducing the number of unemployed and increasing the employment rate in the pension-age population group. However, there are natural limits to this process, which are nearly reached.
- The risks associated with inflation are asymmetrical and trending upwards. The unstable economic environment, as well as the accumulated excess liquidity and growing public debt from previous years, will also influence inflation expectations.
- In a more optimistic scenario, the quick resolution of the military conflict in Ukraine and the activation of European funds can further accelerate economic growth but the likelihood of such developments is rather low.

## **Conclusions**

The study of the Bulgarian economy in 2022 as well as the forecasts for its development in the medium term until 2025, allow us to highlight some recommendations for the national economic policy.

Measures to preserve the purchasing power of people's incomes in a context of high inflation:

- The slowing down of inflation cannot be tackled by pursuing a pro-inflationary fiscal policy without corresponding measures to stimulate productive capacity and overcome the structural imbalances arising from the investment environment and the labour market challenges related to the age and education of the workforce.
- Domestic factors of higher price dynamics can be addressed by introducing a tax-free minimum on personal income to overcome the high-income inequality in Bulgaria and to support the purchasing power of the lowest income groups. Fiscal support should be strongly differentiated and based on clear criteria to compensate for the purchasing power of certain population groups to ensure sufficient budgetary buffers.
- The focus of labour market policies should be on the restructuring of productive capacities through the effective use of financial resources under the NRRP. An effective transition to a green and digital economy requires changes in labour legislation to help regulate the process of identifying, reaching, and activating people of working age who are not working, studying, in vocational training or registered with labour offices.

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- The demographic factor is becoming increasingly important in Bulgaria, which acutely raises the question of the need for effective policies to regulate it. Policies are needed to facilitate immigration and labour market transitions from different regions of the country and abroad. Solutions to the problem should also be sought in attracting back to Bulgaria compatriots who work and live abroad, other EU and third-country nationals.

Fiscal policy guidelines:

- A more cautious expenditure policy should be pursued to ensure that the accumulated budgetary revenues are able to cover unforeseen expenditures, both in the context of the difficult international environment and given the need to stimulate investment activity.
- Priority needs to be given to fiscal structural reforms that will help to secure financing for public policy priorities and contribute to the long-term sustainability of public finances, including by improving the coverage, adequacy and sustainability of health and social protection systems.
- Shared responsibility between the private sector and government for jobs is a better option for spending policy than direct provision of benefits and social assistance, which in the short term maintain household purchasing power but lack the capacity to dynamize domestic demand and provide budgetary revenues.
- Sustainable revenue sources with low cyclical dependency should be ensured. The high-income growth over the last two years poses risks not only to the country's inflationary developments but also to fiscal stability and euro area accession. This cannot be done through indirect tax revenues and demand stimulation alone but requires reciprocal social measures to develop the business environment. Measures in this direction include the creation of conditions for wider lending to SMEs, the issuance of state guarantees for investment projects and state-guaranteed lending, the implementation of public-private partnerships, and the successful implementation of projects with EU funding.
- The pursuit of a tax policy aimed at differentiating tax rates with mainly sectoral effects creates disproportionate risks to fiscal stability that are not justified in terms of its multiplier effect. The reform of the tax system should be based on a systematic approach, considering the growing share of revenues from social and health insurance contributions, which in recent years have almost equalled VAT revenues. This poses fiscal risks in the medium term, given the country's declining and ageing population and the observed decline in employment.
- Ensuring a transparent use of public resources and accelerated absorption of the NRRP funds are key prerequisites for dynamizing investment in the country. The systematic underfinancing of infrastructure projects and the very limited impact of government investment on the real economy are not conducive to building productive capacity for catching-up development and convergence with EU and euro area Member States.



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## DOES DEMOCRACY MATTER FOR ECONOMIC GROWTH? EMPIRICAL EVIDENCE FROM INDONESIA<sup>5</sup>

*This study aims to empirically examine the mediating effect of investment on the relationship between democracy indices (i.e., civil freedom, political freedom, and democratic institutions) and economic growth across 33 provinces in Indonesia over the period from 2012 to 2020. Using a dynamic panel data regression of the Generalized Method of Moments (GMM) within the path analysis framework, the study found that investment, political freedom, and democratic institutions have promoted Indonesia's economic growth, while civil freedom has deteriorated the economic growth of the country. In addition, investment has partially mediated the effect of the democracy indices on Indonesian economic growth. These results suggest the importance of providing more political freedom and democratic institutions and limiting civil freedom to promote investment and consequently boost economic growth.*  
*Keywords: Democracy indices; investment; economic growth; regional development; Indonesia*  
*JEL: C33; O43; O47; R10; R50*

### 1. Introduction

The wealth and well-being of a citizen are primarily dictated by their democratic life, as democracy allows many things to be accomplished collectively, both economically and politically. A country's democracy and political stability are critical features that have a positive impact on its economic growth (Ahsan, Wang, 2015; Uddin et al., 2017; Zghidi,

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2017). Globally, all developed, underdeveloped, and developing countries, such as Indonesia, are continuing to make serious efforts to ensure political stability by providing a conducive democratic atmosphere nationwide as the basic requirement for boosting productive economic activities and attracting more investments that lead to economic growth. Building democratic conditions that are progressively leading to a better direction from time to time has been initiated by establishing a multi-party system in government administration, ensuring the independence of government institutions in carrying out public services, enhancing law enforcement, and providing large space to local government by Indonesia's central government through fiscal decentralization policies.

A good democracy provides the community with certain secured political rights. By safeguarding people's political rights in a certain region, a peaceful and safe environment for investment could also be established, which, in turn, has an impact on economic growth. Furthermore, good democratic treatment promotes good institutional aspects. Thus, a good institution ensures smooth administration and a lean business bureaucratic process and limits corrupt behaviour within the institution that, consequently, creates a conducive business environment and productive economic activities without any legal, security, or other administrative constraints.

The efforts of the Indonesian government to promote better political stability are indicated by an increasing trend in the democracy index during the last decade. The Central Statistics Agency of Indonesia (BPS – Statistics Indonesia, 2021) reported that the democracy index has been rising upwards, indicating better democratic progress since 2001 as the country started adopting a multi-party system and implementing broad fiscal decentralization. However, the overall trend of increasing the democracy index has been ineffective in boosting Indonesia's economic growth. For example, Indonesia's democracy index has increased from 62.72 in 2013 to 73.04 in 2014, but the national economic growth has declined from 6.16 per cent in 2013 to 5.21 per cent in 2014. Similarly, with the democracy index of 72.82 in 2015, the country's economic growth remained declined to 4.88 per cent during the year. Interestingly, when Indonesia's democracy index fell slightly to 70.09 in 2016, the national economic growth slightly grew to 5.03 per cent from the previous year. A similar phenomenon occurred during the 2017 to 2021 period, on average, Indonesia's economy has grown by 5.02 per cent, as the democracy index rose to 74.92.

The above figures indicate that the nature of the relationship between democracy and economic growth has been mixed, both positive and negative. The inconclusive nature of the democracy-economic growth nexus in Indonesia based on visual observations has been an interesting phenomenon to be further investigated. What is the directional relationship between democracy and economic growth in Indonesia? Does better democratic progress lead to the promotion or deterioration of Indonesia's economic growth? This issue is extremely important to be resolved as the different nature of the democracy-economic growth nexus provides different macroeconomic policy implications. This puzzle provides more motivation for our study to empirically discover the democracy-economic growth puzzle using a standardized econometric method over a longer study period from 2012 to 2022 and covering all 33 provinces in Indonesia, hoping to identify the exact relational nature between democracy and economic growth in the fifth largest populous emerging country of Indonesia.

Previous studies on the democracy-economic growth nexus documented that excellent democratic enforcement in an area or country has impacted investor admission and economic growth (Busse, 2003; Jensen, 2008; Moshi, Mwakatumbula, 2017). A strong democratic practice leads to increased national security and the enforcement of the rule of law. The assurance of legal certainty in a country encourages investors to invest since legal certainty is assured. Ray and Ray (2011) found a long-term causal relationship between economic growth and democracy in India. In addition, democracy, economic freedom, and political stability also have a positive impact on economic growth (Bashir, Xu, 2014; Ahsan, Wang, 2015; Vondrová, Fifeková, 2016; Zghidi, 2017; Uddin et al., 2017).

Some previous studies also found a significant relationship between democracy, investment, and economic growth (Zouhaier, Karim, 2012). The democratic regimes were able to reduce the risk of multinational investors, particularly through increased control over the executives (Jensen, 2008). Multinational corporations tend to invest in countries with low civil liberties but high political liberties. However, civil liberties are negatively related to foreign direct investment in 105 countries (Adam, Filippaios, 2007). Countries that promote the freedom of economic activity benefit more from the presence of multinational companies' investments (Azman-Saini et al., 2010) which, in turn, contributes positively to economic growth (Malikane, Chitambara, 2017).

Based on the findings of multiple prior studies, we found that most of the previous studies solely measured democracy through civil freedoms, while only a few previous studies included institutional indices and political rights and their effect on economic growth. Furthermore, past studies only explored the effect of democracy on investment and economic growth directly. None of the previous studies empirically investigated the mediating impact of investment on the relationship between democracy and economic development. Additionally, many previous studies have mainly focused their analyses using aggregate data on developed and developing countries and none of them has focused its analysis on 33 provinces in Indonesia. Thus, this study intends to fill the existing gaps in the literature and provide new empirical evidence by empirically exploring the effect of democracy indices (i.e. civil freedom, political freedom, and democratic institutions) on investment and economic growth across 33 provinces in Indonesia. Thus, our study views the concept of democracy from the perspectives of civil, political, and institutional freedom. Comparing to the previous studies, we use a more holistic measurement for democracy in Indonesia as its practices and evaluation were commonly referred as the official government report covering three indices, namely: civil freedom, political freedom, and democratic institutions (Junaenah, 2015). In addition, considering the potential effect of democracy on economic growth through investment, thus this study empirically assesses the role of investment as the mediator of the democracy-economic growth nexus. However, the non-existence of other indices to fully reflect the practices of democracy in Indonesia, such as press freedom, electoral process and pluralism, functioning of government, political participation and political culture is viewed as one of the limitations of our study.

The findings of the study are hoped to shed some light for policy-makers on designing political macroeconomic stability to further prosper economic development through investment enhancement and good democratic practices. Additionally, the findings of the study are expected to enrich the existing literature on the nexus between democracy,

investment, and economic growth from the perspective of the fifth largest emerging populous country Indonesia.

The rest of the study is structured in the following sections. Section 2 reviews the previous related literature on the investigated issue. Section 3 provides the research method as the basis for data analysis. Section 4 highlights the main findings and their discussion. Finally, Section 5 concludes the paper.

## **2. Literature Review**

The nexus between democracy, investment, and economic growth has been investigated by several previous researchers using various econometric models. For example, by using the Vector Error Correction Model (ECM), Ray and Ray (2011) found a long-term causal relationship between economic growth and democracy in India. Democracy is documented to positively affect economic growth. Nomor and Iorember (2017) recorded a positive significant relationship between political stability and economic growth both in the long-term and short-term in Nigeria using the Autoregressive Distributed Lag Model (ARDL) technique. Meanwhile, by adopting the Generalized Method of Moments (GMM) and quantile regression models, Uddin et al. (2017) found political stability as the main determinant of economic growth across 120 developing countries.

Furthermore, using a panel data analysis (fixed effect model), Bashir and Xu (2014) and Ahsan and Wang (2015) found that economic freedom and political stability have a positive significant impact on the economic growth of 117 and 132 countries, respectively. A similar finding is found by Fabro and Aixalá (2012) for the case of 72 countries where economic freedom, civil liberties, and political rights have positive effects on economic growth based on a simultaneous equation model. Using a non-parametric approach, Vondrová and Fifeková (2016) found that economic freedom creates better conditions for improving economic performance in European countries. Zghidi (2017) found a significant positive effect of democracy and political stability on the economic growth of African countries using a Generalized Method of Moments (GMM) model. For the case of 12 transitional economies of the Commonwealth independent states' members, using a data panel analysis, Sandalcilar (2013) found that the political democracy effect on growth in transitional economies is indirectly through its impact on economic democracy.

Furthermore, using a dynamic panel data analysis, Zouhaier and Karim (2012) documented that democracy, investment, and civil liberties have a positive effect on the economic growth of 11 countries in the MENA region. Adam and Filippaios (2007) using the panel data analysis method through the random effects model found that multinational companies tend to invest in 105 countries with low civil liberties but with high political freedom, and civil liberties are negatively related to foreign direct investment. Using a probit regression model, Jensen (2008) documented that democratic regimes reduce the risk of multinational investors, particularly through increasing control over executives in 153 countries worldwide. Countries that promote the freedom of economic activity will benefit more from the presence of multinational companies (Azman-Saini et al., 2010).

Finally, in the study on eight Southern African countries using the GMM estimation, Malikane and Chitambara (2017) find strong democratic institutions as a vital driver of economic growth. Foreign investment that has a direct positive effect on economic growth was highly dependent on the level of democracy in the host countries. Durmaz (2017) found that an improvement in democracy positively impacted foreign direct investment in Turkey using an ARDL technique. Yusuf et al. (2020) found a significant effect of foreign direct investment in promoting the economic growth of the West African sub-region in the long run. Democracy is found to be insignificant for investment and economic growth both in the short-term and long-term. Political instability has an adverse impact on investment and economic growth.

The above-reviewed studies show mixed empirical evidence on democracy, investment, and economic growth nexus. Additionally, many of the previous studies on the issue have used aggregate data at the national level and none of them has focused its analysis using provincial data level in the context of the Indonesian economy. Using 33 provincial data in the Indonesian context, this study hopes to provide a new perspective on the democracy, investment, and economic growth nexus by considering the mediating effect of investment on the relationship between democracy and economic growth using a panel data analysis within the path analysis framework.

### **3. Research Methods**

This study aims to examine the effect of democracy as measured by civil freedom, political freedom, and democratic institutions on investment and economic growth. It also attempts to explore the mediating effect of investment on the relationship between democracy and economic growth across 33 provinces in Indonesia from the period 2012 to 2020. To date, there are 34 provinces in Indonesia. As a newly established province on 25 October 2012, North Kalimantan was excluded from the study due to data unavailability during the study period. This study uses annual panel data, which combines data time series (9 years) and cross sections (33 provinces). The data used in this study is annual secondary data sourced from the official publications of the Central Statistics Agency of the Republic of Indonesia (BPS – Statistics Indonesia).

In this study, as an endogenous variable, economic growth is measured by the percentage change in Gross Regional Domestic Product (GRDP), namely the added value created from various economic activities across 33 provinces in Indonesia. Meanwhile, investment (mediating variable) is measured by a percentage change in total investment. As the exogenous variable, democracy is measured by three indices, namely: civil freedom, political freedom, and democratic institutions. Civil freedom is measured by the level the levels of freedom of assembly and association, freedom of opinion, freedom of belief, and freedom from discrimination. Political freedom is measured by the levels of the right to vote and be elected and the right to political participation in decision-making and government oversight in the form of an index. Finally, the democratic institutions are measured by the levels of free and fair elections, an independent judiciary, the role of the Regional House of Representatives, the role of political parties, and the role of the regional government

bureaucracy in the form of the index (BPS – Statistics Indonesia, 2021). Thus, our study uses more holistic indices to measure democracy (i.e., civil freedom, political freedom, and democratic institutions) in Indonesia as its practical evaluation was commonly referred as the official government report. In addition, the three democracy indices used in the study to measure democracy are found to be the most comprehensive democracy measure available in the country, following the study by Junaenah (2015).

In this study, to examine the direct effect of democracy indices on investment and economic growth and the indirect effect of democracy indices on economic growth through investment, the dynamic panel data regression model of the Generalized Method of Moments (GMM) is utilized. Thus, to measure the direct effect of the democracy index on economic growth, the study estimates the following proposed equation:

$$INV_{it} = \beta_0 + \delta INV_{it-1} + \beta_{11}CF_{it} + \beta_{12}PF_{it} + \beta_{13}DI_{it} + \varepsilon_1 \quad (1)$$

$$EG_{it} = \beta_0 + \delta EG_{it-1} + \beta_{21}CF_{it} + \beta_{22}PF_{it} + \beta_{23}DI_{it} + \varepsilon_2 \quad (2)$$

Meanwhile, to measure the indirect or mediating effect of investment on the relationship between the democracy index and economic growth, the following equation is estimated:

$$EG_{it} = \beta_0 + \delta EG_{it-1} + \beta_{31}CF_{it} + \beta_{32}PF_{it} + \beta_{33}DI_{it} + \beta_{34}INV_{it} + \varepsilon_3 \quad (3)$$

where  $INV$  is the investment,  $CF$  is the civil freedom,  $PF$  is the political freedom,  $DI$  is the democratic institutions,  $EG$  is the economic growth,  $i$  is the cross-section Province  $i$  ( $i = 1, \dots, N$ ),  $t$  is the time series of year  $t$  ( $t = 1, \dots, T$ ),  $\beta_0$  is a constant term,  $\delta$  is the estimated value of the lag of dependent coefficient,  $\beta_{ii}$  are the estimated regressors, and  $\varepsilon_i$  are the error term.

The estimation of the GMM model requires several stages of testing to ensure the model is free from misspecification problems to produce valid and consistent results. The GMM model was also tested to be free from serial correlation on the error terms and instrument variables used (Majid, 2008; Majid, 2009). For this purpose, two stages of testing the GMM model were carried out in this study. First, testing the model specifications using the Arellano and Bond (1991) approach to ensure consistency of the estimates obtained from the GMM process. Second, testing the validity with Sargan (1980)'s specification test approach to ensure the estimation parameters are unbiased due to the inappropriate use of instrument variables in the model.

To test the hypothesis of the direct effect of democracy indices on investment and economic growth, the common t-test is used. On the other hand, to test the hypothesis of the indirect or mediating effect of investment on the relationship between democracy indices and economic growth, the study uses the Sobel t-test within Baron and Kenny (1986)'s framework. To estimate the Sobel t-value, the Preacher and Leonardelli (2010)'s Sobel t-test calculator is used.

#### 4. Findings and Discussion

##### 4.1. A Brief Overview of Democracy and Economy in Indonesia

Table 1 illustrates descriptive statistics of democracy indices, investment, and economic growth across 33 provinces in Indonesia over the period from 2012 to 2020. As observed from the table, on average, the democracy indices of civil freedom, political freedom, and democratic institutions were 82.42, 62.09, and 72.52, respectively. These figures showed civil freedom in a very good category, while political freedom and democratic institutions in a good category.

**Table 1. Descriptive Statistics**

	EG	INV	CF	PF	DI
Mean	4.5813	0.6030	82.4195	62.0947	72.5226
Maximum	21.76	28.61	98.44	86.52	93.98
Minimum	-20.13	-3.62	47.21	28.95	47.25
Std. Dev.	4.0359	2.5713	10.5931	11.9019	10.4593
Observations	297	297	297	297	297

*Source: Secondary data, processed using the E-Views Software (2022).*

The provinces of North Kalimantan, South Kalimantan, and West Nusa Tenggara recorded the highest civil freedom index (98.44) in 2016, political freedom index (86.52) in 2019, and democratic institutions index (93.98) in 2017. Meanwhile, the lowest civil freedom index (47.21) in 2014, political freedom index (28.95) in 2013, and democratic institutions index (47.25) in 2015 are recorded by the provinces of West Sumatera, Southeast Sulawesi, and Maluku, respectively.

In term of economic performance, the study recorded that, on average, the economic growth and investment growth was 4.58% and 0.60%. The highest economic growth of 21.76% was recorded by the province of West Nusa Tenggara in 2015, while the lowest value of -20.13% was recorded by the province of Papua in 2020. The highest investment growth rate of 28.610% was experienced by the Lampung province in 2012, while the lowest investment growth rate of -0.99% was also recorded by Lampung province in 2015.

The above figures show that the democracy indices, economic growth, and investment have varied across 33 provinces in Indonesia. An unequal level of democracy indices, economic growth, and investment, as indicated by the standard deviation values, should be a concern of the central government of Indonesia to design political economy policy ensuring just political and economic progress nationwide. Equal political and economic progress across the provinces is extremely important to maintain and enhance national stability and unity. The unified national constitutional and legal framework supposedly predetermines the similarity in the degree of democratization across the provinces in the country.

##### 4.2. Generalized Method of Moments (GMM) Specifications

In this study, two models of GMM are estimated. The first model estimates the effect of democracy indices on investment, while the second model estimates the effects of democracy indices and investment on economic growth across 33 provinces in Indonesia over the period



from 2012 to 2020. However, before presenting the findings of the GMM estimations, the study initially conducted the consistency (autocorrelation) and instrument validity of the models using the Arellano-Bond (1991) and Sargan (1980) techniques, respectively. The findings of the tests are reported in Table 2.

**Table 2. Findings of Consistency and Instrument Validity Tests**

Arellano-Bond Test				Sargan Test
Model	Test Order	m-Statistic	Prob.	Prob.
Model 1 Dependent: Investment	AR(1)	-2.6436	0.0082	0.5556
	AR(2)	-1.3882	0.1651	
Model 2 Dependent: Economic growth	AR(1)	-3.3169	0.0009	0.2436
	AR(2)	1.8385	0.0660	

Source: Secondary data, processed using the E-Views Software (2022).

As observed in Table 2, the results of the Arellano-Bond AR1 for Model 1 and Model are found to be significant, implying the inconsistency of the estimated models due to the existence of autocorrelation in the first-order difference error. However, the results of Arellano-Bond AR2 are found to be insignificance at the 5% level for both Model 1 and Model 2. These findings show the consistency of the model due to the inexistence of autocorrelation in the second-order difference error. Thus, the findings show that the dynamic panel model to be estimated in the study has met the criteria for the best model. The last column of Table 3 shows the findings of Sargan (1980)'s specification tests for Model 1 and Model 2. The probability value of the Sargan test was greater than the 5% level, confirming the instrument validity of the estimated models. Thus, these findings show that the proposed estimated Model 1 and Model 2 in the study are consistent and valid.

#### 4.3. Direct Effects of Democracy on Investment and Economic Growth

Having ensured the consistency and validity of the proposed Model 1 and Model 2 based on the Arellano-Bond (1991) and Sargan (1980) tests, the findings from the GMM estimations on the direct effects of democracy indices, namely civil freedom, political freedom, and democratic institutions on investment and economic growth across 33 provinces in Indonesia is, in turns, reported in Table 3.

**Table 3. Direct Effect of Democracy Indices on Investment and Economic Growth**

Model	Variable	Coefficient	t-Statistic	Prob.
Model 1 (Dependent: Investment)	INV(-1)	0.0700***	15.2035	0.0000
	CF	-0.0875***	-11.2074	0.0000
	PF	0.0793***	12.6404	0.0000
	DI	0.0106*	1.8030	0.0727
J-Stat. = 25.3340; Prob. (J-Stat.) = 0.5557; Instrument rank = 31				
Model 2 (Dependent: Economic Growth)	EG(-1)	0.3938***	22.7827	0.0000
	INV	0.9344***	8.7877	0.0000
	CF	-0.3286***	-54.6049	0.0000
	PF	0.0802***	11.1110	0.0000
	DI	0.0475***	6.6804	0.0000
J-Stat. = 31.6938; Prob. (J-Stat.) = 0.2436; Instrument rank = 32				

Note: \* and \*\*\* show significance at the 10% and 1% levels, respectively.

Source: Secondary data, processed using the E-Views Software (2022).

As illustrated in Table 3, the study finds that civil freedom negatively influenced both investment and economic growth with the estimated coefficients of -0.0875 and -0.3286 at the 1% significance level. These findings show that a unit improvement in the civil freedom index has led to a decline in investment and economic growth by 0.0875 and 0.3286 units, respectively. Civil freedom has caused a greater impact on investment as compared to economic growth. During the study period, the average civil freedom index across 33 provinces in Indonesia was considered higher amounting to 82.42 (Table 1), showing that Indonesian citizens have been freely involved and participated in many forms of assembly and association. As a result, a series of public demonstrations occurred nationwide in response to unfair government policies. The labour demonstration during the labour-day celebration on May 1 every year involving millions of labour forces across streets in the Indonesian major cities to protest the government policy of paying low minimum wage has caused national instability. Million Muslim citizens went to the streets protesting government policies, such as Muslim discrimination, a sharp increase in the price of cooking oil, the ratification of laws that weaken the Corruption Eradication Commission, ratification of the omnibus law that harms many parties in Indonesia and benefits foreign investors has adversely impacted economic activity in the country.

To overcome the above-mentioned demonstrations, the government has tended to impose strong measures which resulted in the fall of several protesters and some even being imprisoned. These demonstrations have been viewed by foreign investors as unfavourable conditions for foreign investors to invest in Indonesia. Consequently, the higher civil freedom index has caused a decline in investment. In addition, these unfavourable conditions caused by unmanaged civil freedom have also caused Indonesia's economic growth to decline during the study period. This finding is supported by a positive relationship between investment and economic growth across 33 provinces in Indonesia (Table 3). A decline in investment has been detrimental to the national economic growth, and vice versa, the findings similar to Malikane and Chitambara (2017) found a positive effect of foreign investment on economic growth in Southern Africa.

In addition, the increasing number of corruption cases in Indonesia and the complexity of the government bureaucracy have reduced investors' interest to invest their monies in Indonesia. The results of the Corruption Perception Index (CPI) survey in 2021, for example, Indonesia's CPI rose one point to 38 points from the previous year. Indonesia's CPI is still far from the global average CPI score of 43. This shows that the high level of corruption in Indonesia has been partly due to the abuse of public freedoms has had a negative impact on investment and economic growth in 33 provinces in Indonesia. The low level of education and democratic and political literacy of the Indonesian citizens has led to abuse of civil liberties by the state officials and bureaucrats involving in corrupt acts. For example, during the 2009-2022 period, the Financial Transaction Analysis Reporting Center (PPATK) reported that a number of 964 employees working at the Ministry of Finance Office were suspected of having improper assets through money laundering activities with a total value of IDR 349 trillion (Tempo.co., 2023). To carry out investment and business activities in Indonesia, investors and businessmen often have to pay various types of administrative fees and illegal levies, causing high production costs (Mandagie and Damayanti, 2023). Thus, the low investments and economic growth in most of developing countries that have low economic liberalization level, including Indonesia are associated with corruption (Saha et al., 2009;

Bazzaz et al., 2021; Li, Kumbhakar, 2022), which leads to low national economic growth. Some policy-makers and researchers believe that developing countries with a low level of citizens' education should adopt authoritarian regimes for promoting investment and economic development (Knutsen, 2012).

In an atmosphere of high civil liberties, Peters (2005) and Shen and Williamson (2005) argued that democracy tends to be controlled by certain groups in government for special interests. For example, the new Law on Minerals and Coal (Minerba) which was promulgated on 10 June 2020, replacing Law Number 4 of 2009 has made oligarchy become a new threat for corruptors (Fernando et al., 2023). As a result, the policies produced by the government are not in favour of the interests of the wider community. The government policies benefit more big companies and banks in public affairs adversely influenced democracy (Tsakova, 2023). This will have an impact on reducing the amount of investment and slowing economic growth. Business sectors that provide great benefits to society and the country's economy are sacrificed to protect certain business sectors or to protect political interests by gaining votes during general elections.

Our finding is in line with the findings of previous studies. For example, Adam and Filippaios (2007) found that multinational corporations tend to invest in countries with low civil freedom but with high economic liberties. Thus, to attract more investment it is important to continuously promote the freedom of economic activity and trade openness to gain huge benefits from the presence of multinational companies (Azman-Saini et al., 2010; Zakaria, Ahmad, 2011). The negative effect of civil freedom on investment in Indonesia is partly due to the country's exports being dominated by natural resources (Asiedu, Lien, 2011).

Table 3 further reported that political freedom has promoted investment and economic growth in Indonesia with estimated coefficients of 0.0793 and 0.0802, respectively, at the 1% significance level. These empirical results show that an increase in the political freedom index by one unit has led to an increase in investment and economic growth by 0.0793 and 0.0802, respectively. The size of the effect of political freedom on investment and economic growth is found to be relatively similar. As viewed from Table 1, the political freedom index of Indonesia (62.0947) is considered in a moderate category. Since the Soeharto era (known as the new order) from 1966 to 1988 and the reform order from 1989 until 2021, political freedom in the country has significantly improved. The citizens have higher freedom in political activities, such as voting or being voted, including disabled people, a transparent voter list during elections, and a minimum quota of 30% for women sitting as members of the people's representatives at the provincial and national levels (Junaenah, 2015). An improvement in the political freedom of citizens across 33 provinces in Indonesia has promoted investment and national economic growth.

Our findings of the positive relationship between political freedom and investment and economic growth are supported by many previous studies. For example, Zouhaier and Karim (2012) found a positive effect of political freedom on economic growth across 11 countries in the Middle East and South Africa. Economic activities commonly develop rapidly in regions or countries that practice a more democratic political life to support economic growth (Sandalcilar, 2013). Thus, to encourage sustainable economic growth, it is necessary to uphold the political rights and ensure fair electoral democracy all levels of society (Fabro, Aixalá, 2012; Opoku, Acheampong, 2023).

Finally, as observed in Table 3, the study also found a positive effect of democratic institutions on investment and economic growth with the estimated coefficients of 0.0106 and 0.0475 at the 10% and 1% levels of significance, respectively. These results show that an increase in democratic institutions by one unit has led to an increase in investment and economic growth by 0.0106 and 0.0475, respectively. The effect of democratic institutions is found to be greater on economic growth as compared to investment. The presence of democratic institutions would support government macroeconomic policy to allocate sufficient budget for the lower-middle income groups' economic productive activities that promote national targeted economic growth. However, democracy only facilitates economic growth in countries that experience appropriate development due to their ability to create sustained economic growth-enhancing institutions (Sima, Huang, 2023).

After the fall of President Suharto on May 21, 1998, and the reform order started in Indonesia, democratic institutions underwent significant improvements in the country. These include the advancements in free and fair elections, the impartiality of General Elections Commissions both at the central and provincial levels in organizing and administering general elections, fairness in the counting of votes, the role of political parties, and the percentage of women in the stewardship of political parties (Junaenah, 2015). In addition, the role of regional government bureaucracy, and impartiality of civil servants in political activities of political parties in legislative general elections, and the role of an independent judiciary have also been continuously improved (Liddle, 2013). These improvements in the democratic institutions have attracted more investments and consequently contributed to higher economic growth.

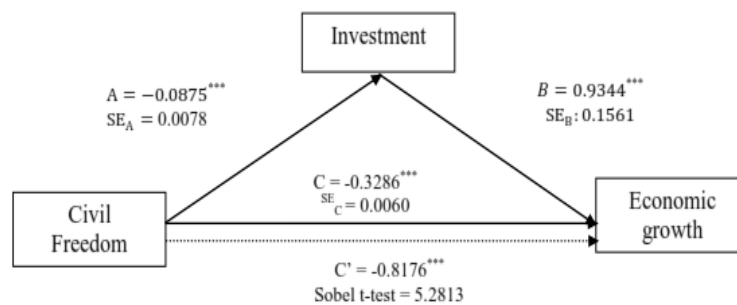
Furthermore, the existence of institutional improvements, especially service institutions related to investment greatly supports investment. A good institution's governance facilitates licensing arrangements for attracting more investment projects that, in turn, contribute to the promotion of economic growth. The positive impact of democratic institutions on investment and economic growth is supported by earlier studies (Busse, 2003; Salahodjaev, 2015; Huang, Ho, 2017; Moshi, Mwakatumbula, 2017). In his study, Busse (2003) found that the average investment by multinational companies is significantly higher in democratic countries with good institutions compared to the countries with poor governance of institutions. Countries with better democratic institutions have attracted more investments into their countries (Moshi, Mwakatumbula, 2017) and have boosted their economic growth (Salahodjaev, 2015). Finally, Huang and Ho (2021) also found a significant causal relationship between democratic government institutions and economic growth.

#### *4.4. Investment as a Mediator of the Democracy – Economic Growth Relationship*

Having discussed the direct effects of democracy indices (i.e. civil freedom, political freedom, and democratic institutions on investment and economic growth) in the earlier section, in this section, the study reports and discusses the mediating effects of investment on the democracy indices on economic growth. The Sobel t-test of Preacher and Leonardelli (2010) within Baron and Kenny (1986)'s framework is used to examine the significant mediating effect of investment on democracy-economic growth relationships. The findings of the mediating effects are illustrated in Figures 1, 2, and 3.

As observed from Figure 1, investment is found to have a negative significant mediator of the effect of civil freedom on economic growth at the 1% level. In this context, the investment acts as the partial mediator, implying both direct and indirect effects are active. Civil freedom has directly caused economic growth to decline and indirectly through investment. Unlimited civil freedom in the developing country of Indonesia has led to uncontrolled people's freedom and their involvement in anarchic actions that cause investors to be reluctant to invest in the country and, in turn, had caused a slowdown in economic growth.

**Figure 1. Investment as a Mediator of the Civil Freedom – Economic Growth Relationship**

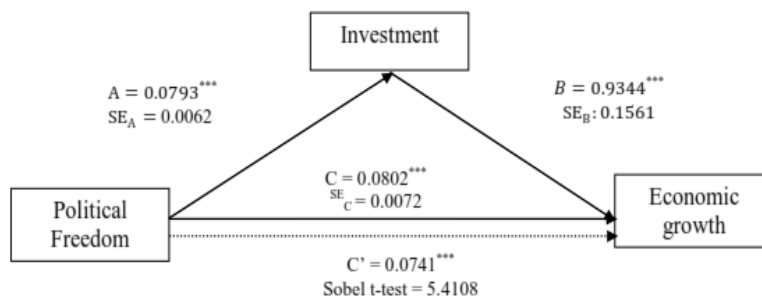


Source: Secondary data, processed using the E-Views Software (2022).

Our findings show that a decline in investment has been detrimental to national economic growth (Malikane, Chitambara, 2017; Dewi et al., 2018; Majid et al., 2019). The investment in the developing country of Indonesia that is associated with corruption (Bazzaz et al., 2021) has led to low national economic growth. In the atmosphere of high civil liberties, Indonesia's democracy is tended to be controlled by certain government groups for special interests (Li, Resnick, 2003) by designing macroeconomic policies in their favour. Economic sectors that significantly contribute to the promotion of economic growth are sacrificed to protect their business entities and their political interests. These, consequently, have negatively impacted the decline in investment and economic growth, similar findings to the previous studies by Azman-Saini et al. (2010), Asiedu and Lien (2011), and Mohsin et al. (2021).

Next, Figure 2 reports the mediating effect of investment on the relationships between political freedom and economic growth. As observed in Figure 2, the investment is found to have a positive significant mediating effect on political freedom and economic growth at the 1% level. The investment acts as the positive partial mediator of the political freedom and economic growth relationships. This is simply due to the positive significant direct effect of political freedom on economic growth and the positive significant indirect effect of political freedom on economic growth through investment. These findings show the importance of promoting political freedom to directly promote economic growth and indirect through enhancing investment.

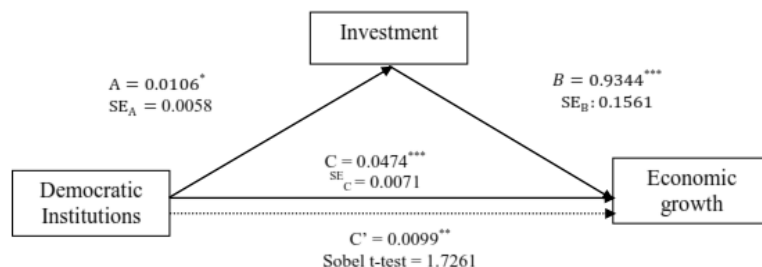
**Figure 2. Investment as a Mediator of the Political Freedom – Economic Growth Relationship**



Source: Secondary data, processed using the E-Views Software (2022).

Since the new order (1966-1988) and reform order (1989 until to date) era, the political freedom in Indonesia has continuously improved. Better political freedom across 33 provinces in Indonesia has enhanced investment and promoted national economic growth. Our findings are in harmony with previous studies. For instance, Zouhaier and Karim (2012) found a positive contribution of political freedom to the economic growth of 11 Middle Eastern and South African countries. Practising a more democratic political life and upholding political rights within all dimensions of society would promote sustainable economic growth (Fabro, Aixalá, 2012; Sandalcilar, 2013).

**Figure 3. Investment as a Mediator of the Democratic Institutions – Economic Growth Relationship**



Source: Secondary data, processed using the E-Views Software (2022).

Finally, Figure 3 reports the mediating effect of investment on the relationships between democratic institutions and economic growth. As illustrated in Figure 3, investment is found as a positive significant mediator of the relationships between political freedom and economic growth at the 5% level. This is confirmed by the existence of a positive significant direct effect of democratic institutions on economic growth and the positive significant indirect effect of democratic institutions on economic growth via investment. These findings show that any efforts to promote Indonesia's economic growth could be done directly by enhancing democratic institutions or indirectly through enhancing investment. The ongoing improvements in the practices of democratic institutions since 1998's new order in Indonesia

should be supported by strengthening existing regulations to ensure free and fair elections, an active role of political parties and women's representativeness in the stewardship of political parties, a good regional government bureaucracy, and the presence of an independent judiciary system.

Overall, our findings on the significant mediating effect of investment on the relationships between democracy indices (i.e., civil freedom, political freedom, and democratic institutions) and economic growth are supported by the previous studies of Bozkurt et al. (2018) and Nosier and El-Karamani (2018). Democracy has a significant effect on economic growth both directly and indirectly through investment as the mediator. Our findings suggest that to further promote economic growth, Indonesia's government needs to limit and control civil freedom. The government should also continuously improve political freedom, control the oligarchic political system, and enhance democratic institutions. A continuous improvement in democracy through good government governance practices is believed as one of the strategic ways to enhance investment and national economic growth.

## **5. Conclusion**

This study empirically examined the mediating effect of investment on the relationship between democracy indices (i.e. civil freedom, political freedom, and democratic institutions) and economic growth across 33 provinces in Indonesia over the period from 2012 to 2020. Using the GMM estimation within the path analysis framework, the study documented the positive significant effects of political freedom, democratic institutions, and that investment on Indonesia's economic growth. Meanwhile, civil freedom is recorded to deteriorate the economic growth of the country. Indirectly, the study found that investment has partially mediated the effect of the democracy indices on Indonesia's economic growth.

Our empirical findings suggest the importance of enhancing political freedom and democratic institutions and limiting civil freedom to attract more investment that consequently promotes national economic growth. To further promote economic growth, Indonesia's government needs to limit and control civil freedom, improve political freedom, control the oligarchic political system, and enhance democratic institutions. Practising good government governance principles in democracy is necessary for enhancing investment and national economic growth.

This study only focuses its analysis on the effects of democracy indices on economic growth through the investment channel across 33 provinces in Indonesia from 2012 to 2020 period. To provide more comprehensive findings on the role of democracy in the economy, future studies might explore the effects of democracy on economic growth through different macroeconomic channels. Future studies could also explore the effect of democracy on various economic performance indicators, such as poverty, income disparity, price stability, unemployment, etc. to enrich the existing empirical findings. In addition, to provide more comprehensive empirical evidences on the effect of democracy on the national economic welfare, future studies are hoped to use more holistic indicators to measure democracy and economic welfare. For instances, future might use an electoral process and pluralism, civil liberties, functioning of government, political participation and political culture as the

democracy indicators and use human and social development indices, instead of the real gross domestic product to measure economic welfare.

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### **BRICS COUNTRIES IN A PERIOD OF UNCERTAINTY AND TURBULENCE: OPPORTUNITIES FOR THE FORMATION OF A NEW CONFIGURATION OF THE GLOBAL ECONOMY<sup>3</sup>**

*The increasing uncertainty and turbulence of the external environment create new conditions for achieving global leadership. The study aims to conduct a comparative assessment of the economic, scientific, educational, and digital potential of the BRICS countries under conditions of uncertainty to identify opportunities to strengthen their leadership position in the global economy. The article presents the author's vision of the causes and factors of increasing uncertainty and its impact on modern states. The article proves the hypothesis that the BRICS countries are increasing their economic, scientific, educational, and digital potential in comparison with the developed countries of the G7. It concludes that the BRICS countries are superior in economic potential and lag in terms of scientific, educational, and digital potential. It is argued that the uncertainty and turbulence caused by the 2020-2021 pandemic helped the BRICS countries to increase their potential and align their positions with the G7 countries. The identification of the strengths and weaknesses of the BRICS national economies allowed the authors to identify their points of growth in the implementation of the outperformance strategy. It was determined that the most appropriate development strategy for the BRICS countries under conditions of uncertainty is an ambivalent adaptation strategy that allows them to increase their influence in the global economy.*

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*Keywords: BRICS; emerging economies; G7; socio-economic uncertainty; turbulence; crisis; adaptation and development strategy; economic potential; scientific and educational potential; digital potential; global leadership*  
*JEL: F01; F02; F62; F63*

## **1. Introduction**

Modern realities are such that every year an increasing number of uncertain factors have an impact on the socioeconomic life of society. In the last century, socioeconomic upheavals were primarily associated with world wars, the Great Depression, and the crisis of technology companies (Kose, Ohnsorge, 2019).

In the XXI century, the causes of numerous economic fluctuations and the growth of social tension were the financial crises that became more frequent over time (Yussuf et al., 2022). Some of them were global in nature, others were distinguished by their local manifestation. In particular, the collapse of the dot-com bubble dealt a crushing blow to the stock market of high-tech American companies and in 2001-2002 created the prerequisites for the development of the global crisis of the “new economy”. The collapse of the banking system in the United States in 2008 and the collapse of the securities market caused the development of a global recession that engulfed most developed and developing countries. The recession of 2008-2009, associated with a sharp increase in public debt, a decline in world trade, and unstable dynamics of commodity prices, eventually led to a payment imbalance in the global economy.

Pandemics of various diseases and viruses, natural disasters, extreme weather conditions, and geological catastrophes are other types of uncertainty factors that provoke the emergence of global crises and recessions through a decline in business activity but also bring significant damage to the population of the planet. One of the most devastating epidemiological threats of the last century was the Spanish flu pandemic (“Spanish flu”, 1918-1919), which claimed a significant number of lives and caused significant socioeconomic damage (Eichenbaum et al., 2020).

The COVID-19 pandemic has become a new source of socio-economic uncertainty and the subsequent global crisis. It was distinguished by a high degree of the economic defeat of the world economy, including through a global “lockdown”, which for the first time in modern history almost completely suspended world trade, led to the destruction of global supply chains and settlements and put the established model of the global world economy on the brink of existence (Karpunina et al., 2022).

The impact of uncertainty factors in the period 2020-2021 forced governments of various countries to experiment with methods of saving economies, especially taking into account the novelty of the experience of introducing a global long-term lockdown, the destruction of established business criteria, a sharp decline in consumption and an extreme burden on business and the public administration system. The main result of the confrontation with the uncertainty and chaos associated with the pandemic was the consolidation of resources in the

recession zones and the organization of real and effective economic assistance to the population and the most affected industries.

However, the current sources of socio-economic uncertainty are not exhausted. The XXI century has not been spared by geopolitical conflicts, which have become an important component in the system of uncertainty factors.

The geopolitical instability that broke out in February 2022 intensified the processes of redistribution of global leadership and created conditions for launching a whole range of socio-economic and geopolitical changes related to the processes of production organization, reformatting international interaction, the transformation of business processes and management models (Yadigarov, 2022).

Such manifestations of uncertainty and turbulence can contribute to the redistribution of the centres of economic leadership from developed countries to developing economies (Kuznetsov, 2022).

Uncertainty reinforces existing trends, such as a slowdown in factor productivity in the economies of developed countries (TED, 2019; Gilbert et al., 2016; Crafts, 2018), growth of economic activity in developing countries in the context of increasing stable domestic demand (United Nations, 2019). Thus, PwC has formed a forecast according to which in 2030, 66% of the middle class and 59% of their consumption will be concentrated in developing countries such as Brazil, Russia, India, China, and South Africa, and their economic growth will exceed the growth of the developed G7 countries.

What are the possibilities of forming a new global landscape in the face of uncertainty of environmental factors? Currently, an assessment of the existing potential of the developing BRICS countries and the formation of recommendations on the choice of priority areas of public policy that contribute to the formation of the alliance of developing countries by world leaders is required.

## **2. Literature Review**

The BRICS Integration Association (Brazil, Russia, India, China, and South Africa) turned 16 in 2022. The features of the development of the BRICS economies at different stages of its existence are presented in the works of Lo, Hiscock (2014), Luckhurst (2013), Ogrean, Herciu (2010), Takebe, Mlachila (2011), Rodionova (2014). Most of these authors are inclined to believe that the BRICS countries will become one of the political forces that will change the future of the world economy and trade policy.

A whole block of research is devoted to the consideration of issues of industrial and trade-economic intra-integration cooperation of the BRICS countries in the context of new global challenges. Georgina (2018) explores this problem in terms of energy interaction. Kovalchuk (2015) considers the possibility of creating a new global monetary and financial system within the BRICS. Kolesnikov et al. (2018) conducted a comparative analysis of the implementation of the industrial policy of the BRICS countries and the countries of the European Union.

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Assessment of the innovative potential of the BRICS countries and the possibilities of its improvement is presented in the works of Matrizaev (2019), Drobot et al. (2021), and Petrenko et al. (2020). Nevertheless, many of the authors also note that the problem of internal underfunding of innovations is clearly expressed in the BRICS countries (Bek, Bek, 2013).

The period of digitalization has become a new stage for the BRICS countries to unlock their internal potential. Scientists claim that thanks to the intensive introduction of digital technologies and a competition policy in the field of digital development, the BRICS countries can make a breakthrough and achieve global technological leadership (Ignatov, 2020; Spartak, 2018; Yakovleva et al., 2020; Koshelev, 2022).

However, the current stage of development is characterized by a high level of uncertainty and turbulence. This applies not only to regularly occurring crises and recessions of a financial and economic nature. We are also talking about the impact of the pandemic and geopolitical instability on the development of economic systems (Podorova-Anikina et al., 2022; Karpunina et al., 2022). Bordachev T. et al. (2020), and Lisovolik (2022) call the period of exposure to epidemiological threats a pandemic of rivalry, noting that the COVID-19 pandemic contributed to the weakening of global governance and the strengthening of global rivalry, the struggle for world leadership. Thanks to this, the issue of reducing the dependence of the leading developing economies (first of all, the BRICS alliance) on the US dollar, creating alternative financial and economic instruments and development institutions becomes relevant again.

How optimistic are the researchers' forecasts regarding the formation of the BRICS countries as a new pole of global economic growth? This study is devoted to the research of this issue.

### **3. Methodology**

*Hypothesis 1.* The BRICS countries are increasing their economic, scientific, educational, and digital potential compared to the developed G7 countries. Uncertainty and turbulence in the external environment contribute to the expansion of the BRICS countries' influence on the global economy.

*Hypothesis 2.* The BRICS countries transform the sectoral structure of their economies by the trends of the global conjuncture.

*Hypothesis 3.* The implementation of an ambivalent strategy of adaptation and growth by the BRICS countries will allow them to provide a leading edge in the formation of a new configuration of the global economy.

The study aims to conduct a comparative analysis and assessment of the economic, scientific, educational, and digital potential of the BRICS countries in the period of increasing uncertainty to identify opportunities for strengthening their leadership position in the global economy.

*Research objectives:*

- to reveal the specifics of the manifestation of uncertainty in the modern world, to highlight the stages of its manifestation;
- to propose a methodology for conducting comparative analysis and evaluation of the economic, scientific, educational, and digital potential of BRICS countries in conditions of uncertainty;
- to justify the choice of development strategy for the BRICS alliance countries in the formation of a new geopolitical order.

Research methods: the method of analysis and synthesis, the method of systematization, the method of grouping, the method of economic analysis, the method of statistical analysis, including the method of calculating integral indicators, the method of comparative analysis, graphical method, the method of expert survey, a systematic approach.

In the first stage of the study, the authors apply the method of analyzing scientific literature, as well as the method of analysis and synthesis to identify the specifics of the manifestation of uncertainty in the modern world and highlight the characteristic features of its manifestation.

The second stage of the study is associated with a multidimensional analysis of statistical data on the socio-economic development of the BRICS and G7 countries, as well as an assessment of their potential.

To assess the economic, scientific, educational, and digital potential of the studied countries, the method of calculating integral indicators based on:

- selection of the reference value of the indicator for each group and calculation of normalized indicators:

$$x_i = X_i / X_{max} \quad (1)$$

where:

$x_i$  is normalized indicators;

$X_i$  – the value of the initial indicator for each country;

$X_{max}$  – the reference (maximum) value of the initial indicator (Vasilieva, 2017).

- application of the expert survey method to determine the weight of each indicator;
- calculation of integral indicators by multiplying each normalized indicator by its “weight” and then summing by a group with division by the number of indicators (Alpeeva et al., 2020):

$$I_i = (\sum_1^n x_i) / n \quad (2)$$

where:

$I_{am}$  – the integral indicator of the country's potential;

$n$  – is the number of structural components of the potential;

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- groupings of countries with their subsequent ranking.

In the third stage of the study, methods of comparative analysis and a systematic approach are used to form conclusions based on the results of the work and determine effective tools for strengthening the potential of the BRICS countries in the global economy.

The information base is the statistical data of the OECD, the World Bank, Statista, IMD, national statistical agencies, and international organizations.

## **4. Results**

### *4.1. Uncertainty and turbulence of modern reality as prerequisites for the formation of a new configuration of the global economy.*

Let's highlight some of the reasons contributing to the increase in uncertainty and turbulence in the modern world.

Firstly, the growth of socio-economic tensions. If we look at the development of the world economy over the period from 1990 to the present, we can identify several key stages of economic growth. The points of extreme recessions are the crises of 2008 and 2020 and the periods of economic recovery from the “shock” effects of recessions on economic growth in developed countries. During the analyzed period, there were also more weak crises, for example, the crisis of 1997-1998 (the Asian crisis and the subsequent banking crisis) (Aleksashenko et al., 2012). Indeed, in the XXI century, global financial and economic crises have become regular: 1990-1998 – the period associated with the Asian banking crisis, 1997-2007 – the recovery period after the Asian crisis and the crisis of the high-tech economy in 2000, 2008-2009 – the periods of the global recession, 2010-2018 – the period of recovery after the global recession, 2019-2021 – the development of the global coronavirus pandemic and the beginning of the corresponding period of instability and economic crisis (Karpunina et al., 2022).

Secondly, the transformation of the traditional way of life of society under the influence of digitalization. Indeed, in the 21<sup>st</sup> century, the processes of digital development have become more intense and profound. The emergence of digital technologies of flexible production, the improvement of management systems using artificial intelligence, customer-oriented solutions, and optimized logistics, enhanced integration of cyber-physical systems into production processes and the use of online communication technologies have allowed solving numerous problems of socio-economic and social development at the present stage (Davies, Schwab, 2018).

Thirdly, the COVID-19 pandemic, as an unpredictable and multidimensional phenomenon, has had a significant impact on the growth of instability around the world. This was facilitated by the introduced sanitary knockdowns and restrictions, violation of interregional and international communications, and sanitary measures taken by governments (Fraymovich et al., 2021; Korolyuk et al., 2021). As a result, the suspension of business activity created prerequisites for the development of a pandemic crisis in the form of a decline in GDP, a

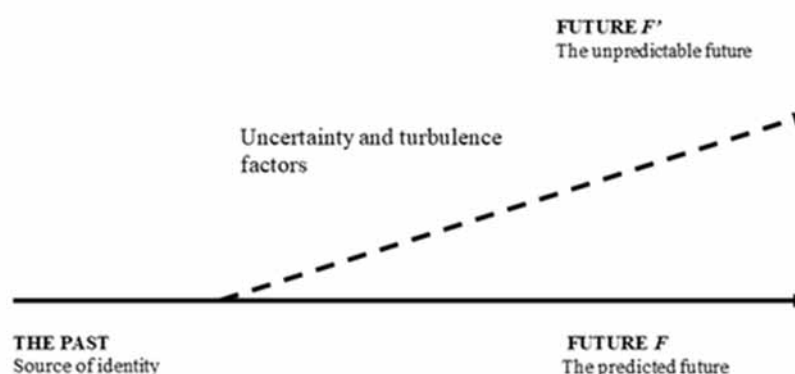


reduction in real disposable incomes of the population, and an increase in unemployment (RBC, 2020). The pandemic has undermined the psychological stability of the population and the culture of tolerance (Pokhilko, Shabashova, 2020; Inghart, 2021).

As a result, these causes of uncertainty and chaos caused the growth of global turbulence, the divergence of interests, and the launch of processes of redistribution of global leadership, and, as a result, the aggravation of geopolitical conflicts that have a direct impact on the stability of national economies. In particular, economic methods of conducting a trade war at the global level can cause irreparable damage to the economic security of the enemy. The latter will worsen in the case of a strong dependence of the state on imports of foreign goods. Therefore, the use by states of the mechanism of economic sanctions restrictions may deprive national economies of the inflow of foreign investments that ensure their sustainable development in strategically important areas (Idaten, 2022).

Thus, uncertainty and turbulence guide modern states along a new trajectory of development, where each state has a chance to make a breakthrough and take the desired position in the new configuration of the global economy (Figure 1).

**Figure 1. A model of the impact of uncertainty and turbulence on modern states**



*Source: compiled by the authors.*

We will conduct a critical analysis of the model of the impact of uncertainty and turbulence on modern states.

In the figure, you can see the predicted vector into Future  $F$ , the traditional vector of the life of the state and society with known and predictable factors of the development of the internal and external environment, as well as a certain set of threats. In the past, which is a source of identity, each state has experienced overcoming crisis phenomena by implementing state policy measures. Movement along this vector allows the state to successfully overcome minor fluctuations, returning to the point of sustainable development of the economic system (Karpunina et al., 2022).

Movement in the direction of vector  $F'$  acquires a different character. Socio-economic and geopolitical uncertainty exposes an individual, society, and the state as a whole to a state's

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lack of identity with the past. In the past, there has been no experience in overcoming such pronounced fluctuations (an indefinite pandemic, a geopolitical conflict that has grown for an unknown period, an invaluable digitalization, etc.). In critical conditions of the impact of threats, fears for life, health, and well-being arise, and confidence in the future, trust in the government, and faith in a possible positive outcome of the current situation are lost.

The decisions made become rash and spontaneous. An example is the models of consumer behaviour during the beginning of the pandemic (buying food, excessive demand for expensive goods, etc.). A similar situation developed in the labour market during the period of epidemiological threats: in conditions of uncertainty, rash decisions were made to massively reduce workers instead of implementing reasonable measures to adapt to the new reality (even with the implementation of state support for employment in particularly affected sectors of the economy). Such measures as the purchase of foreign currency and the excessive demand for sugar during the beginning of the special operation in Ukraine had a similar effect in Russia. Of course, they all come from a state of fear and uncertainty about the future (that is, the specifics of human perception of abrupt changes) and, as a rule, have long-term negative consequences. However, if you rebuild from fear and panic, then a completely new space opens up for the realization of the existing social potential, and new unfilled niches appear in various segments of the economy. For example, during the pandemic, the digital sector of the economy became such a direction.

With the beginning of the special operation in Ukraine and the introduction of new international sanctions restrictions, there was a surge in the development of charitable activities and NGOs, import substitution, logistics, the real estate market, tourism, new integration forms of interaction between individuals and the state (Muzykantov, 2022).

Thus, it can be concluded that global uncertainty and turbulence create prerequisites for changing the geopolitical landscape and opportunities for the redistribution of economic forces in the world.

Experts note a pronounced trend of shifting the centres of economic leadership from the economies of developed countries towards the developing world. Confirmation of this trend can be found in the slowdown in factor productivity of the economies of developed countries (TED, 2019; Gilbert et al., 2016; Crafts, 2018) and the strengthening of economic activity in developing economies, primarily in the countries of the BRICS alliance (United Nations, 2019).

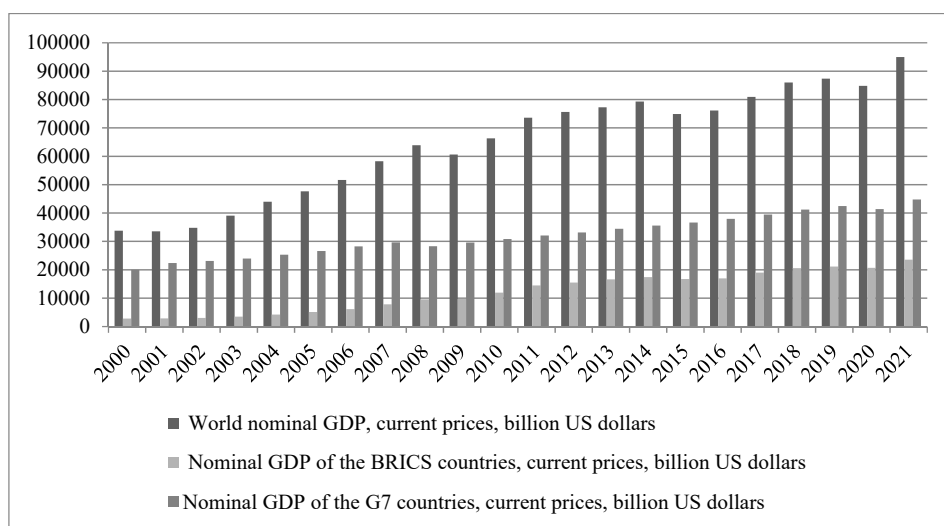
Studies aimed at predicting the trend of leadership redistribution between developed and developing countries prove that the economic growth of developing countries will soon exceed the growth of the developed G7 countries, and their total GDP by 2030 may be twice as high as that of the G7 countries. Approximately the same dynamics can be seen in basic social indicators: experts predict that by 2030 66% of the middle class and 59% of their consumption will be concentrated in the developing countries of the BRICS alliance.

Is such a drastic change in the configuration of the global economy possible? What resources are needed for the advanced development of the BRICS countries? What factors of uncertainty and turbulence will contribute to the formation of a new world reality?

4.2. Analysis of the main indicators of the economic, scientific, educational, and digital potential of the BRICS countries.

Consider the position of the BRICS alliance on the world stage. The GDP of the group of countries currently included in the BRICS alliance in 2000 was 8.15% of global GDP (Prognostica, 2022). After 2006, when the BRICS international alliance was institutionalized, its share in the global economy began to grow. By 2010 it reached 17.99%, in 2019 it was 24.17%. The pandemic year 2020 provoked an increase in the share of the BRICS countries in world GDP (up to 24.39%), and in 2021 the dynamics of increasing the presence of the alliance countries in world GDP also remained positive at (at 24.78%) (Figure 2).

**Figure 2. Dynamics of changes in the world nominal GDP and nominal GDP of the BRICS countries, 2000-2021**



Source: compiled by the authors according to OECD (2022).

The change in the world nominal GDP for 2001-2021 amounted to 181.35%, while the growth of the nominal GDP of the BRICS countries over the same period amounted to 754.75%. For comparison, the same indicator for the G7 countries was 124%. In other words, the nominal GDP of the BRICS countries in the period 2000-2021 grew 4 times more than the world nominal GDP and 6 times more than the nominal GDP of the G7 countries.

In the period 2000-2021, the balance of power between the BRICS and G7 countries changed: in 2000 it was 1:8, and in 2015 it was 1:2, by 2021 the positions of the BRICS countries were even more strengthened against the background of the G7 countries.

Let's analyze the contribution of each of the BRICS countries to global GDP (Table 1).

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**Table 1. Share of GDP of BRICS and G7 countries in world GDP, 2000-2021 (%)**

Country	2000	2005	2010	2015	2019	2020	2021
Brazil	1.94	1.87	3.33	2.41	2.15	1.7	1.74
Russia	0.79	1.65	2.36	1.82	1.93	1.75	1.74
India	1.4	1.73	2.54	2.83	3.29	3.14	3.1
China	3.58	4.8	9.15	14.79	16.37	17.42	17.76
South Africa	0.44	0.58	0.61	0.45	0.43	0.38	0.44
BRICS	8.15	10.63	17.99	22.3	24.17	24.39	24.78
G7	65.43	59.8	49.85	46.48	45.52	45.67	44.72

Source: compiled by the authors according to OECD (2022).

The first place in the world in terms of the share of global GDP is occupied by the United States, in 2020 their contribution was 21.61%. The second position in the world is occupied by China with 17.42% of the global GDP. Japan's economy is in third position – 5.21% of global GDP, Germany is in fourth place (3.98% of GDP) and the United Kingdom is in fifth place, followed by India, France, Italy, and Canada. Thus, the top ten leaders include all G7 countries and two BRICS countries (China and India).

The leader in nominal GDP growth among the BRICS countries in the period 2000-2021 is China, where the value of this indicator was 1294.32%, followed by India with an increase of 521.89%, Russia (518.2%), South Africa (181.86%), Brazil (151.5%). At the same time, the most rapid growth of China's nominal GDP occurred in 2001-2010 (353.79%), whereas in 2011-2020. it was 96.11%. In the period 2001-2010, the nominal GDP of Russia, Brazil, and India also grew rapidly: 397.72%, 294.26%, and 243.78%, respectively. For comparison, the G7 countries are characterized by the following nominal GDP growth rates in 2000-2021: 170.70% – Canada, 123.77% – USA, 117.48% – Germany, 115.84% – France, 87.05% – Great Britain, 85.18% – Italy, 2.71% – Japan.

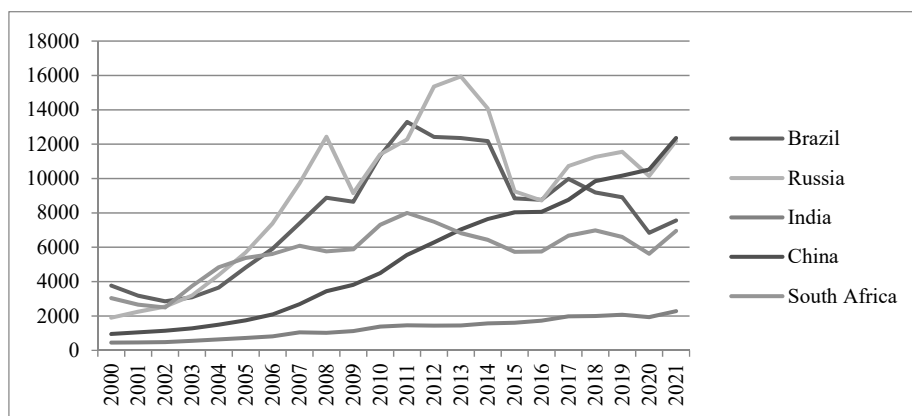
In general, the dynamics of nominal GDP growth in the BRICS countries outstrip the dynamics of global nominal GDP growth, as well as the dynamics of nominal GDP growth in the G7 countries. This allows us to substantiate our assumption about the intensification of the dynamics of the development of the BRICS alliance, including in the conditions of uncertainty of the external environment.

Nevertheless, when considering the dynamics of GDP per capita, the ratio of the BRICS countries becomes different (Figure 3).

According to this indicator, Russia was the leader of the BRICS alliance throughout the study period, but the pandemic period created conditions for strengthening China's leadership positions, for example, in 2020-2021. China has overtaken Russia in terms of the “GDP per capita” indicator, which in China reached the value of 12358,8 US dollars per capita.

A comparison of the BRICS countries in terms of GDP with the leading countries of the world, members of the G7, allows us to conclude that developing countries lag significantly behind in terms of “GDP per capita”. In 2019, the GDP per capita in the USA was 65280 US dollars, in Japan – 40246 US dollars, in the UK – 42300 US dollars, and in Germany – 46258 US dollars, which is 3.5 to 6 times higher than in most successful BRICS countries.

**Figure 3. GDP per capita in the BRICS countries, in current prices, 2000-2019 (USD)**



Source: compiled by the authors according to Statista (2022a).

The assessment of the economic potential of the BRICS countries is presented in Table 2.

**Table 2. Assessment of the economic potential of the BRICS countries and G7 countries, 2001-2021**

Country	The share of the country's GDP in world GDP, 2021	The share of foreign direct investment in the global volume of FDI, %, 2020	Exports of goods and services, % of total world exports of goods and services, 2020	Integral indicator of economic potential
<i>BRICS countries</i>				<b>0.09</b>
Brazil	1.74	3.31	2.9	0.036
Russia	1.74	0.83	4.6	0.028
India	3.1	5.64	6.1	0.065
China	17.76	22.18	33.3	0.315
South Africa	0.44	0.28	1.1	0.007
<i>G7 countries</i>				<b>0.08</b>
USA	24.16	13.05	15.3	0.232
Japan	5.38	5.39	5.7	0.075
United Kingdom	3.27	2.72	5.3	0.048
Germany	4.46	12.51	12.0	0.126
France	3.10	1.29	5.4	0.04
Canada	2.12	2.33	3.4	0.034
Italy	2.23	0	4.0	0.025

Source: compiled by the authors according to IMF (2021).

These tables allow us to assess the dynamics of foreign direct investment in the BRICS countries in comparison with the G7 countries in the period 2000-2020. Thus, China is the leader in terms of foreign direct investment in 2020, its share in the global volume of foreign direct investment is 22.18%. China's indicators surpass those of the United States, in the pandemic 2020 their share was 13.05%, as well as Germany (12.51% of the global volume).

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The positive dynamics of the increase in foreign direct investment by the developing BRICS countries in the period 2000-2020 is noticeable: 2.3 times growth in Brazil, 2.7 times growth in Russia, 12 times increase in India, 4,8 times growth in China and 2.1 times increase in South Africa. Such a trend should have a positive effect on the development of the BRICS countries and the strengthening of their positions on the world stage since there is a positive relationship between foreign direct investment, size, and the growth of the market of countries receiving investments. Thus, researchers have statistically confirmed the relationship between US foreign direct investment in the countries of the European Union and their gross national product (Artemkina, 2020).

The value of the indicator “share in world industrial output” also shows the economic potential of the country. However, the share of industry in the economies of developed countries and their GDP is declining, which is explained by the return of industrial production to developing countries, the emergence of new industries (due to a breakthrough in biotechnology and information technology), as well as the growth of domestic demand in developing countries. Certain changes have occurred under the influence of pandemic uncertainty factors (for example, an increase in the share of manufacturing industries, primarily knowledge-intensive) (Akhapkin, 2021). In general, the share of industry in global GDP has decreased to 30% by 2020. Currently, developing countries with a large number of minerals, primarily oil, and gas, have the largest share of production in the economy. For example, the total share of the developing economies of the BRICS countries in global industrial output in 2018 was 35.5%, while the same indicator for the G7 countries was only 23%.

The balanced development of the economy is evidenced by the indicator of the unemployment rate. Comparing the value of the unemployment rate in the BRICS countries, we note its significant differentiation in 2020: from 4.2% in China to 29.2% in South Africa. The average unemployment rate in the G7 countries is 6.6%. During the pandemic, the unemployment rate in the world as a whole increased, in 2021 there were 1.8% (or 21 million people) more unemployed in the world than there were in 2019, and the total drop in labour income in 2020 amounted to about USD 3.7 trillion (RG, 2022). However, the solution to the employment problem is determined by State policy. Most of the BRICS countries (China, Russia, Brazil) have chosen the option of an anti-covid restrictive policy to prevent crisis phenomena. On the contrary, most of the G7 countries (Japan, Great Britain, France) have emphasized the predominance of stimulating measures over restrictive ones. Other countries (Canada, the USA, and South Africa) have implemented anti-crisis policy measures to support the economy (Kuzyk, Zudin, 2020). Time will tell which policy option will have the greatest anti-crisis effect.

The value of the integral indicator of the economic potential of the BRICS countries exceeded the same indicator of the G7 countries: 0.09 against 0.08.

The leader in terms of economic potential is China (the value of the integral indicator is 0.315), followed by the USA (0.232), and Germany (0.126). In its group of BRICS countries, China is the engine of growth, since the value of the integral indicator for the rest of the countries ranges from 0.007 (South Africa) to 0.065 (India). Note that in some developed G7

countries, for example, Italy, Canada, and France, the value of this indicator is at the level of developing countries.

Thus, it should be concluded that there are positive changes in the economies of the BRICS countries that contribute to strengthening their positions in the global space, primarily in terms of increasing foreign direct investment, despite fluctuations in business activity under the influence of uncertainty and turbulence.

We will conduct a comparative analysis of the GDP structure of the BRICS countries and the developed G7 countries (Table 3).

**Table 3. Comparative analysis of the GDP structure of the BRICS countries and the G7 countries, 2021**

Country	Services	Industry	Agriculture
<i>BRICS countries</i>			
Brazil	59.38	18.86	6.89
Russia	53.0	33.21	3.8
India	47.69	25.87	16.77
China	53.31	39.43	7.26
South Africa	54.2	21.5	2.7
<i>G7 countries</i>			
USA	80.14	18.44	1.06
Germany	63.02	26.61	0.8
Japan	69.47	29.02	1.04
United Kingdom	71.63	17.7	0.6
France	70.16	16.78	1.63

Source: compiled by the authors according to Statista (2022b).

A comparison of the indicators allows us to conclude that the services sector has a significant share in the GDP structure of the developed G7 countries – from 63.03% of GDP in Germany to 80.14% of GDP in the United States. On the contrary, the service sector in the developing BRICS countries is less developed (from 47.69% of GDP in India to 59.38% of GDP in Brazil). It is worth noting that in the BRICS countries, in comparison with developed countries, the share of the agro-industrial sector is large. Thus, its value in the BRICS countries ranges from 3.8% of GDP in Russia to 16.77% of GDP in India, while the minimum size of the agricultural sector is typical for the UK (0.6% of GDP) and the maximum for France (1.63% of GDP).

The general trend of changes in the structure of GDP in the BRICS countries can be described as follows. In all countries in the period 2011-2020, there was an increase in the service sector: by 3.14% in Brazil, by 4.95% in India, by 20.32% in China, and by 1.69% in South Africa. The exception was Russia, where the share of services in GDP decreased by 1.49%. In general, such dynamics suggest that the BRICS countries are transforming the sectoral structure of their economies to the general trends of global development. Thus, in developed countries, the growth of the service sector is an established trend, since they are characterized by a fairly intensive pace of economic development and a significant level of development of productive forces, where most of the scientific, technical, and economic potential of the whole world is concentrated (Lomakin, 2012). For example, from 2011-2020, the growth of

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the service sector in the US was 3.35%, 2.44% in the UK, and 3.5% in Canada. Indeed, China stands out from all the countries of the BRICS alliance, it has transformed the structure of its economy as much as possible in the period 2011-2020: the agricultural sector shrank by 20,65%, the industrial sector shrank by 15.27%, and the service sector grew by 20.32%.

Thus, our assumption that all the countries of the BRICS alliance will transform the sectoral structure of the economy by the trends in the development of the global market situation cannot be fully confirmed. Since there are multidirectional vectors of development of countries within the BRICS integration alliance.

The scientific and educational potential can be assessed using the indicators in Table 4.

**Table 4. The scientific and educational potential of the BRICS countries and G7 countries, 2019-2020**

Country	Higher education among the population aged 25-64,%, 2019	Number of researchers per 1 million inhabitants, 2020	Gross domestic R&D expenditures total, % of GDP, 2020	Integral indicator of scientific and educational potential	The overall integral indicator for the groups of countries
<i>BRICS countries</i>					<b>0.128</b>
Brazil	20	887	2.26	0.15	0.15
Russia	57	3075	1.1	0.19	0.19
India	12	156	0.85	0.07	0.07
China	18	1089	2.40	0.16	0.16
South Africa	16	432	0.68	0.07	0.07
<i>G7 countries</i>					<b>0.236</b>
USA	50	4205	3.45	0.3	0.3
Japan	53	5328	3.28	0.3	0.3
United Kingdom	49	4227	1.71	0.22	0.22
Germany	31	4320	3.13	0.26	0.26
France	40	4715	2.35	0.24	0.24
Canada	60	4325	1.61	0.23	0.23
Italy	20	2307	1.51	0.14	0.14

*Source: compiled by the authors according to OECD (2019a), Unesco Institute for Statistics (2020).*

On average in the G7 countries in 2020, 43% of adults aged 25-64 years received higher education. Over the past decades, higher education has significantly expanded in the G7 countries due to increased access to it, as well as due to intensive digitalization (OECD, 2019a; Maksaev et al., 2020). The proportion of people aged 25-34 with higher education is 50% or more in Canada, Japan, and the Russian Federation. In Canada and the Russian Federation, this high proportion of adults with higher education has a correspondingly smaller proportion (less than 7%) of adults with lower secondary education. India and South Africa are the countries with the lowest proportion of young people with higher education (16% or lower). In India, the most common level of achievement among people aged 25-34 years is to have incomplete secondary education, while in South Africa, the most common level of education is higher secondary or post-secondary, which is not a higher education. In France, Italy, and the Russian Federation, persons with a master's degree or an equivalent degree make up the largest proportion of adults with higher education. On average in the G7



countries, about 1% of young people have a doctorate or equivalent qualification, although, in the United States, this proportion is about 2%.

To assess the personnel component of the scientific and educational potential, we will single out the teaching staff of universities that provide training of highly qualified personnel and carry out scientific activities, as well as personnel engaged in research and development in scientific organizations. Universities ensure the expansion of the scale of training of highly qualified scientific personnel. The number of teaching staff in Russia in the period 2013-2018 decreased by 26.1% due to a reduction in the number of students and a reduction in the number of educational organizations. In Brazil, by contrast, the state's education policy was aimed at improving the literacy rate of the population, and the number of university teachers increased from 349110 in 2014 to 362307 in 2017 (i.e. by 3.4%) (OECD, 2020b). Meanwhile, in the UK, USA, and Germany in 2014-2018, there was an increase in the number of university teachers from 6.8% (in Germany) to 12.1% (in the UK). The number of university teachers in the USA exceeds the number of university teachers in Russia by 2.2 times.

The number of personnel engaged in research and development per 1 million population in the BRICS countries is significantly lower than in developed European countries, the USA and Japan. According to official data, only Russia is approaching the required level in terms of the number of researchers. The current situation with personnel engaged in research activities in the BRICS countries raises serious concerns.

In general, the BRICS countries are engaged in the development of their universities and their material and technical base. This is especially true of China (Peking University, Tsinghua University, and Fudan University are leaders in all rankings) and Russia (Degtyareva, Chernysheva, 2018). In 2016, a plan was developed in India to form ten public and ten private universities of international level, however, the problem of its implementation was significant underfunding, so the only world-class higher education institutions are Indian Institutes of Technology (RIA, 2017).

The scientific and educational potential depends on the amount of funding for both university science and R&D in research organizations. Expenses for conducting research at universities of all types in 2019 amounted (at constant prices in 2015): to 3896 – in Russia, 21 125 – in Germany, 11 384 – in the UK, and 53 958 – in the USA. That is, these costs are 7.5 times higher on average in developed countries than, for example, in Russia (OECD, 2020a).

R&D financing further determines the state of scientific and educational potential, as well as its implementation. In this aspect, the countries of the BRICS group demonstrate different dynamics. For example, according to the available OECD (2020d) data, it is possible to compare the dynamics of R&D financing in Russia, South Africa, and some developed countries. In all the countries under consideration, the dynamics of R&D financing in the period 2010-2018 were positive (except Russia, where there was a decrease of 3.3% in 2016). The volume of financing in Germany exceeds the same indicator in Russia by 3 times, and in South Africa – by 30 times. In 2019, Brazil and China invested 2.3-2.4% of GDP in R&D development at the level of developed European countries, thereby strengthening their positions in the global R&D market (OECD, 2020d). Note that the analyzed countries have different R&D financing structures: in the USA, Japan, and most European countries, business structures are involved in R&D financing, which covers on average from 60 to 70%

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of all expenses, in developing countries most of the R&D costs are financed by the state or non-profit organizations (Unesco Institute for Statistic, 2020).

Table 4 also shows the results of calculating the integral indicators of the scientific and educational potential of the BRICS and G7 countries. In the individual ranking, the USA and Japan occupy the highest position (an integral indicator of 0.3 each), followed by Germany (0,26). Among the BRICS countries, Russia (0.19) and China (0.16) have the best indicators.

In general, when comparing the two groups of countries, the overall integral indicator of the scientific and educational potential of the BRICS (0.128) is 1.9 times lower than the similar indicator of the G7 (0.241).

The results of scientific activity, R&D expenditures, and the number of venture transactions in 2020 continued to grow, increasing the peak indicators of the pre-crisis period. In 2020, the number of scientific publications in the world increased by 7.6%. In 2020, the economies with the highest R&D expenditures continued to increase government budget allocations, and the leading global R&D spending companies increased total R&D spending by 10%. In 2020, there was an increase in venture transactions of 5.8%, which exceeded the average annual growth rate over the past 10 years (primarily due to high growth rates in Africa and Latin America) (WIPO, 2020, 2021).

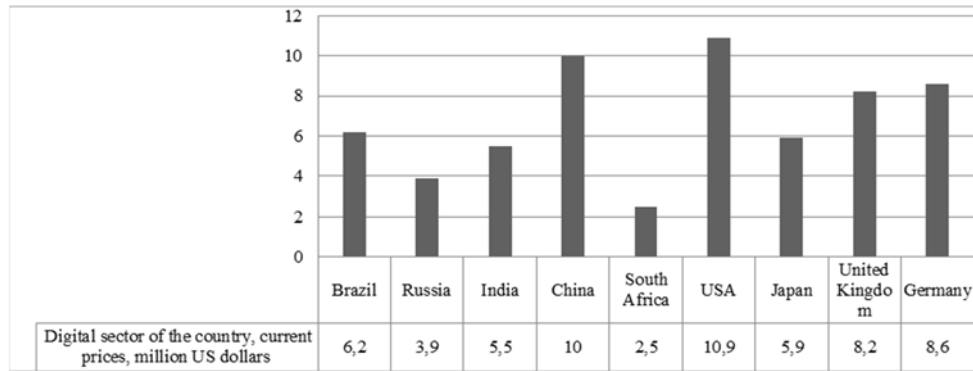
Thus, we can conclude that the BRICS countries are lagging in the development of scientific and educational potential (primarily in terms of the education of the population and the training of scientific personnel), but the systematically increased funding of R&D, the involvement of specialists from abroad for research and the active expansion of venture activities are changing the landscape of global innovation: China and India consistently improve their performance, remaining the countries with the highest growth rates according to the Global Innovation Rating in time dynamics.

It is advisable to analyze the digital potential of the BRICS countries. The volume of the digital economy sector in 2021 in the BRICS countries was estimated as follows: in China – 1434.2 million US dollars (10% of GDP), in India – 158.13 million US dollars (5.5% of GDP), in Brazil – 114 million US dollars (6.2% of GDP), in Russia – 66.26 million dollars USA (3.9% of GDP), in South Africa – 8.78 million US dollars (2,5% of GDP) (Figure 4).

The figure data shows that most BRICS economies lag behind the economies of the G7 countries in terms of digital development, except China, which has the second largest digital segment in the world after the United States (10% of GDP).

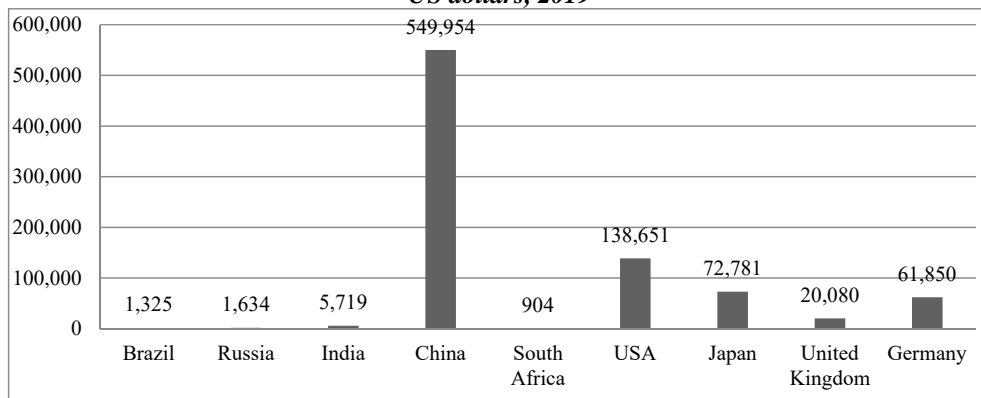
The positions of the BRICS countries vary greatly in the level of exports of ICT goods. Thus, China is ahead of the developed G7 countries in terms of this indicator: the volume of exports of goods from China amounted to 549 954 million dollars in 2019, from the United States – 138 651 million dollars. For the rest of the BRICS alliance countries (Brazil, Russia, India, and South Africa), the value of this indicator is radically behind those in the G7 countries (Figure 5).

**Figure 4. The share of the digital sector in the GDP of the BRICS and G7 countries, 2020**



Source: compiled by the authors according to the OECD (2019b), IMF (2021).

**Figure 5. The volume of exports of ICT goods in the BRICS and G7 countries, million US dollars, 2019**



Source: compiled by the authors according to OECD (2020c).

The reason for the digital lag of the BRICS countries lies in the existence of the problem of access to digital infrastructure, in the digital literacy of the population. Data on the state of digital infrastructure as part of the digital potential of countries (estimated using the method of integral indicators) are presented in Table 5.

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**Table 5. Indicators of the digital potential of the BRICS and G7 countries, 2018-2020**

Country	Connection to fixed telephone networks	Bandwidth of the international Internet access channel (Kbit/s)	Households with a personal computer	Households with Internet access	Broadband Internet connections	Active users of mobile communication networks	The share of the digital sector in the country's GDP	The volume of exports of ICT goods in, million US dollars	Integral indicator of digital potential
<i>BRICS countries</i>									
Brazil	19.50	29.00	46.30	60.80	13.70	90.20	6.2	1325	0.046
Russia	21.70	68.80	74.40	76.30	21.40	80.80	3.9	1634	0.049
India	1.70	25.90	16.50	25.40	1.3	25.80	5.5	5719	0.02
China	13.70	27.90	55.00	59.60	28.0	83.60	10	549954	0.083
South Africa	6.40	17.40	21.90	60.70	3.0	70.00	2.5	904	0.026
<i>G7 countries</i>									
USA	37.0	125.4	88.8	87.0	33.9	132.9	10.9	138651	0.085
Japan	50.2	25.0	76.8	96.2	31.7	133.2	5.9	72781	0.072
United Kingdom	50.10	421.6	91.70	94.0	39.30	39.30	8.2	20080	0.079
Germany	54.1	54.1	92.9	87.9	40.5	79.8	8.6	61850	0.072
France	59.5	54.5	77.5	71.5	43.8	87.5	3.8	18429	0.064
Canada	40.1	73.6	88.2	91.2	38.0	72.5	3.9	7407	0.061
Italy	34.9	35.7	64.3	71.7	27.9	87.9	3.7	12070	0.051
World	13.0	76.6	47.1	54.7	13.6	61.9			

Source: compiled by the authors according to ITU (2018).

Indeed, the BRICS countries are characterized by a lower indicator of the development of digital infrastructure: they have lower Internet access speeds (among the BRICS countries, the highest is in Russia (68.8), but far from the average European (250)), the number of active users and households with Internet access. Nevertheless, they exceed the OECD average in terms of Internet connection costs (from 10,1 US dollars PPP in Russia to 29.9 US dollars PPP in Brazil) (Spartak, 2018; Shuyskiy, 2019; Ignatov, 2020). Thus, the number of households in India, South Africa, and Brazil with a personal computer is 2-4 times inferior to the same indicator of the leading countries; from 10 to 20% is the average lag of the BRICS countries in the number of broadband connections (ITU, 2018). At the same time, the digital infrastructure created in Russia is characterized not only by a comparable level of development in comparison with world leaders but also remains one of the most affordable in terms of financial costs (OECD, 2019b). The BRICS countries partially compensate for the insufficiency of the resource of the basic terrestrial digital infrastructure with a sufficiently high rate of use of mobile digital devices and services (ITU, 2018).

However, during the COVID-19 pandemic, activity in the digital sector of the BRICS economies increased amid a decline in the real sector (Analytical Center under the Government of the Russian Federation, 2020). For example, significant growth was recorded in the sectors of digital mobile telephony and the Internet, online education, e-commerce (by 10-30%), online entertainment, and telemedicine (RAEK, 2020). This suggests that during the pandemic there was an increase in the digital potential of the BRICS countries (Valdaiclub, 2020). In particular, the project of forming an independent ecosystem of the digital economy within the framework of the BRICS integration association will help

establish communication with the market and encourage private and institutional investors to participate in infrastructure projects, and allow national development institutions to find the most attractive objects for investment, received a new impetus to development in the conditions of the pandemic (TASS, 2020).

The results of the assessment of the digital potential of the BRICS countries in comparison with the G7 countries based on the method of calculating the integral indicator (Table 5) showed that the group of G7 countries (the value of the integral indicator is 0.069) in 2020 has 1.5 times higher digital potential than the BRICS countries (the value of the integral indicator is 0.045). The leaders in terms of the integral indicator of digital potential are the USA (0.085), China (0.083), Great Britain (0.079), Japan (0.072), and Germany (0.072).

Thus, the author's assumption about the existing lag of the BRICS countries in the level of digital potential development, the asymmetric level of development and accessibility of infrastructure components of the digital economy, as well as about their expansion during the period of uncertainty and turbulence caused by the pandemic, can be considered justified. In addition, building up and realizing the digital potential of the BRICS countries can become a tool for overcoming the uncertainty caused by geopolitical conflicts, since building communications and interaction, conducting trade operations, developing an ecosystem of online education, and so on, are in a specific area of the system of international regulation and law.

The final presentation of the comparative assessment of the capabilities of the BRICS and G7 countries in the context of the formation of a new configuration of the global economy and the corresponding rating of countries will be presented in Table 6.

**Table 6. Rating of BRICS and G7 countries depending on the level of development potential**

Country	Integral indicator of economic potential	Integral indicator of scientific and educational potential	Integral indicator of digital potential	Final assessment	Place among the BRICS and G7 groups
<i>BRICS countries</i>					
Brazil	0.036	0.15	0.046	0.077	9
Russia	0.028	0.19	0.049	0.089	8
India	0.065	0.07	0.02	0.052	11
China	0.315	0.16	0.083	0.186	2
South Africa	0.007	0.05	0.026	0.028	12
<b>Total</b>	<b>0.09</b>	<b>0.128</b>	<b>0.045</b>		
<i>G7 countries</i>					
USA	0.232	0.3	0.085	0.206	1
Japan	0.075	0.3	0.072	0.149	4
United Kingdom	0.048	0.22	0.079	0.116	5
Germany	0.126	0.26	0.072	0.153	3
Canada	0.034	0.23	0.061	0.108	7
France	0.04	0.24	0.064	0.115	6
Italy	0.025	0.14	0.051	0.072	10
<b>Total</b>	<b>0.08</b>	<b>0.241</b>	<b>0.069</b>		

Source: author's calculations.

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The assessment of the development potential of the BRICS countries and the G7 allows us to conclude:

- 1) The BRICS alliance exceeds the G7 countries in its economic potential by 0.01 p.p. (primarily due to the strong position of China).
- 2) The scientific and educational potential of the G7 countries is 1.9 times higher than that of the BRICS countries (due to the low educational indicators of the population and the small number of officially registered scientific personnel engaged in research).
- 3) Digital potential is 1.5 times higher in G7 countries (due to more developed digital infrastructure in developed countries).
- 4) The first place among the analyzed groups is occupied by the United States (integral index 0.206); China is in the second position (integral index 0.186); the third place is occupied by Germany (integral index 0.153).

The conclusions obtained allow us to form a matrix of government management efforts to strengthen the positions of the BRICS countries in the global economy (Table 7).

**Table 7. Matrix of government management efforts to strengthen the positions of the BRICS countries in the global economy**

Country	Changing public consciousness	Increase in foreign direct investment	Export expansion	Increasing the level of education of the population	Increased spending on R&D and development of the research sphere	Implementation of digital development programs
Brazil	+	+	+	+	+	+
Russia	+	+	+		+	+
India	+		+	+	+	+
China	+			+	+	+
South Africa	+	+	+	+	+	+

*Source: compiled by the authors.*

Determining the prospects of the BRICS in the new configuration of the global economy requires understanding that initially the alliance of developing countries was formed not just as an economic or trade bloc, but as an institutional association with its development bank to invest in sustainable infrastructure and renewable energy sources around the world.

Over the years of the alliance's existence, despite the very heterogeneous dynamics of the countries' development, many initiatives have not only strengthened the position of each member of the alliance on the world stage but also provided the BRICS integration association with much greater international influence (Statista, 2022a).

In conditions of socio-economic and geopolitical uncertainty and turbulence, countries can resort to the implementation of various strategies to strengthen their positions and increase stability:

- reduction/economy strategy (reduction of government spending, personnel optimization) (Gukasyan et al., 2022);
- an investment strategy focused on the development of new types of activities and new sectors of the economy, depending on changes in market conditions (Barton et al., 2002);
- ambivalent adaptation and development strategy. This strategy focuses on continuous monitoring of market signals (changes in the political, epidemiological, and economic situation) and ensuring maximum adaptability of the economic system to these changes.

Thus, the most appropriate strategy for the BRICS countries would be an ambivalent strategy of adaptation and development, assuming that any uncertainty can become a point of growth. This requires continuous monitoring of changes in the market and subsequent adaptation of the implemented public policy measures to the changing conditions.

According to the authors, the following points of growth should be identified for the BRICS group of countries:

- 1) Changing public consciousness as the basis for the implementation of further structural transformations of economic systems. The BRICS countries should develop a mechanism for motivating the population to change by the principles of social responsibility. The basis of this mechanism should be the transformation of the basic beliefs of individuals about themselves, their value as an adaptation resource, and a reference point for overcoming fear (Gukasyan et al., 2022). It is necessary to take into account the peculiarities of people's psychological perception of changes and to focus on social policy mechanisms that ensure the growth of income and increase the well-being of citizens.
- 2) Increased foreign direct investment. It is important for any economic system, but for Russia (especially in the context of sanctions restrictions), Brazil, and South Africa this tool can become a trigger for the launch of economic modernization processes. The implementation of additional measures to stimulate foreign investment as part of national projects is required: tools and methods of property insurance against political risks, special agreements, and special tax and customs regimes (Zhukov, Rasulova, 2020).
- 3) Expansion of exports. This measure is a key measure of strengthening the position of the state on the world stage. It encourages national companies to become more productive and competitive when entering the foreign market. China has a strong position on this indicator. Other BRICS countries require the implementation of measures aimed at increasing the interest of producers who are not present in foreign markets in the development of export activities; the formation of strategies and plans for exports; bringing the products produced in line with the quality of export demand; the development of tools to promote products in foreign markets (marketing promotion abroad, adapting products to the preferences of the importer country consumers, collecting the available information on foreign markets). (Bank of Russia, 2021). Governments can take control over the reduction of administrative and bureaucratic barriers for producers entering foreign markets.
- 4) Increasing the level of education of the population. This measure is recommended for all BRICS countries, except for Russia. The BRICS countries need to increase enrollment in

higher education, provide access to educational resources for all segments of the population, and use the potential of online education and digital educational platforms. An effective measure would be the exchange of positive experiences between the BRICS countries and the launch of cross-education and dual-degree programs within the alliance. Russia has a high-quality system for training highly qualified personnel, and its capabilities can be used to improve the level of education and qualifications of specialists from other BRICS countries, including in a distance format. In the context of the digitalization of society, it is also important to improve the digital literacy of the population.

- 5) Stimulation of R&D development in a period of uncertainty. This task can be solved by increasing government spending on education and the development of the scientific sphere, improving the personnel training system, and creating motivational mechanisms to attract private investment in scientific development (Frey, Osborne, 2013).
- 6) Implementation of digital development strategies. To ensure synergy, the BRICS countries should take the following actions in the field of digitalization: unlocking the potential of digital technologies and opportunities for the BRICS population; improving the accessibility and quality of goods and services produced by the BRICS countries using digital technologies; equalizing access to digital infrastructure for the BRICS population; increasing digital inclusion of people living in rural areas; providing Internet access to people with disabilities; developing The updated strategy will contribute to the development of joint measures to overcome the negative effects of the COVID-19 pandemic, and will also help to respond more effectively to new economic challenges in an uncertain and turbulent external environment.

## **5. Conclusion**

The article reveals the features of uncertainty and turbulence of the modern stage of socio-economic development as the basis for the formation of a new configuration of the global economy. The authors have identified the causes contributing to the increase in uncertainty and turbulence in the modern world: the growth of socio-economic tensions; digitalization and the corresponding transformation of the traditional way of life in society; the COVID-19 pandemic. The above reasons have caused an increase in global turbulence and triggered the processes of redistribution of global leadership. The authors have developed a model of the impact of uncertainty and turbulence on modern states.

The study assessed the economic, scientific, educational, and digital potential of the BRICS countries and compared it with the potential of the G7 countries.

It was determined that the value of the available economic potential of the BRICS alliance is almost identical to that of the G7 countries. An important contribution is made by China, which is the world leader in terms of GDP, foreign direct investment, and export development.



The authors substantiated that the scientific and educational potential of the G7 countries is higher than that of the BRICS countries. This is currently facilitated by the relatively low education levels of the population and the officially registered scientific personnel implementing research in most BRICS countries.

It has been proven that the BRICS countries' digital potential is lower than that of the G7 countries. Developed countries tend to have better digital infrastructure, while representatives of developing countries are more digitally active.

The authors conclude that the factors of uncertainty and turbulence open up new opportunities for countries to realize their potential. The study proves that the 2020-2021 pandemic has contributed to the BRICS countries' capacity-building and alignment with developed countries. This could usher in a new phase in the reconfiguration of the global economy.

The authors proposed tools and methods to strengthen the BRICS countries' position in the global economy by applying ambivalent development strategies and adapting to the changing environment.

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## MAIN PILLARS BUILDING UP THE RISK FRAME OF INDUSTRY 4.0 IMPLEMENTATION IN THE ENTERPRISES IN BULGARIA<sup>2</sup>

*Development of the technologies is a part of the modern world and modern business. The realization of extended changes, that have been imposed by Industry 4.0, is a very serious challenge for enterprises and in most cases have a high-risk ratio. The goal of this article is to define the main risk components forming the risk frame of Industry 4.0 implementation in enterprises in Bulgaria. In this relation, research has been made, giving the opportunity for a definition of the already mentioned components of the risk frame.*

*The research has been made on the basis of a questionnaire survey, covering 91 enterprises in Bulgaria. On this basis, eight main components are defined, which mainly determine the risk framework for the implementation of Industry 4.0 in enterprises in Bulgaria. A number of weaknesses and omissions have been outlined, which confront the realization of Industry 4.0 in Bulgarian enterprises. The risk variation in these components has also been studied, covering six risk areas identified as key risks in the researched enterprises. All this determines the current level of a significant part of enterprises in Bulgaria in the field of implementation of Industry 4.0 and also provides guidelines for taking measures to limit the impact of risk.*

*Keywords: Industry 4.0; Risk; Risk frame; Enterprises in Bulgaria*

*JEL: M15; O14; O33; O38*

### 1. Introduction

In the last years, Industry 4.0 has turned into one of the main subjects. It is related to digitalization and new business models, with positives and challenges for the enterprises.

Digitization goes back quite a long way, since the second half of the 20<sup>th</sup> century. The digital changes have started with technological innovations, the introduction of hardware and software that has led to the intensification of production, changes in the quantity and efficiency of manufactured goods, changes in production technologies, including the

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production of new digital products that start changing the nature of the work (Bulkina, et. al., 2022).

According to Borissova (2021), the definition of digitalisation contains certain technical parameters describing the specificity of the carried actions in this process of transformation. This is a process of conversion, i.e. transformation of an analogue medium, as text, sound, video, signal, telephone impulse in a digital form through digital devices by information scanning method.

According to Chudaeva (2019), Digitalization leads to the emergence of such an opportunity as management of the organization in "real time" (Real Time Enterprise, RTE), which allows to receive information without delay, in the mode close to "real time". The combination of fast accumulation of knowledge, the dominant culture focused on changes and flexible forms of organization reduces the time (and, therefore, reduces the costs of the enterprise) and improves the quality of decision-making process at all levels of business management.

Heeding to digitalization, we can't miss a term like digital competitiveness of enterprises. According to Markova (2022), ICT-based innovations optimize business processes, increase efficiency and improve business decision-making. ICT-based innovation is a necessity in the present and a good investment in the future for the business and the environment, for consumers and for society as a whole. Nowadays, the business discusses and plans its digital competitiveness as an actual business tool.

Dutton (2014), relates Industry 4.0 to the so-called "smart factory".

Hozdic (2015), defines Industry 4.0 as the horizontal integration of data flow between partners, suppliers and customers as well as vertical integration within the organizational frames – from the growth to the final product. The result is a fully integrated system of processes – an informational system in a real-time frame.

According to Cordeiro, Ordonez and Ferro (2019) to implement the Industry 4.0 structure, it will be necessary a business model to be structured, which is in line with the operation of the cyber-physical systems, which will connect and share data in the whole chain in real time.

Deliotte (2014) introduces the huge capacity that the industry and traditional manufacturing have to change: Virtual networking of smart production systems; Horizontal integration via a new generation of global value chain networks; Through-engineering across the entire value chain; Acceleration through exponential technologies.

According to Senvar, Erkut Akkartal (2018) Industry 4.0 has a positive impact on meeting individual customer requirements, manufacturing suppleness, optimization, effectiveness, productivity and efficiency, value creation opportunities through new services and so on.

According to Sinay, Kotianová, Glatz (2018) Industry 4.0 can be defined as a philosophy that defines the methods and methods of managing technologies that are already used in some areas of industrial production where machines, machinery and products communicate with each other and organize themselves individually in the production process.

Global Industry 4.0 Survey (2016) Industry 4.0 is driven by: Digitisation and integration of vertical and horizontal value chains; Digitisation of product and service supply; Digital business models and customer access.

Ibarraa, Ganzaraina, Igartuaa (2017) identify Industry 4.0 as a transformation. This transformation represents an incremental innovation that optimizes the actual business without involving big changes. The new technologies such as Big Data, Cloud Computing, Collaborative Robots, Additive Manufacturing, Artificial Vision or Augmented Reality are introduced just to optimize the value creation architecture (key resources and activities) due to increasing efficiency and improving performance (reducing costs, time and failures, employee training, etc.). This could be the first step for traditional manufacturing companies to embrace Industry 4.0 without addressing high risks).

The upper definitions, concepts and opinions show the necessary changes in the enterprises, including their structures, processes and business models.

The pre-process business planning of the enterprises in the digital transformation part of the processes and data transfer are in the base of Industry 4.0. It is a change, directed to the creation of the so-called “smart factories” through building up overall cyber-physic systems and it is going to set deep wide-range changes in the processes of the industrial enterprises.

These changes will be relevant to a change in the way of interaction between processes, people and systems, committing real manufacture to the digital world of informational technologies. This change is a topic of the day for many enterprises in the world (Nikolov, 2019; Tsochev et al., 2019, etc).

Elkaseer, Salama, Ali and Scholz (2018) have presented practical approaches to implant Industry 4.0 in the additive manufacturing process to increase the flexibility, competitiveness and profitability of the manufacturing systems – Native design approach and Plug and Play approach.

Nowadays the changes in the business environment have a huge influence on the business. Their complexity, dynamics and intricacy turn into an obstacle for the enterprises very often. All of those changes lead to the necessity of quick and adequate reaction of the enterprises.

The conceptual base of Industry 4.0 throughout the possibilities of digitalization is namely to reach much better possibilities for reaction, adaptation, economic growth, competitiveness and better positioning of the enterprises in the dynamic business environment.

The organizations that adopt Industry 4.0 can expect to significantly improve their present competitive position, increasing value creation and minimizing risks. The adoption of more efficient and faster production systems and of innovative technologies will allow shorter operations, delivery times and faster time to market of new products and services (Fonseca, 2018).

## **2. Digital Transformation (Industry 4.0)**

According to Industry 4.0 Research (2019-2023), the Transformation in Industry 4.0 is going to change the long-term dynamics in the trade and the global economic balance of the forces. The prognosis of Industry 4.0 market Research is that the Market will go through a significant transformation during 2019-2023 – changes in the market, expected to reach USD 1 Trillion till the beginning of 2030; growth of the global competition, possibilities with no precedence for optimization of the manufacturing processes; high economical expense of government work and private sector and in the same time growth of the industrial base and many others.

Trstenjak and Cosic (2017) make reference to the importance and the necessity of the realization of Industry 4.0. Very soon big international companies that use concepts of continuous improvement and have high standards for research and development will accept the concept of Industry 4.0 and make themselves even more competitive on the market. SMEs with a lower state of development will be left even more behind and couldn't keep up with the changes and demands of the market. That is why it is very important for them to develop their own strategy for Industry 4.0 implementation on time.

According to Fitsilis and Tsoutsas and Gerogiannis (2018), Industry 4.0 is not only technology and transformation of the production line. It includes as well the digital transformation of the whole business. This means that we have to reconsider a) the digitization and integration of vertical and horizontal value chains and b) the business model in general by optimizing customer interaction and access.

According to Ghanbari et al. (2017) When discussing business opportunities in the IoT, companies need to collaborate and be aware of novel network-centric business models. In this process, the key concern is how each company can be positioned within the business network in a way that it guarantees its profitability as part of a larger group; not only a single company. The challenge is that companies need to accept these new market rules where they individually will perceive less control over the final customers and the entire value proposition.

Bulgaria and Bulgarian businesses are part of this global world and for sure the new realities will exert influence on the business and the business development. That's why the attention needs to be focused in this direction – acceptance and application of these modern technological realities as Industry 4.0.

In this relation, the accepted National Strategic Document “Digital Transformation of Bulgaria for the period 2020-2030” lays down the principles of digital change in the main spheres of economic life (Ministry of Transport and Communications, 2020).

Despite that, the change coming for the enterprises in Bulgaria about implementing Industry 4.0, causes many questions and ambiguities. Some of them are: Are the enterprises in Bulgaria ready for such changes? Who and how will make these changes possible? What's the capacity for such a change? What are the risks connected with the implementation of Industry 4.0? How the enterprises will cope with them?

The enterprises in Bulgaria put efforts to be up to date with the modern tendencies including digital technologies. Despite that, Bulgarian enterprises have been defined as modest



innovators and taking one of the last places in Europe (European and Regional Innovation Scoreboards, 2019). The difficulties they meet have different character and nature. Here we can mention difficulties when participating in activities related to technological transfers, innovations and so on. The lack of experience and traditions additionally impedes their development of innovative potential, financial possibilities and so on (Nikolov, 2019). All that is one of the main premises for low results and shows the difficulties that the enterprises in Bulgaria have and will continue having in the future.

Siemens Bulgaria and German-Bulgaria Industrial Trading Association conducted research in 2018 showing some of the weaknesses and one of them is the lack of overall digital strategy of the enterprises. This article shows and confirms it. It shows that the enterprises in Bulgaria still have no real vision and no expectancies regarding the changes they follow. It also outlines the readiness for implementing Industry 4.0 in the enterprises in Bulgaria. A big part of enterprises are not ready for such changes, in spite of the fact they realize the role of the new technologies, the new models of functioning and digitalization. This is one of the main risk key factors related to Industry 4.0 implementation.

All these statements have been confirmed by the report of the European Commission regarding the penetration of digital technologies in Economics and society DESI, 2020 (The Digital Economy and Society Index). The DESI 2020 reports are based on 2019 data and they show that Bulgaria takes the last 29th place. Bulgaria, Greece, Romania and Italy have the lowest scores on the index (DESI, 2020).

New research of Siemens and the Bulgarian-German industrial trade chamber in 2021 (2021) shows the conditions, the obstacles and the perspectives in digitalization in Bulgaria. According to this research, more than 1/3rd from the questioned people, admit that they don't have an overall digital strategy. Our business has no high expectations for profit growth and reducing the ecological print in result of the digitalization. The business in Bulgaria doesn't expect any serious stress and loss of working positions because of digitalization. In the meantime – the companies have a clear vision of the type of employees they will need in this sphere for the next years. The qualification of the employees and the size of the investments are the main obstacle for the Bulgarian business regarding the future implementation of digital technologies and processes. This opinion has been shared among half of the people who took part in the questionnaire.

According to Veleva (2020), the enterprises have four barrier groups:

- Related to policy – One of the most important barriers facing industrial organizations is the need for long-term and sustainable national and international policies that have to ensure the development of smart innovation and sustainable change;
- Related to new technologies – in this group, the main barrier is that enterprises must be uncompromisingly quickly ready to apply and use new technologies, creating innovation;
- Related to R&D – Research and development (R&D) needs adequate financial support, both from the EU and from a national perspective.
- Related to qualification – the shortage of highly qualified personnel also influences the issue of introducing and embarking on the Fourth Technological Revolution.

All of the above information necessitates the attention and efforts to be directed to risk management connected to Industry 4.0 implementation.

The risk management is a key factor for every sphere and area in the dynamics of the modern business environment. In the conditions of realization of radical changes related to the way of interaction between processes, people and systems, the risk management attains even bigger significance and effect.

For essence, according to Snieška et al. (2020; Ghanbari et al., (2017), the potential risks of Industry 4.0, are one of the main reasons that impede or doubt the Industry 4.0 implementation. From an economic point of view – the loss of competitive advantage by reduction of the business models leads to a decrease in profits and even translocation of manufacturing. This is as a result of Industry 4.0 implementation.

Prinsloo et al. (2019), Radanliev et al. (2019) put an accent on the risks for cyber-security. This security aspect is often overlooked, particularly by promising new start-ups and parties that are not too familiar with the risks involved in not having proper cyber-security measures in place.

Birke et al. (2019) research exact risks, including economical, ecological, social, technical risks, IT-related risks and law risks.

Pusztai et al. (2023) present a possible method of implementation of a risk-adjusted production schedule in a data-rich environment. The framework is based on production datasets of multiple workshops, which is followed by statistical analysis, and its results are used in stochastic network models

Tupa et al. (2017) give a presentation of a design of framework to implement risk management for the Industry 4.0 concept, that includes a few aspects – Risk identification, Design of framework, Integration of performance and risk management.

Szlávika (2021) is concerned with the so-called “strongest sustainability indicators“ of Industry 4.0, applying a sustainability assessment model, concluding that a comprehensive preliminary sustainability analysis is essential to minimize the negative impacts of Industry 4.0.

Soitovski et al. (2021) discovered 28 risks on the basis of a literature survey, forming four groups – “Economic Risks“, “Social Risks“, “Environmental Risks“, and “Technological Risks“.

Sanchez (2019), puts an accent on the unemployment risks, generated by the implementation of new technologies and the vulnerability of the data due to the manipulation and the interconnection of the devices.

Not a small part of those studies is focused on a specific type of risk related to Industry 4.0, such as cyber risk and its impact, cyber security, sustainability risks, project risk, etc. There is no doubt that these risks are extremely important, but only affecting a specific type of risk leads to a certain limitation related to the realization of Industry 4.0. Another important fact is that each country has different progress in the field of implementation of Industry 4.0 and the risks have different impacts and importance.

In this relation, research has been made in Bulgarian enterprises and its goal is to define and outline the main risk components forming the main pillars in the risk frame for implementation of Industry 4.0 in the enterprises in Bulgaria (Figure 1).

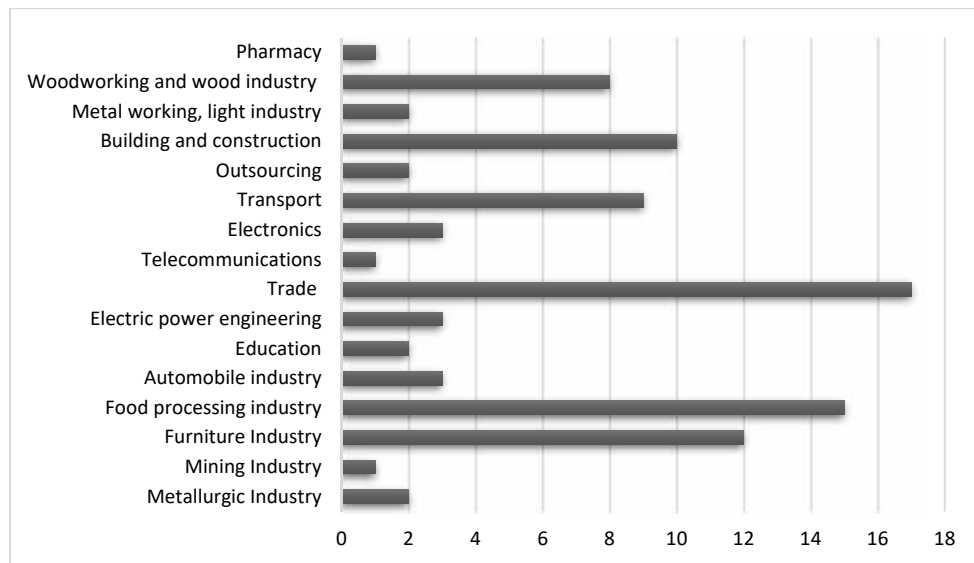
### 3. Profile of the examined enterprises

The research has been made on the basis of a questionnaire survey in July 2022 and includes 91 enterprises with different activities, fields and industries (Figure 1).

The surveyed enterprises are Joint-stock Companies, Limited Liability Companies and Limited Liability Private Companies. Company managers, as well as leading managers in the field of production and information technology, who have built or are currently building digital business processes in their enterprises and are familiar with the importance of Industry 4.0, have been selected as respondents.

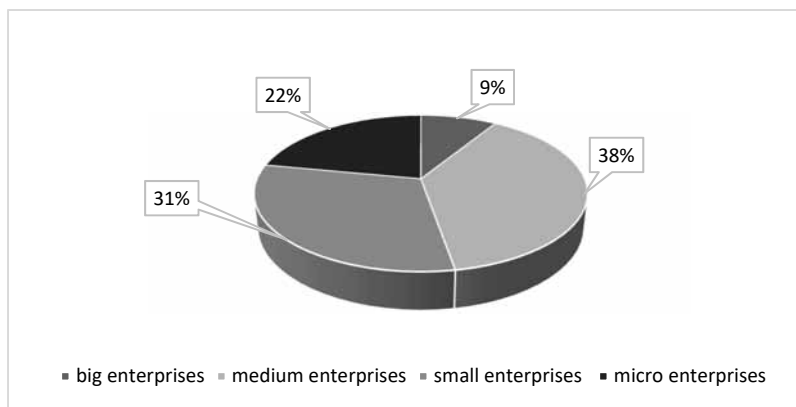
The research does not examine or evaluate specific types of risks that have or could have a relation to Industry 4.0, as it has been done in a large part of the research. The research carried out in this article aims to show precisely those risks that the managers of the organizations define as the most significant at the moment and which can be defined as the main pillars in the risk framework for the implementation of Industry 4.0 in Bulgarian enterprises.

*Figure 1. Areas of activity, industries and fields*



9% are big enterprises, 38% – medium enterprises, 31% – small enterprises and 22% – micro enterprises (Figure 2).

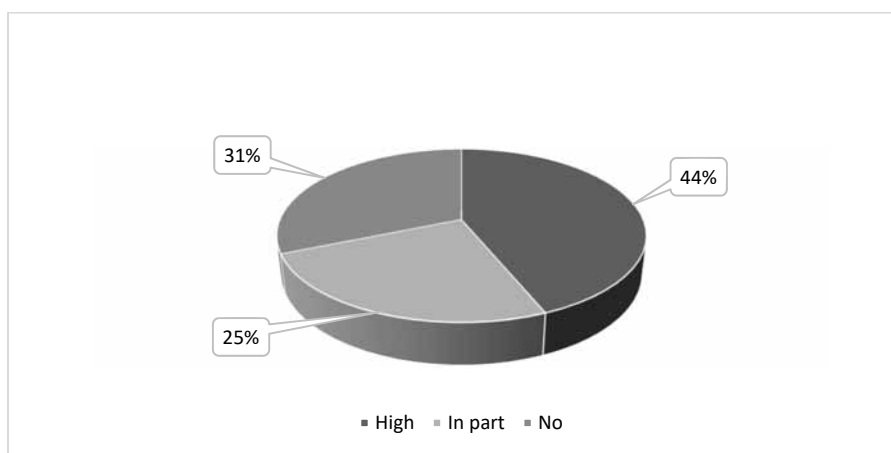
**Figure 2. Structure of the size of the enterprises**



The questions from the research include a wide circle of themes related to Risk Management, Industry 4.0 and Innovational Competency.

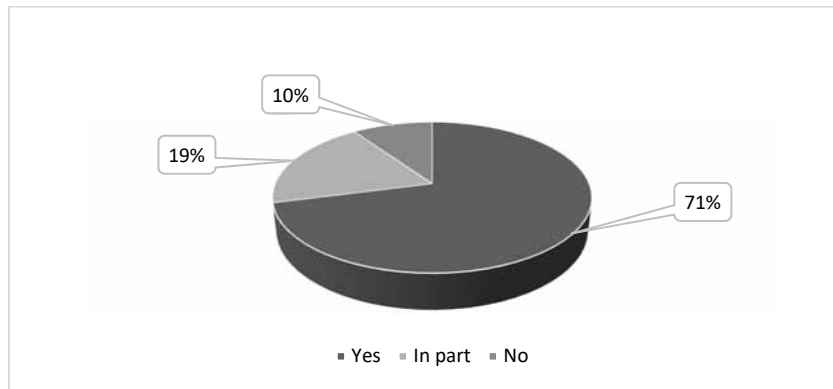
First of all, the participants in the research were asked to present how much and to what extent they are familiar with the nature of Industry 4.0 (Figure 3). Since the Industry 4.0 implementation process is related to a high level of knowledge, it is also one of the first and important key aspects of this process. The conducted research shows that 44% of the respondents are highly familiar with the essence of Industry 4.0, as well as what it requires and enforces its implementation. 25% of the respondents answered that they are partially aware, and 31% answered that they are not aware. The data presented at the moment shows a relatively low level of knowledge about Industry 4.0 in some of the Bulgarian enterprises. This is a serious risk factor that will have a negative effect on the realization of the stages of this process

**Figure 3 Knowing the essence of Industry 4.0**



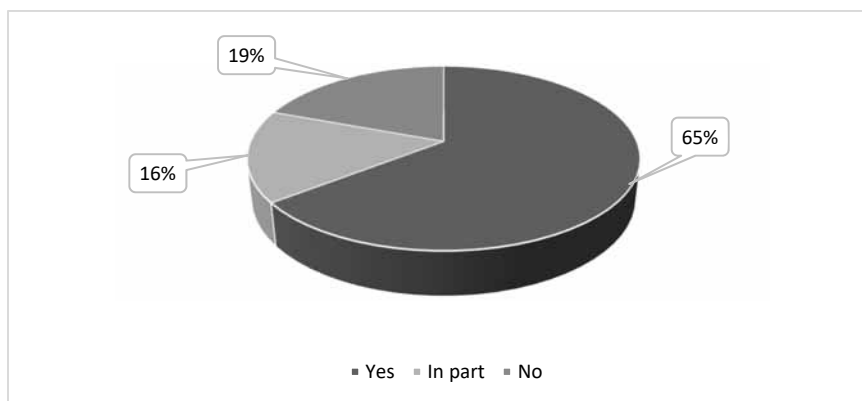
In the second place, research has been made about the use of modern information technologies and platforms in organizations (Figure 4). The research shows that 71% of the respondents use different IT platforms in the management of their business processes, including financial and accounting, warehouse, production, logistics, customer relations management, etc. Partially answered 19% and those who do not use any IT platforms are 10%. It can be seen that the percentage of those who use the possibilities of modern information technologies in their activities is relatively high, but the share of those who do not use the technologies can't be neglected. This creates certain difficulties for the business and its functions. Adapting enterprise processes to modern realities will also be extremely difficult.

**Figure 4. Use of modern information technologies and systems in your organization**



In the third place, the participants in the research were asked whether they intended to digitize their processes for the creation of goods and services in the future and to what extent (Figure 5).

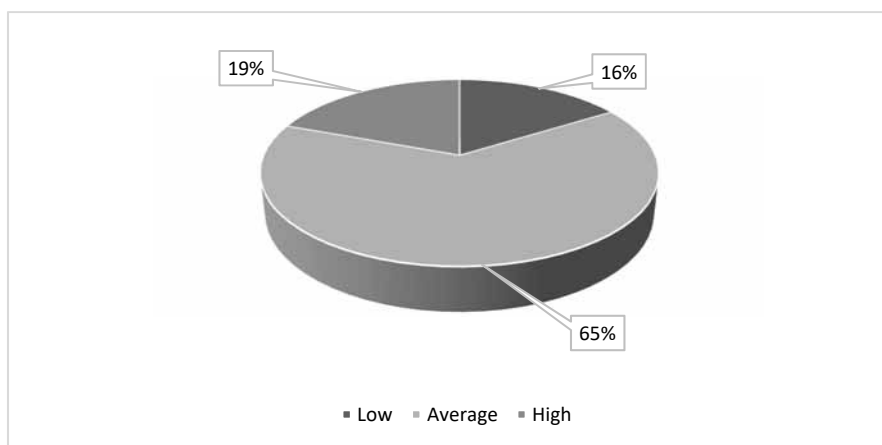
**Figure 5. Linking the creation of goods, services and processes with digital technologies**



65% of the respondents answered that they intend to digitize their processes for the creation of goods and services to a high degree. 16% partially answered and 19% are those who do not intend to. Although the share of those who answered positively is higher, the share of those who partially intend and those who do not intend to use the possibilities of digital technologies, can't be ignored as well and it is 35%.

In the fourth place, the participants in the research were asked to evaluate the possibilities of company management and applied business management models for reformatting and adapting to new technological realities (Figure 6).

**Figure 6. Possibilities of company management regarding applied business management models for reformatting and adapting to new technological realities**



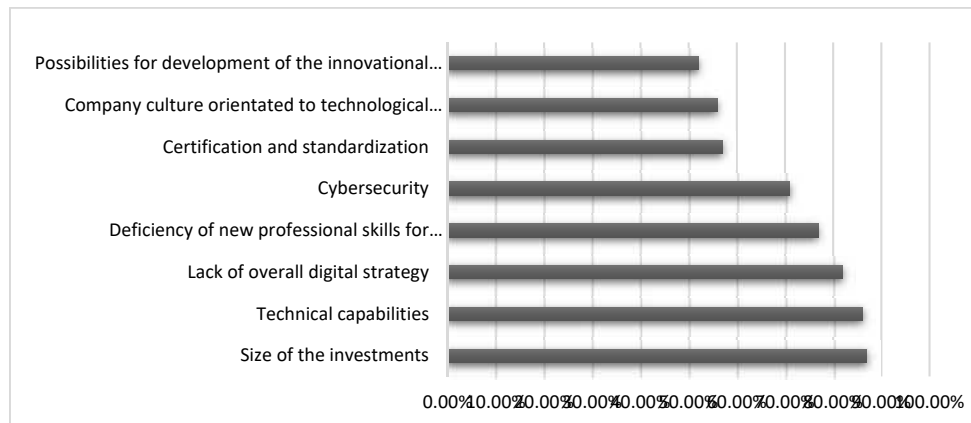
65% of the respondents answered that the possibilities of company management and applied business management models for reformatting and adapting to new technological realities are high. 16% answered that they are medium and 19% that they are low.

Despite the high percentage of those who answered positively, it can be seen that there is a problem in the company management and still a considerable part of the enterprises will encounter difficulties in terms of the digitization of their processes.

In the fifth place, the participants in the research were asked to identify the risk areas in their company that are related to the Industry 4.0 implementation.

This research gives us the possibility to outline the following risk areas and risk components related to building the risk frame when implementing Industry 4.0 in enterprises in Bulgaria. They have key and critical significance in the most cases (Figure 7).

**Figure 7. Main risk components**



- 1) 87% point the size of the investments needed for the realization of Industry 4.0 like a main risk component – the size of the investments for most of the enterprises is “unclear” but they have big expectations. Even a big part of small and medium enterprises in Bulgaria are not ready for such investments and the digitalization of their business processes and systems is difficult to be implemented at that point.
- 2) 86% define the technical possibilities they have. They have concerns about the technical possibilities they have at the moment and probably in the near future for Industry 4.0 realization.
- 3) 82% point the lack of overall strategy for Industry 4.0 implementation – this shows that at that point many of them are not ready for Industry 4.0 implementation.
- 4) 77% point the deficiency of new professional skills for participation in the transformational processes in Industry 4.0 – this component will have a significant influence on the realization of the digitalization of the business processes as well as the work afterwards and the necessity of qualified employees.
- 5) 71% point the cybersecurity – the implementation of internet-based devices will increase the risk of cyberattacks. In this relation, the data security will be threatened and the apprehensions are related to the overall management including their gathering, storage and exchange.
- 6) 57% point the problem with certification and standardization – lack of distinctness regarding the rules, requirements, certificates and standards followed by vagueness regarding the possibilities for building up effective systems preventing abuses in cyberspace.
- 7) 56% point the lack of company culture orientated to technological innovations (which Industry 4.0 is based on). The lack of culture orientated to innovations practically means rejection and difficult acceptance of the novelties and their necessity. This will also be

related to the possibilities for the development of the innovational potential and development of the enterprises.

- 8) 52% point missing possibilities for development of the innovational capacity of the enterprise – many of the enterprises consider that they are not looking for enough possibilities for development of their innovational capacity. It is a precondition for the standstill of the enterprises, impossibility for their development and better positioning in the business environment and it is also a precondition that will exert influence when implementing Industry 4.0.

Next, research has been made on how the risk level has been changed compared to the components identified. It covers six risk areas that have key role in the examined enterprises; business processes, technologies, technical and technological resolutions, financial factor, reliability and information security, IT systems (Table 1).

Three-dimensional scale for risk assessment has been used, including the “Low Risk” levels (0-2.99), “Medium Risk” (3-5.99) and “High Risk” (6-9) (Figure 8).

Rating scale for consequences of risk even occurring:

1 – Low possibility

2 – Medium possibility

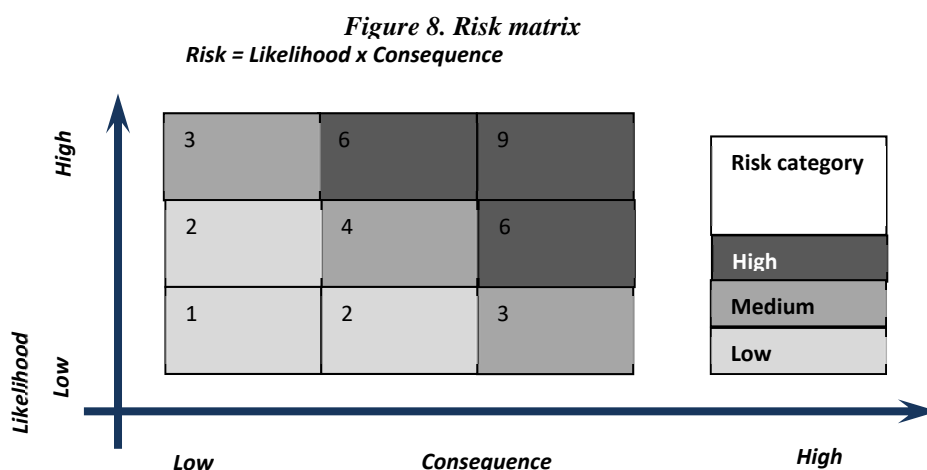
3 – High possibility

Rating scale for risk event occurring possibility:

1 – Low influence

2 – Medium influence

3 – High influence



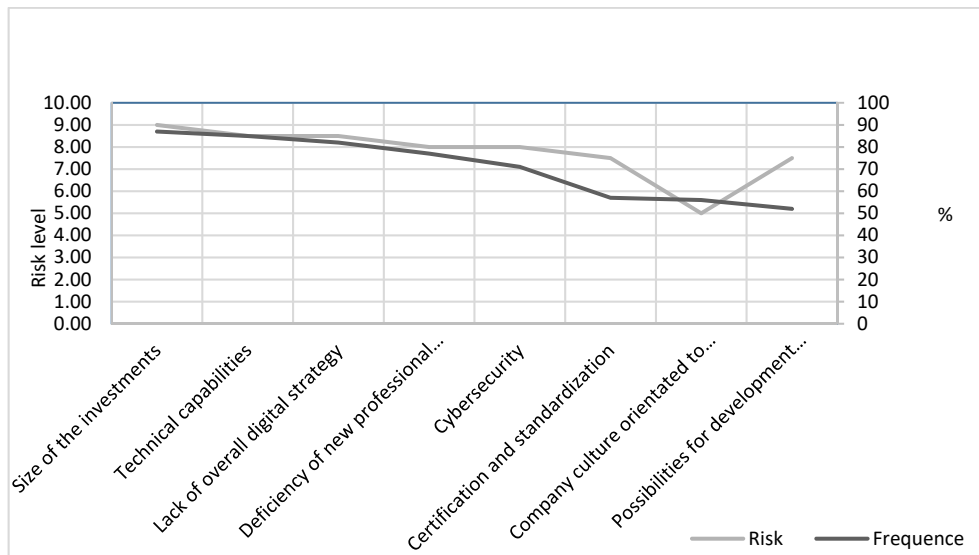


**Table 1. Change in risk versus risk components**

Risk components	Frequency (%)	Risk Level
Size of the investments	87	9,00
Technical capabilities	85	8,50
Lack of overall digital strategy	82	8,50
Deficiency of new professional skills for participation in transformation processes that Industry 4.0 is going to implement	77	8,00
Cybersecurity	71	8,00
Certification and standardization	57	7,50
Company culture orientated to technological innovations	56	5,00
Possibilities for development of the innovational potential	52	7,50

The highest risk level has the size of the investments (Figure 9). It is at 1<sup>st</sup> place with a value of 9 (high risk). At 2<sup>nd</sup> place with a value of 8.50 (high risk) are the technical possibilities of the enterprises and the lack of overall strategy for implementing of Industry 4.0. At 3<sup>rd</sup> place with value 8 (high risk) is the lack of new professional skills for participation in the transformational process that Industry 4.0 will impose and the cyber security. At 4<sup>th</sup> place with a value of 7.5 (high risk) is the certification and standardization and missing opportunities for the development of the innovational capacity of the enterprises. At 5<sup>th</sup> place with value 5 (medium risk) is the lack of company culture directed to technological innovations.

**Figure 9. Risk variation**



The researches show opportunity for analysis in different aspects and they have a key role in Industry 4.0 application in Bulgarian enterprises. The arrangement of the risk components is

not much different than the risk variation in them. The data shows a row of weaknesses and omissions as well as the readiness of the Bulgarian enterprises for Industry 4.0 realization. At this stage, their readiness is extremely low and the risks they need to overcome are extremely high. This identifies the difficulties for Industry 4.0 realization in them. Bulgaria is far behind Industry 4.0 realization. The lack of strategy for Industry 4.0 is also one of the main omissions in this part. The state needs to give assistance to the efforts that the business is making. Digitalization, new technologies, transfer of technologies, etc... do not take a foremost and central place. This means that all processes that are about to be performed, will be performed extremely difficult and some of them will not be performed at all at this stage.

Measures need to be taken that will direct the efforts of the state to help overcoming these difficulties.

## **Conclusion**

Nowadays the development of modern business models is more related to the development of digital technologies. The tendency towards higher productivity, higher additional value and higher accelerated rates of economic development are invariable part of modern business strategies.

This research gave us a possibility to define 8 business components forming a main part of the risk frame for the implementation of Industry 4.0 in the enterprises in Bulgaria.

A number of weaknesses and omissions were laid down. That will hinder the realization of Industry 4.0 in Bulgarian enterprises, including: weaknesses in knowing the essence of Industry 4.0; weaknesses in the application and use of modern information technologies and platforms; weaknesses in the direction of digitization of processes; weaknesses of company management regarding the applied business management models directed to reformatting and adapting the new technological realities.

All of the above as well as the components identified help us define the following future directions for taking actions towards accepting the measures for limiting the risk influence.

These 8 components will play a big role and will have a determinant and key role for Industry 4.0 implementation in the enterprises in Bulgaria.

The variation of the risk, examined in these components, shows the direction that particular actions need to be taken from the side of the state and the enterprises in Bulgaria.

It needs to be remarked that the variation of the risk may be examined in other risk areas, showing specifications and other essential elements in the enterprises.

In this relation, the Industry 4.0 implementation will be a serious challenge for the enterprises in Bulgaria. It is related to high expectations and at the same time has many risks. We also need to highlight the limited possibilities for many of the enterprises at the moment – many of them are not ready for Industry 4.0 implementation. In most cases, they have limited possibilities in the already mentioned risk components.

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## LEADERSHIP, ADAPTABILITY AND PERFORMANCE OF BULGARIAN ORGANIZATIONS – CULTURAL REFLECTIONS ON EMPIRICAL DATA<sup>3</sup>

*This article interprets data from several empirical studies in Bulgaria in three areas of research interest – transformational leadership, adaptability, and organizational performance. The first study examines transformational leadership's influence on adaptability and organizational performance. It formulates two hypotheses and tests them by using data from a broader study on organizational capacity for change among employees and managers in organizations in Bulgaria. Two hierarchical regression analyses confirm the direct and positive influence of transformational leadership on adaptability and organizational performance. Results from an additional set of research studies are used to expand the context for understanding and exploring the three areas of interest. The empirical data for these were collected through five observations on the national and organizational cultures according to Hofstede's methodology. Thus, the article's combined approach of looking at the data from unrelated studies is believed to strengthen the cognitive possibilities in the interpretation of the researched areas and established regularities. The main results point at high values observed for all three variables in Bulgaria. Cultural interpretation of some of the indicators through the years confirm these results and point at unidirectional and stable trends for some (such as growing care for employee development as part of the transformational leadership scale and weakening uncritical following of rules as part of the adaptability scale). There is reason to argue that training is more valuable to employees than job security (both part of the organizational performance scale).*

*Keywords: transformational leadership; organizational ambidexterity; adaptability; organizational performance; behavioural and cultural reflection*

*JEL: L10; L29; M10; M14*

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## **1. Introduction**

In order to survive and be successful in the dynamically changing environment, organizations need to look for new business and work models and strategies. These endeavours are often accompanied by the implementation of changes of varying scope and depth. However, change is rarely an isolated event. Organizations implement different initiatives at the same time or initiate new ones before previous ones have been completed. Meyer and Stensaker (2006) refer to this phenomenon as multiple change.

The ability of an organization to adapt, to change continuously, is key to its survival (Probst, Raisch, 2005). However, the focus on the future should not come at the expense of the present; achieving future sustainability must be balanced with achieving at least sufficiently good current performance (Meyer, Stensaker, 2006). The concept of organizational ambidexterity seeks to explain precisely this balancing act. Organizational ambidexterity considers two different, seemingly contradictory goals (and corresponding activities) that organizations need to balance to be successful in increasingly dynamic and competitive markets. One is exploration (search, experimentation, variation, adaptation, creation of new knowledge), and the other is exploitation (refinement, selection, efficiency, control, security, reduction of variation) (Luger, Raisch, Schimmer, 2018; O'Reilly, Tushman, 2013). Leaders have a significant role in crafting this balance and changing the weight of one or the other activity in response to environmental cues (Havermans, Den Hartog, Keegan, Uhl-Bien, 2016). Leadership style has a critical role in innovative work behaviour in the organization (Akıncı, Alpkan, Yıldız, Karacay, 2022; Rosing, Frese, Bausch, 2011).

Transformational leadership is associated with change-oriented behaviours, adaptation to external stimuli (Yukl, 2012), innovation (Rosing, Frese, Bausch, 2011; Yukl, 2012), learning at the individual, team and organizational levels (Lundqvist, Wallo, Coetzer, Kock, 2022). However, adaptation activities are often ineffective and can lead to worse performance in the short term and threaten the long-term prospects of the organization if not balanced by alignment activities (Gibson, Birkinshaw, 2004).

On the other hand, transformational leadership theory attributes outstanding organizational performance to a sense of mission and new ways of thinking and learning (Lord, Day, Zaccaro, Avolio, Eagly, 2017). Several empirical studies confirm that leadership behaviour has a strong influence on organizational performance in a dynamic environment context (Jansen, Vera, Crossan, 2009).

Certain approaches and regularities, however, are known to be effective in one cultural and behavioural environment (mentality, way of thinking; values, notions of good and bad, etc.), but they do not produce the same results in a different cultural and behavioural environment. Interpreting the two areas of research interest through cultural lenses is treated in this article as beneficial in at least two ways. First, it demonstrates the synergies between different approaches to researched phenomena. Second, it gives a specific cultural context that enables better understanding and discussing the results obtained in the context of previous studies in different cultural contexts.

This article aims to contribute to the body of transformational leadership research, and in particular in the context of Bulgaria. It poses the following research question: what the

influence of transformational leadership is on adaptability and organizational performance. The empirical results obtained are used as a basis for cultural and behavioural reflections. The main idea behind employing these two related narratives is to problematize cultural and behavioural contexts. In this way, it delineates the limits of applicability and the limitations of the states and dependencies presented in the main narrative.

In the main narrative, two hypotheses are formulated about the direct and positive influence of transformational leadership on adaptability (H1) and organizational performance (H2). A partial data set from a quantitative empirical study on the capacity for organizational change in Bulgarian organizations is used to test the two hypotheses.

The results are then interpreted based on observations on behavioural and cultural features in organizations in Bulgaria (Davidkov, 2019) – the related narrative. For this purpose, there are three "inclusions" made in the main narrative to allow a behavioural and cultural assessment of essential aspects of the researched areas. The first "inclusion" follows the presentation of the transformational leadership indicators. The second one is after the presentation of the adaptability indicators. And the third one adds to the organizational performance. Thus, the related narrative strengthens the cognitive possibilities to interpret the observed state of the researched areas and established regularities and helps to outline the applicability and limitations of the states and dependencies derived in the main narrative.

The rest of this article is organized into four sections. Part 2 reviews the literature on leadership and the relationship of transformational leadership to adaptability and organizational performance. Part 3 presents the research methodology, sample, and indicators. In Section 4, the obtained results are presented and discussed. The related narrative makes three inclusions in the text to add new knowledge through behavioural and cultural reflection. Part 5 concludes.

## **2. Literature Review**

Identifying the determinants that contribute to the development of an open-to-change, innovative, and supportive organizational culture will reflect such a culture's importance not only in the process of implementing a specific change but also in the development and maintenance of a capacity for change. Schneider, González-Romá, Ostroff and West (2017) argue that interventions that aim at (planned) climate and culture change must focus on *leadership* and make the connection between the two:

*"It may be time to focus leadership training and development on the implementation of policies and practices that will build the traditions, symbols, socialization experiences and everyday behaviours to achieve both the processes and subsequent outcomes desired."* (Schneider, González-Romá, Ostroff, West, 2017).

Schein (1988) emphasizes identification with leaders as one of the mechanisms for creating organizational culture – organizational members identify with leaders and internalize leaders' values and assumptions. Schein further develops these ideas into the concept of three subcultures based on occupational communities, emphasizing the need to align the culture of CEOs, the culture of engineering, and the culture of operators to facilitate learning and

innovation (Schein, 1996, p. 13). This alignment of subcultures is at the heart of adaptive and thriving (high-performing) organizations.

The role of leaders and leadership styles and their relationship to organizational culture have been addressed by many authors. Cameron and Quinn (2011) emphasize the role of the founder of the organization and the conscious efforts of the management team to create and change the organizational culture. Through such efforts, external challenges are met, and the desired performance is maintained. [Managing] leaders formulate and align the organizational mission, strategy, and culture with the external environment; they give a vision of the future and change the goals (Burke, 2011). Most authors single out leadership as one of the key success factors of change initiatives (Burke, 2011; Kotter, 2007).

The topic of leadership is multi-layered and multi-disciplinary; its identification, explanation, and description require the simultaneous use of different approaches and conceptual frameworks (Davidkov, 2005). One prevalent perspective in literature distinguishes transactional from transformational leadership (Lord, Day, Zaccaro, Avolio and Eagly, 2017). Defining what distinguishes transformational leadership still sparks researchers' interest (for a more detailed review, see Lord, Day, Zaccaro, Avolio, Eagly, 2017). Avolio and Bass (1999) conceptualize it through the following factors: charisma, inspiration, intellectual stimulation, individualized consideration, contingent reward, management by exception, and laissez-faire leadership. Many authors associate it with expectations for high results (Podsakoff, MacKenzie, Moorman and Fetter, 1990), innovative behaviour (Carless, Wearing and Mann, 2000), communicating a vision (Carless, Wearing, Mann, 2000; Podsakoff, MacKenzie, Moorman, Fetter, 1990), which are also associated with the concept of transformation as a large-scale change in the organization. The role of transformational leaders is significant when the environment is dynamic, poses challenges to the survival of the organization, and requires rapid and large-scale changes. A relationship can be hypothesized between transformational leadership and an organization's ability to adapt to an uncertain environment as well as to achieve high performance.

*Adaptability* and alignment are the two elements of contextual organizational ambidexterity that Gibson and Birkinshaw (2004) propose and test. They view organizational ambidexterity as the behavioural ability to simultaneously achieve organizational alignment and adaptation. This behavioural ability is positively influenced by an organizational context characterized by a combination of stretch, discipline, support, and trust. Adaptability activities are often the focus of organizations in times of dynamically changing internal and external environmental demands (Mladenova, 2022).

Organizational leaders have a significant role in balancing adaptation and alignment; by providing guidance and encouraging employees to share good practices, leaders can encourage experimentation in dynamic settings that require adaptation (Tarba, Jansen, Raisch, Lawton, 2020).

Transformational leadership is also associated with followers' change commitment (Herold, Fedor, Caldwell, 2007) and the ability of the organization to adapt.

Thus, the following hypothesis is formulated and tested: **H1. Transformational leadership directly and positively influences organizational adaptability.**



One way to define an organization's competitiveness is through its ability to achieve and sustain higher *organizational performance* than those of competitors. Performance can be defined in many ways and may reflect the imperatives faced by the organization.

Transformational leadership theory suggests that exceptional results are created when there is a sense of mission and new ways of thinking and learning (Lord, Day, Zaccaro, Avolio, Eagly, 2017). Transformational leaders succeed in inspiring employees to internalize the goals of the organization, to commit to and pursue these goals persistently, and to exceed expectations (Pillai, Schriesheim, Williams, 1999).

In relation to organizational performance, the following hypothesis is formulated and tested:  
**H2. Leadership directly and positively influences organizational performance.**

### 3. Method

The main narrative in this article presents partial results of a quantitative study on adaptability, organizational performance, and organizational capacity for change, of which transformation leadership is a factor (Mladenova, 2021). The empirical data for the three variables were collected in the period November 2020 – January 2021 among employees and managers in organizations operating in Bulgaria. The questionnaire was distributed online (via Google Forms). The sample was formed based on convenience and snowball principles. The collected data allows for outlining some important interrelationships, which are then interpreted through the results of another set of studies (the related narrative).

#### 3.1. Sample

*Main characteristics of the empirical study.* A total of 204 valid, filled-in questionnaires were received during the data collection period. Four observations were excluded as outliers. Thus, the results presented below are based on a sample of 200 observations.

*Profile of the respondents:* 60% female; 74% aged under 40; nearly 90% have higher education (bachelor's or master's degree); 63% have worked in the organization for less than 5 years. 58% have no managerial role, 35% are at the middle management level and 7% are members of the top management team (incl. executive director or deputy, member of the management board).

*Profile of the organizations* (in which respondents work). Sector: services (53%), manufacturing (26.5%), trade (11%), government (6%), and construction (3.5%). Organization size, determined by the number of employees: 57.5% of the respondents work at large, and 42.5% – at small and medium-sized enterprises. 65% of the respondents work at privately owned, 20.5% – at predominantly privately owned, and 14.5% – at state-owned organizations. 45% of the respondents work at wholly or predominantly Bulgarian-owned, and the rest – at foreign or predominantly foreign-owned organizations. 45.5% of the organizations work only on the Bulgarian market, while the rest are export-oriented.

### 3.2. Measures

The short questionnaire Global Transformation Leadership (GTL) developed by Carless, Wearing and Mann (2000) is used to measure the independent variable *transformational leadership*. The short GTL consists of seven indicators regarding vision, employee development, supportive leadership, empowerment, innovative thinking, leading by example, and charisma, assessed on a 5-point Likert scale. The scale range is 1=very rarely or never, 5=very often or almost always. Carless, Wearing and Mann (2000) report Cronbach alpha of 0.93.

The first dependent variable, *adaptability*, is considered here as one of the two elements of contextual organizational ambidexterity. Three indicators applied by Gibson and Birkinshaw (2004) are used to measure it. The indicators are assessed on a 7-point scale ranging from 1=strongly disagree to 7=strongly agree. Gibson and Birkinshaw (2004) report Cronbach's alpha of 0.80.

To measure the second dependent variable, *organizational performance*, seven indicators applied by Judge, Naoumova and Douglas (2009) are used. These indicators are assessed on a 7-point scale ranging from 1=strongly disagree to 7=strongly agree. Judge, Naoumova and Douglas (2009) report Cronbach's alpha of 0.93.

The indicators (Table 1) have been translated into Bulgarian and a uniform 5-point Likert scale (1=disagree, 5=agree) has been applied to all.

**Table 1. Variables and indicators used.**

Variable	Indicators	Source
Transformational leadership	<ol style="list-style-type: none"> <li>1. My leader communicates a clear and positive vision of the future.</li> <li>2. My leader treats staff as individuals, supports and encourages their development.</li> <li>3. My leader gives encouragement and recognition to staff.</li> <li>4. My leader fosters trust, involvement and cooperation among team members.</li> <li>5. My leader encourages thinking about problems in new ways and questions assumptions.</li> <li>6. My leader is clear about his/her values and practices what he/she preaches.</li> <li>7. My leader instills pride and respect in others and inspires me by being highly competent.</li> </ol>	Carless, Wearing and Mann (2000)
Adaptability	<ol style="list-style-type: none"> <li>1. The management systems in this organization encourage people to challenge outmoded traditions/practices/sacred cows. *</li> <li>2. The management systems in this organization are flexible enough to allow us to respond quickly to changes in our markets.</li> <li>3. The management systems in this organization evolve rapidly in response to shifts in our business priorities.</li> </ol>	Gibson and Birkinshaw (2004)
Organizational performance	<ol style="list-style-type: none"> <li>1. Profit</li> <li>2. Growth in revenue (assets) over the last 3 years</li> <li>3. Customer satisfaction</li> <li>4. Product (service) quality</li> <li>5. Efficient use of the organization's resources</li> <li>6. Process improvement</li> <li>7. Secure jobs</li> <li>8. Providing training for employees</li> </ol>	Judge, Naoumova and Douglas (2009)

\* The indicator is excluded after applying a reliability test.

Source: Own research.

Data were analyzed using SPSS v.25.

## 4. Results and Discussion

### 4.1. Impact of transformational leadership on adaptability and organizational performance

*Transformational leadership* is one of the factors extracted through factor analysis (principal components method with Varimax rotation, eigenvalue > 1) during the analysis of the data sample of the main narrative study. It is composed of all the seven originally included indicators. Cronbach's alpha is 0.956 – slightly higher than that reported by Carless, Wearing and Mann (2000). A new complex variable is calculated as a mean value of the seven indicators included. Bivariate distributions show a weak relationship between transformational leadership and two control variables: *sector* (Cramer's V=0.218; Approx. Sig.=0.001) and *ownership* (Cramer's V=0.189; Approx. Sig.=0.045).

The dependent variable *adaptability* composes two of the initially included three indicators proposed by Gibson and Birkinshaw (2004). After excluding one of the indicators, the reliability test gives satisfactory results (Cronbach's alpha 0.861). This value is slightly higher than the original Gibson and Birkinshaw scale (Cronbach's alpha 0.80), but the limitation here is the reduced number of indicators. A new variable is calculated as a mean value of the remaining two indicators. Bivariate distributions show a weak relationship between adaptability and three control variables: *sector* (Cramer's V=0.242; Approx. Sig.=0.000), *ownership* (Cramer's V=0.230; Approx. Sig.=0.007) and *organization size* (Cramer's V=0.184; Approx. Sig.=0.039).

The dependent variable *organizational performance* includes all the eight indicators proposed by Judge, Naoumova and Douglas (2009). The reliability test gives satisfactory results (Cronbach's alpha 0.858) and allows further analyses. A new variable is calculated as a mean value of the eight indicators included. Bivariate distributions showed a weak relationship between organizational performance and three control variables: *sector* (Cramer's V=0.201; Approx. Sig.=0.039), *ownership* (Cramer's V=0.187; Approx. Sig.=0.007), and *ownership origin* (Cramer's V=0.221; Approx. Sig.=0.003).

Two linear regression analyses were performed to test the hypotheses.

**Hypothesis 1:** Testing the relationship between the independent variable *transformational leadership* and the dependent variable *adaptability* is done through linear regression analysis. The relationship between the two variables is statistically significant (Sig.=0.000;  $p < 0.05$ ). The analysis of coefficients shows that *transformational leadership* is statistically significant ( $b=0.390$ , Sig.=0.000 at  $p < 0.05$ ). The values of  $R=0.357$  and the adjusted  $R^2=0.123$  indicate a weak relationship (Ferguson, 2009; Schober, 2018) between the studied variables.

Additional analysis was performed to identify control variables that influence adaptability. For this purpose, new binary variables are calculated for each of the 16 control variables and are included in a stepwise regression with the dependent variable *adaptability*. The evaluation of the resulting model shows a weak influence of two of them ( $R=0.306$ ; adjusted  $R^2=0.085$ ): *ownership-private* and *age of respondents-above 41 years* (Sig.=0.000;  $p < 0.05$ ). Private ownership of the organization ( $b_1=0.783$ , Sig.=0.000) is directly and positively related to adaptability. The age of the respondents – above 41 years ( $b_2=0.500$ , Sig.=0.003) also directly and positively affects the adaptability of the organization.

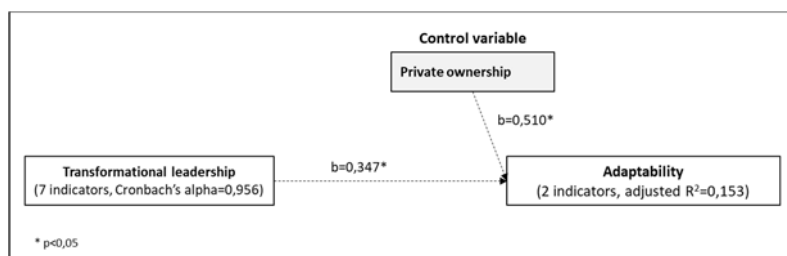
These control variables are included in a hierarchical regression analysis as a second model (the first model included *transformational leadership* only). However, an analysis of the coefficients shows that only *ownership-private* is statistically significant. The model that includes *transformational leadership* and the control variable *ownership-private* is statistically significant (Sig.=0.000;  $p < 0.05$ ). The values of  $R = 0.407$  and adjusted  $R^2 = 0.153$  indicate a weak relationship between the studied variables. The values of  $VIF = 1.032$  and the Condition Index = 10.218 indicate that there is no multicollinearity in the resulting model.

Hypothesis 1 is confirmed. *Transformational leadership* directly and positively affects the dependent variable *adaptability*. The independent variable explains only partially (12.3%) the variance of the dependent variable, which is expected. The inclusion of one control variable (*ownership-private*) marginally improves the explanation of the dependent variable. *Adaptability* would depend on more factors, including contextual (Gibson and Birkinshaw, 2004), and cannot be explained solely by the factors investigated here.

These results align with the findings of previous studies on the topic. Jansen, Vera and Crossan (2009) argue that the two activities of organizational ambidexterity (exploration and exploitation) require different leadership behaviours, especially in dynamic environments. Based on empirical research in the automotive sector, they prove a positive influence of transformational leadership on exploratory innovation activities and a negative influence of transactional leadership. On the other hand, transactional leadership has a positive influence on exploitative innovation activities. A positive relationship between transformational leadership and exploration is also found by Baškarada, Watson and Cromarty (2016).

The resulting model is illustrated in Figure 1.

**Figure 1. Influence of transformational leadership on adaptability**



Source: Own research.

**Hypothesis 2:** Testing the relationship between the independent variable *transformational leadership* and the dependent variable *organizational performance* is done through linear regression analysis. The relationship between the two variables is statistically significant (Sig.=0.000;  $p < 0.05$ ). The analysis of the coefficients shows that *transformational leadership* is statistically significant ( $b = 0.324$ ; Sig.=0.000 at  $p < 0.05$ ). Values of  $R = 0.515$  and adjusted  $R^2 = 0.261$  indicate a moderate to weak relationship (Ferguson, 2009; Schober, 2018) between the studied variables.

Additional analysis was performed to identify control variables that influence organizational performance by stepwise inclusion of binary variables in a regression to *organizational*

performance. The evaluation of the model shows a weak influence of three of them ( $R=0.306$ ; adjusted  $R^2=0.085$ ): *sector-public*, *size-large*, and *export orientation* (Sig.=0.001;  $p<0,05$ ). The *public sector* ( $b_1= -0.546$ ; Sig.=0.003) has a negative influence on organizational performance, as well as *export orientation* ( $b_3= -0.178$ ; Sig.=0.042). The size of organizations (*large*:  $b_2=0.206$ , Sig.=0.018) has a positive influence on organizational performance.

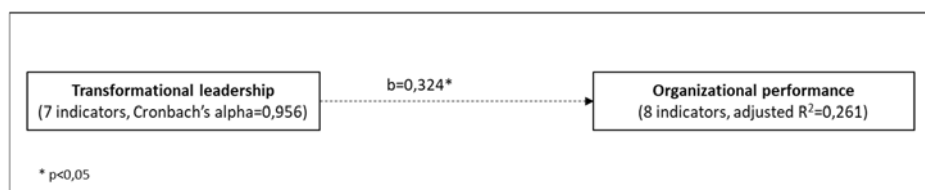
These control variables are included in a hierarchical regression analysis as a second model (the first model includes *transformational leadership* only). However, an analysis of coefficients shows that none of the control variables is statistically significant.

Hypothesis 2 is confirmed. *Transformational leadership* directly and positively affects the dependent variable of *organizational performance*. The independent variable explains only partially (26.1%) the variance of the dependent variable, which is expected. *Organizational performance* would depend on more factors and cannot be explained solely by leadership style.

These results confirm the findings of previous studies. Summarizing in a meta-analysis of 117 independent samples of 113 empirical studies, Wang, Oh, Courtright and Colbert (2011) confirm the positive influence of transformational leadership on performance at all three levels: individual, group, and organizational.

The resulting model is illustrated in Figure 2.

**Figure 2. Impact of transformational leadership on organizational performance.**



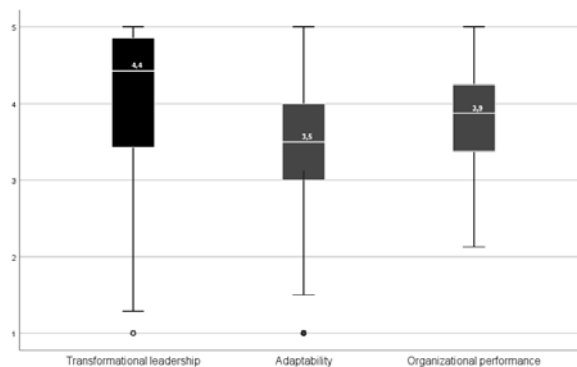
Source: Own research.

The above results answer the research question posed in this article. The analyses confirm the direct and positive influence of *transformational leadership* on *adaptability* and *organizational performance*.

#### 4.2. Empirical results for organizations in Bulgaria in the three areas of research interest – *transformational leadership, adaptability, and organizational performance*

The analysis of the three variables' values presents a snapshot of the sample of organizations in Bulgaria, with the level of analysis being individual. The evaluation of the respondents is summarized in Figure 3. All three variables are rated relatively high, above the average "neutral" level. The very high average score on the *transformational leadership* factor is to be noted.

**Figure 3. Three areas of research interest: mean values for the sample**



Source: Own research.

The text below examines and comments on the data obtained for each of the three research areas. First, the main narrative provides details on the mean values for the indicators of each of the variables. Then, the related narrative provides cultural and behavioural reflections using some of the indicators from the main narrative and expanding them with a dataset from other studies.

#### 4.2.1. Transformational leadership

Transformational leadership here reflects seven behaviours: communicating a vision, developing staff, providing support, empowering staff, being innovative, leading by example, and being charismatic. A more detailed look at the respondents' assessment of each of the indicators is presented graphically in Figure 4.

**Figure 4. Transformational leadership – mean values of indicators.**



Source: Own research.

**Related Narrative 1:** In the main narrative thus far, transformational leadership has the status of an independent variable (area of research interest; “scale”). The assessment of transformational leadership is represented by seven indicators (statements) as in Figure 4. Below, the cultural and behavioural context is built as a continuation of one of the statements, namely: 2. *My leader treats staff as individuals, supports and encourages their development.*

The data, based on which behavioural and cultural reflection is made, were obtained during five observations on national and organizational cultures in 1995, 2001, 2008, 2014, and 2021 (Davidkov, 2019; Davidkov, 2022a). Hofstede’s (2001) methodology is used, and the following indices are calculated: Power Distance Index (PDI), Uncertainty Avoidance Index (UAI), Individualism Index (IDV), and Masculinity Index (MAS). The questionnaire (Davidkov, 2019, p.399) includes a set of indicators for work values (goals); a set of indicators for satisfaction with the state of the working environment factors; a set of indicators for evaluating managerial behavior, etc. Depending on the approach to the studied phenomena, the empirical data are processed and interpreted in accordance with the specific research approach, model, and strategy. The 1995 study is based on a sample of 377 respondents; 2001 – 1,200 respondents; 2008 – 1,200 respondents; 2014 – 900 respondents; 2021 – 2,651 respondents.

Reflection on this element of transformational leadership is carried out based on indicators that answer the following questions:

- To what extent does the manager care about the development of the subordinates?
- How do subordinates perceive their immediate manager?
- What type of manager would subordinates like to work with?

The empirical indicators through which data are collected to answer the above questions are presented in Table 2.

**Table 2. Empirical indicators.**

What question are we looking for an answer to?	Empirical indicator/response scale used
To what extent does the leader care about the development of the subordinates?	How often would you say your immediate manager is concerned about helping you get ahead? (1 – Always; 2 – Usually; 3 – Sometimes; 4 – Seldom; 5 – Never)
How do subordinates perceive their immediate manager?	To which of the following four types of managers would you say your own manager most closely corresponds? (1 – Manager 1; 2 – Manager 2; 3 – Manager 3; 4 – Manager 4; 5 – I currently have no manager)
What type of manager would subordinates like to work with?	For the four types of managers, please mark the one which you would prefer to work under (1 – Manager 1; 2 – Manager 2; 3 – Manager 3; 4 – Manager 4)

Source: Hofstede (2001); Davidkov (2019).

Four types of managers are predefined as follows (Hofstede, 2001; Davidkov, 2019):

**Manager 1.** Usually makes his/her decisions promptly and communicates them to his/her subordinates clearly and firmly. Expects them to carry out the decisions loyally and without raising difficulties.

**Manager 2.** Usually makes his/her decisions promptly, but, before going ahead, tries to explain them fully to his/her subordinates. Gives them the reasons for the decisions and answers whatever questions they may have.

**Manager 3.** Usually consults with his/her subordinates before he/she reaches his/her decisions. Listens to their advice, considers it, and then announces his/her decision. He/she then expects all to work loyally to implement it whether or not it is in accordance with the advice they gave.

**Manager 4.** Usually calls a meeting of his/her subordinates when there is an important decision to be made. Puts the problem before the group and tries to obtain consensus. If he/she obtains consensus, he/she accepts this as the decision. If consensus is impossible, he/she usually makes the decision him/herself.

**To what extent does the manager care about the development of the subordinates?** In 2021, 59% of the respondents in organizations in Bulgaria claim that their immediate manager takes care of their development and helps them (answers: 1-Always; 2-Usually). Historically, the relative share of this type of manager has increased as follows: 1995 – 40%; 2001 – 50%; 2008 – 54%; 2014 – 56%; 2021 – 59%. The trend is unidirectional and sustainable. There are grounds to assume that the manifestation of this component of transformational leadership is enhanced and stabilized in the 55-60% interval.

**How do subordinates perceive their immediate manager?** – the results by year are presented in Table 3.

**Table 3. Perception of immediate manager (1995 – 2001 – 2008 – 2014 – 2021).**

To which of the following four types of managers would you say your own manager most closely corresponds? (Please indicate only <u>one response</u> )	1995	2001	2008	2014	2021
	(% of respondents)				
Manager 1	36	29	27	30	25
Manager 2	26	28	30	26	31
Manager 3	28	32	31	32	30
Manager 4	10	11	12	12	14
Total	100	100	100	100	100

Source: Davidkov (2019); Davidkov (2022a).

During the period 2001 – 2021, a stable distribution of the types of managerial behaviour was observed in the organizations in Bulgaria. Authoritarian management (Manager 1 + Manager 2) is extremely stable (2001 – 57%; 2008 – 57%; 2014 – 56%; 2021 – 56%). Consultative management (Manager 3) is also extremely stable as a share (31%, 31%, 32%, 30%). This resilience is also characteristic of the democratic managerial style (Manager 4) – 11%, 12%, 12%, 14%. There are grounds for asserting that managerial behaviour is value- and culture-determined. Such an assertion could be one of the possible explanations for the highly stable manifestation of managerial behaviour types over a relatively long period (2001 – 2021). In the context of the above, it can be assumed that a similar distribution will be reproduced during future observation (within the next 5-10 years).

**Preferences for the type of managerial behaviour** are presented in Table 4.



**Table 4. Preferences for managerial behavior types (1995 – 2001 – 2008 – 2014 – 2021)**

For the four types of managers, please mark the one which you would prefer to work under. (Please indicate only <u>one</u> response)	1995	2001	2008	2014	2021
	(% of respondents)				
Manager 1	6	9	7	9	9
Manager 2	25	20	23	20	22
Manager 3	50	47	47	44	41
Manager 4	19	24	23	27	28
Total	100	100	100	100	100

Source: Davidkov (2019); Davidkov (2022a).

The distribution of responses related to preferred managerial behaviour over the period 2001 – 2021 is also markedly stable. There are reasons to argue that the motivations for choosing the preferred type of manager are value- and culturally determined.

In Hofstede's approach, the two indicators – perception of the actual and preferences for a certain type of managerial behaviour – are constituent elements in the calculation of PDI. The high relative share of authoritarian behaviour (Manager 1 + Manager 2) results in higher PDI values (Hofstede, 2001; Davidkov, 2019). A strong preference for consultative management leads to lower PDI values. A series of studies (Davidkov, 2019) show that PDI values for Bulgaria are permanently high. From here, many results of significant cognitive value can be derived, as follows (see Table 5).

**Table 5. Observed trends at low and high values of PDI**

Low values of PDI	High values of PDI
Hierarchy means inequality of roles – it is established for convenience	Hierarchy means existential inequality
A latent harmony between those with more and those with less power	A latent conflict between those with more and those with less power
More modest expectations about the benefits of new technologies	High expectations for the benefits of technology
Decentralized decision-making structures; less concentration of power	Centralized decision-making structures; stronger concentration of power
Less managerial (supervisory) personnel	Large managerial (supervisory) personnel
The ideal boss is a resourceful democrat; sees self as practical, orderly and supportive	The ideal boss is a well-meaning autocrat or "good father"; sees self as the benevolent "decision maker"
Managers rely on their personal experience and subordinates	Managers rely on formal rules
Subordinates expect to be consulted	Subordinates expect to be told (what to do)
Consultative leadership leads to satisfaction, good task performance and good productivity	Authoritarian leadership and close supervision lead to satisfaction, good task performance and good productivity
Subordinates are influenced by bargaining and reasoning; the management-by-objectives approach works	Subordinates are influenced by formal authority and sanctions; the management-by-objectives approach does not work
"Good champions" are needed for innovation	Innovation requires strong support from the hierarchy
Openness with information, incl. with subordinates	Information exchange constrained by hierarchy

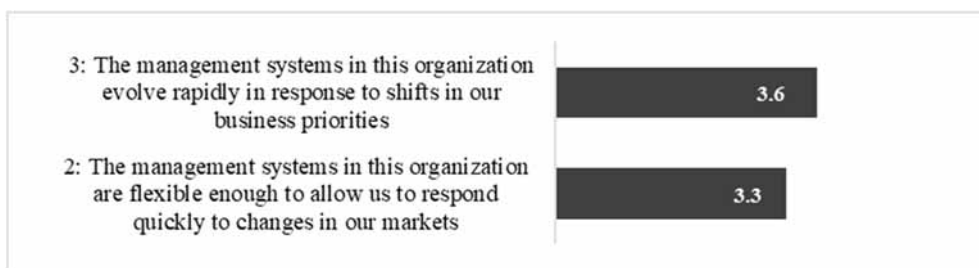
Source: Hofstede (2001); Davidkov (2019).

Given the high and sustainable values of PDI recorded for the organizations in Bulgaria, there is reason to claim that, in general, the situation in the observed organizations is more accurately characterized by the descriptions in the right column (high values of PDI). Each of the specified characteristics has a more direct or indirect explanatory value in terms of the ability of organizations to adapt and achieve results beneficial to the organization. As well as with regard to the specific mechanisms through which managers and teams interact; the decision-making process; working and non-working management practices, etc.

#### 4.2.2. Adaptability

The dependent variable *adaptability* reflects the organization's ability to change in accordance with environmental shifts. Adaptability suggests that in dynamic environments, organizations focus more on exploration as part of change efforts. A more detailed look at the respondents' assessment of the two indicators included in the main narrative is presented in Figure 5.

**Figure 5. Adaptability – mean values of indicators**



Source: Own research.

**Related Narrative 2.** In the main narrative, adaptability has the status of a dependent variable. The assessment of adaptability is represented by two indicators (statements) as in Figure 4. Below, the cultural context is built as a continuation of one of the statements, namely: 2. *The management systems in this organization are flexible enough to allow us to respond quickly to changes in our markets.*

Reflection on this indicator is based on the rule orientation item, used in the set of studies on national and organizational cultures: *To what extent do you agree with the statement 'Company rules should not be broken – even when the employee thinks it is in the organization's best interest'?* (1 – Strongly agree; 2 – Rather agree; 3 – Undecided; 4 – Rather disagree; 5 – Strongly disagree). The results of five observations in organizations in Bulgaria on this indicator are presented in Table 6.

**Table 6. Univariate distribution of responses (1995 – 2001 – 2008 – 2014 – 2021).**

To what extent do you agree with the following statement: “Company rules should not be broken – even when the employee thinks it is in the organization’s best interest”?	1995	2001	2008	2014	2021
	(% of respondents)				
Strongly agree	31	26	22	27	19
Rather agree	29	27	27	31	28
Undecided	8	20	29	27	34
Rather disagree	28	23	17	12	15
Strongly disagree	4	4	5	3	4
Total	100	100	100	100	100

Source: Davidkov (2019); Davidkov (2022a).

Over the entire period studied (1995 – 2021), uncritical following of rules weakens (“Strongly agree”). The search for a different point of view (“Undecided”) is visibly increasing.

The indicator thus presented (named *rule orientation*) is used in measuring UAI (Hofstede, 2001; Davidkov, 2019). A strong orientation to following rules results in higher UAI values. (For additional discussion on the norms and practices related to UAI see Davidkov, 2019, p.491; Hofstede, 2001, p.145).

The choice concerning rule orientation is determined by several related judgments. These are subject to the understanding of personal, group, and organizational interests and their hierarchy, including the cultural situation of the actors (for example, in the context of individualism-collectivism). Such judgments are considered in a different time context (short- vs. long-term orientation). They also relate to the ability of people in the organization to influence the issues that matter to them; to the control mechanisms – to what extent deviation from the norms is possible, and what is the price to be paid for not following the rules.

In another related context, the attitude towards rules is a prerequisite and a guide in the process of building a strategy for workplace behaviour. In the context of the organization, each employee (manager) strives to build a winning behaviour. The attitude towards rules is an essential element in justifying (and choosing) a behavioural strategy of the individual. Interpretation of rules and rule compliance is highly dependent on the behavioural and cultural practices at work.

#### 4.2.3. Organizational performance

Achieving and maintaining *organizational performance* above the competitors' average level is associated with the organization's competitive advantage. A more detailed view of the respondents' assessment of the indicators included in the main narrative is presented in Figure 6.

**Figure 6. Organizational results – mean values of indicators**



Source: Own research.

**Related Narrative 3.** In the main narrative, *organizational performance* has the status of a dependent variable. The assessed state is represented by eight indicators (statements) as in Figure 5. Below, the cultural and behavioural context is built as a continuation of the following two indicators: 7. *Secure jobs* and 8. *Employee training*.

Reflection on these elements of organizational performance is made based on two pairs of indicators (see Table 7).

**Table 7. Indicators of job security and employee training.**

Pairs of indicators		Indicators
Security	For <i>value</i> (significance) of <i>job security</i>	To what extent it is important to you to have the security that you will be able to work for your organization as long as you want to? (1 – very important; 2 – important; 3 – neither important nor unimportant; 4 – not important; 5 – not important at all)
	For <i>satisfaction</i> with <i>job security</i>	How satisfied are you with your current job in terms of security that you will be able to work for this organization as long as you want to? (1 – completely satisfied; 2 – rather satisfied; 3 – neither satisfied and nor dissatisfied; 4 – rather dissatisfied; 5 – very dissatisfied)
Training	For <i>value</i> (significance) of the <i>training</i>	To what extent is it important to you to have training opportunities (to learn or improve your skills and acquire new skills) at the job? (1 – very important; 2 – important; 3 – neither important nor unimportant; 4 – not important; 5 – not important at all)
	For <i>satisfaction</i> with <i>training</i>	To what extent are you satisfied with your current job in terms of training opportunities (to learn or improve your skills and acquire new skills)? (1 – completely satisfied; 2 – rather satisfied; 3 – neither satisfied nor dissatisfied; 4 – rather dissatisfied; 5 – very dissatisfied)

Source: Hofstede (2001); Davidkov (2019).

Table 8 presents the results related to the *job security indicators*.

**Table 8. Job security indicators – main results**

Indicator	Mean value of the indicator (2021)
To what extent it is important to you to have the security that you will be able to work for your organization as long as you want to? (1 – very important; 2 – important; 3 – neither important nor unimportant; 4 – not important; 5 – not important at all)	1.81
How satisfied are you with your current job in terms of security that you will be able to work for this organization as long as you want to? (1 – completely satisfied; 2 – rather satisfied; 3 – neither satisfied and nor dissatisfied; 4 – rather dissatisfied; 5 – very dissatisfied)	2.13

Source: Davidkov (2022a); Davidkov (2022b).

Table 9 presents the results for *training opportunities*.

**Table 9. Training opportunities indicators – main results**

Indicator	Mean value of the indicator (2021)
To what extent is it important to you to have training opportunities (to learn or improve your skills and acquire new skills) at the job? (1 – very important; 2 – important; 3 – neither important nor unimportant; 4 – not important; 5 – not important at all)	1.61
To what extent are you satisfied with your current job in terms of training opportunities (to learn or improve your skills and acquire new skills)? (1 – completely satisfied; 2 – rather satisfied; 3 – neither satisfied nor dissatisfied; 4 – rather dissatisfied; 5 – very dissatisfied)	2.35

Source: Davidkov (2022a); Davidkov (2022b).

Tables 8 and 9 characterize two of the important organizational performance indicators – job security and employee training opportunities. These are presented in two sections, according to the respondents' assessment of their *significance* (value) and *satisfaction* with their current job (with the current organization). In order to understand the attitude of people in the organization to a specific factor (therefore – how this factor affects them), it is not enough to limit the analysis only to the significance attributed to it. Comparing the significance with the assessment of its actual state guides a better understanding of the motivational potential of a specific factor. In the general case, it is assumed that the absence of a substantial difference between the significance and the level of satisfaction with a specific factor can be interpreted as the absence of a significant motivational potential (Davidkov, Gourbalova, 2018; Davidkov, Vedar, Petkova-Gourbalova, Mihaylova, 2021). The presence of a substantial difference indicates greater motivational potential.

According to the framework thus outlined, the analysis of the two results may be summarized as follows:

- There are grounds to argue that *employee training* (here viewed as an element of organizational performance) is more valuable to employees than *job security*. The formal basis is the comparison of the attributed significance of the two outcomes (job security – 1.81, see Table 8; employee training – 1.61, see Table 9). The logic of the response scales

suggests the following: the closer to 0.00 the mean value of a given indicator, the higher the significance attributed to it; the closer to 5.00 – the weaker its significance.

- The difference between the mean values of *job security* indicators (Table 8) is 0.32; the difference between the mean values of the *employee training* indicators (Table 9) is 0.74. This underpins the argument that the organizational outcome of *employee training* contains a stronger motivational potential (providing appropriate training opportunities to employees boosts motivation).

## 5. Conclusion

This article aims to deepen the understanding of transformational leadership by formulating the following research question: what the influence of transformational leadership on adaptability and organizational performance is.

The approach applied to answering the research question combines empirical data from research on the relationship between the three variables with a series of studies on national and organizational cultures in Bulgaria. This allows the cultural and behavioural context to be problematized. Thus, the results of the presented studies are complemented to better outline and interpret specific conditions and interdependencies. As a result, several conclusions and directions for future research may be outlined.

First, the main narrative confirms the two hypotheses. Transformational leadership directly and positively influences adaptability. The analysis of a sample in Bulgaria supports previous research that links transformational leadership with innovation, change, and adaptability in a dynamic environment, as well as with a culture that promotes learning in the organization (Nemanich, Vera, 2009). Jansen, Vera and Crossan (2009) show empirically that transformational leadership can significantly contribute to creative thinking and the pursuit of exploration strategies. Transformational leadership directly and positively affects organizational performance. Such a relationship also supports previous research (Judge, Piccolo, 2004; Lord, Day, Zaccaro, Avolio, Eagly, 2017). Several studies have examined leadership styles and their relationship to balancing the two elements of organizational ambidexterity – exploration and exploitation – in other national contexts (Jansen, Vera, Crossan, 2009; Nemanich, Vera, 2009). As the results presented here for the Bulgarian context consider only one of the elements of contextual ambidexterity (adaptability), including the other element (alignment) in future research would enrich the understanding of these variables and their relationship.

Second, the results presented show that for the covered sample in Bulgaria, high values are observed for all three investigated variables – transformational leadership, adaptability, and organizational performance. Some of the indicators used are interpreted through similar ones from the related narrative (a series of observations on behavioural and cultural features in organizations in Bulgaria, see Davidkov, 2019). A unidirectional and sustainable trend over the years (1995-2021) is recorded for the transformational leadership indicator *Care for employee development* – it strengthens and stabilizes at a relatively high level. The types of observed and preferred leadership behaviours are also markedly persistent over a long period

of time, as well as the high level of Power Distance Index (and authoritarian leadership behaviours). This raises further questions about the relationship between the observed high values of authoritarianism on the one hand, and transformational leadership on the other. A deeper examination of the specific mechanisms by which leaders and teams interact, the decision-making process, and the leadership practices that are effective and ineffective would help to clarify these observations.

The uncritical following of rules by organizational members weakens over the observed period presented in the related narrative (1995-2021) at the expense of strengthening the tendency to search for alternative solutions. Attitudes toward rules can be interpreted through an understanding of personal, group, and organizational interests and their hierarchy. The conditional attitude toward rules is associated with lower values of the Uncertainty Avoidance Index; a relationship with adaptability in the organization can be explored.

Interpreting organizational performance through cultural and behavioural observations covers two of these outcomes – employee training and job security (in the workplace). There is reason to argue that training is more valuable to employees than job security; as well as that training contains a stronger motivational potential.

These conclusions are obtained through a related interpretation of two separate sets of empirical data. The integration of cultural and behavioural aspects in the methodology of future research would help to interpret empirical results in a more thorough way. This article finds support for the proposition that leadership behaviour is value- and culturally determined. Understanding the extent to which national and organizational cultures establish, predetermine the context in which transformational leadership and organizational adaptability unfold would allow more definitive conclusions on the observed variables. This could enable the formulation of recommendations better targeted to organizations operating in the Bulgarian national context – and culture.

The fourth direction for future research also relates to the formulation of recommendations. Replicating such research at an organizational level would enable profiling of successful and less successful organizations, and thus serve to draw conclusions about which behaviours and practices are effective and applicable in the Bulgarian cultural context.

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## DCF VALUATION: THE INTERRELATION BETWEEN THE DYNAMICS OF OPERATING REVENUE AND GROSS INVESTMENTS<sup>3</sup>

*The current research paper explores some key aspects of the application of the DCF enterprise valuation. This paper presents the second part of a broader study by the authors, which is focused on the analysis of key input variables, predetermining the amount of free operating cash flows as an important part of the application of DCF valuation models. Here are the most serious prerequisites for deviation of forecasts from reality, which often leads to a significant distortion of the final valuations of enterprises. This provokes the research on the interdependence between the five main input variables and especially between operating revenue on the one hand, and the different expenditure groups, on the other hand, is required. In the first part of this research, the relationship between operating revenue and operating expenditures was investigated. In the present research paper, the relationship between operating revenue and gross investment expenditures is investigated, including the increase in net operating working capital and capital expenditures. The research was again carried out on the basis of aggregated data for all non-financial enterprises in Bulgaria for the period 2008-2020. The results are generally ambiguous, but in the medium and long term, at least for some of the largest sectors explored, relatively representative and sustainable averages are established for the relative share of net operating working capital and capital expenditures to revenues. There are no strong arguments against forecasting gross investment costs based on their historical averages as a percentage of operating revenue.*

*Keywords: company valuation; DCF enterprise valuation model; net operating working capital; capital expenditures; operating free cash flows*  
*JEL: G30; G32*

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## Introduction

One of the main difficulties in evaluating enterprises is that none of the known and used approaches and methods are good and reliable enough. Each of them has its weaknesses and shortcomings, which reduces confidence in the final result. This requires a more in-depth study of the individual components of the various valuation methods, or at least of those perceived as the most promising. The DCF enterprise valuation model is traditionally considered to be such, which only emphasizes the *relevance* of the present study.

*The purpose* of the study is to verify and possibly improve the reliability of forecasting future free operating cash flows, based on publicly available data from the financial statements of companies. *The object* of the study is the DCF enterprise valuation model. *The subject* of the research is the determination of the future free operating cash flows. In the first part of the broader research of the authors, the emphasis was on the dependence between the *dynamics of operating revenue and operating expenses* (Nenkov, Hristozov, 2022). In the present study, the emphasis is on the dependence between the *dynamics of operating revenue and investment expenditures of the enterprise*.

*The main hypothesis* of this research paper is that there is a significant interdependence between the *dynamics of operating revenue and investment expenditures of the enterprise*, which should be used in forecasting future operating free cash flows (FCFF) within the application of the DCF enterprise valuation model.

### 1. Basic Problems of Determining the Value of Companies

Generally speaking, the main reason for the difficulty in determining the true value of companies is that it is hidden and invisible. What is usually visible and clear is the acquisition price of the respective enterprise, but it is something different. According to Benjamin Graham and Warren Buffett, "*Price* is what you pay, *value* is what you get" (Graham, 2006; Morris, 2009). Precisely in this connection, Iliya Guevski quotes the often-used aphorism: "Accounting specialists know the price of every asset, but they do not know the value of any of them" (Guevski, 2001). The first – the price (of acquisition) should be perceived as an *investment expense (investment cost) of the acquisition project*, and the second should be perceived as the *value of the acquired assets* (Nenkov, 2005).

In this regard, the attempts of leading authorities in this field to bring order and clarity on this are numerous. The various associations and other organizational structures of professional business appraisers have made and continue to make serious efforts to clarify the category of "value", and what should be looked for and determined in the valuation of businesses and other assets. This is most often done along the lines of business valuation standards, developed by these organizations and in particular in their "standards of value" section. The problem is that a unified and generally accepted concept is never reached. In the different valuation standards, in the valuation and in the judicial practice, different concepts related to value are used. The set of specific variants (dimensions) of "value", used by practitioners in the field of business valuation, is relatively wide (International Valuation Standards Committee, 2001; The European Group of Valuers' Associations (TEGOVA)), including:

- Fair market value;
- Fair value;
- Investment value;
- Intrinsic value;
- Going-concern value;
- Liquidation value;
- Book value.

According to an impressive body of eminent valuation experts in the US and Canada, led by James Hitchner, “The five primary standards of value are:

- Fair market value – FMV;
- Investment value;
- Intrinsic value;
- Fair value/state rights;
- Fair value /financial reporting/" (Hitchner, 2017).

U.S. Treasury regulations define *fair market value* as "the price at which the property would pass from the hands of a willing seller to the hands of a willing buyer where neither is forced to sell or buy and both have sufficient knowledge of the material facts" (Hitchner, 2017). Thus, the fair market value for tax purposes assumes a hypothetical willing buyer and a hypothetical willing seller.

In contrast, *investment value* is associated with a specific buyer or seller and with the characteristics that the buyer or seller brings to the transaction. The International Glossary defines investment value as "the value for a particular investor, based on his individual investment requirements and expectations". Each of the various potential investors competing to buy the same company usually offers a quite different price, because, for each of them, the respective price reflects their individual views of the prospects and synergies that that buyer associates with the particular deal. The investment value also normally reflects the level of risk from the perspective of the particular investor, rather than from the perspective of the market as a whole (Hitchner, 2017).

According to Hitchner, *intrinsic value* is based on the fundamental analysis of companies, especially public ones. This is the value most often taught in finance courses and is the basis of finance textbooks. Intrinsic value is also defined as the "*true*" or "*actual*" value, which is calculated based on the available facts. It is often called a "*fundamental*" value. It is actually an analytical judgment of value that is based on the inherent characteristics of the investment in question (rather than its characteristics according to a particular investor). According to Hitchner, intrinsic value is not often applied to private companies (Hitchner, 2017).

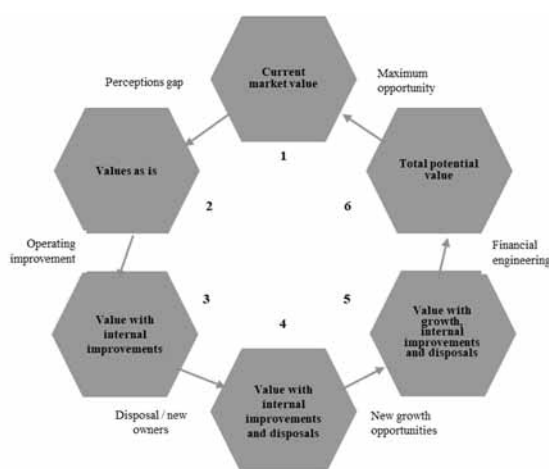
*Fair value (state law)* is the standard of value for actions by the relevant states, such as in rights disputes or shareholder oppression court cases. In most states, the *fair value standard* is associated with *fair market value*, but without the discounts for lack of control and lack of liquidity. According to an interpretation published by the American Bar Association, "*fair*

*value* is the value of the shares immediately before the corporate action to which the shareholder objects, excluding any appreciation or depreciation pending the corporate action, unless the exclusion would be unfair” (Hitchner, 2017).

*Fair value (financial reporting)* is the value standard for financial reporting purposes according to Accounting Standards Codification (ASC). The latter was issued by the Financial Accounting Standards Committee. According to ASC 820, “*fair value* is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the determination date”. Fair value for financial reporting purposes is often equated with fair market value. However, in certain situations, such as buying a business, the fair value of a company or part of a company also includes synergies from a transaction, if any. In such cases, the purchase price approximates investment value more closely than fair market value or fair value (Hitchner, 2017).

It is logical to ask the question of which of the above values is correct. In the context of the specifics discussed and the difficulties in finding the actual value, it may turn out that any of the above values are correct. Copeland, Murrin and Koller present the so-called hexagon of restructuring, which actually demonstrates this diversity of perceptions about the value of the company at the same time (Copeland, Murrin, Koller, 2000). Their goal is to analyze the company from the point of view of value management, and more precisely, its management for value creation. The hexagon figure shows the company's potential in this regard (Figure 1).

**Figure 1. Restructuring Hexagon**



Source: Copeland, T., Koller, T., Murrin, J., 2000, *Valuation – Measuring and Managing the Value of Companies*, John Wiley & Sons, New York.

At the same time, however, this hexagon demonstrates something very important and useful to analysts and appraisers of any public company's stock. It shows how, in relation to the same company, at the same time, there are quite a number of different perceptions of its

value. This logic is completely compatible with the fact that the considered standards of value are quite few in number and are often mixed with each other.

Instead of being in the place of the CEO of the company (as in the analysis of Copeland, Murrin and Koller), we can put ourselves in the place of a potential candidate to acquire the company in question. The visible value of the company (Figure 1) is *the current market value* (1). This is actually the market price of one share of stock or, alternatively, the market capitalization of the company (market price per share times the number of common shares outstanding). This is the value that the market sees at the moment.

At the same time, however, a parallel valuation of the company, by means of a set of valuation methods and models, may show another, higher value (so we assume in this case) – this is *the value of the company as is* (2). This value may have been obtained through DCF valuation models, comparative valuation methods, or otherwise. This assessment should assume that the company will continue to function as before, without any changes in management and efficiency. Accordingly, the forecasting of future cash flows is based on these assumptions. If the assessment is correct, then it turns out that the company is undervalued by the market. There is a discrepancy in the perceptions regarding the value (perceptions gap) – (2-1).

The possible differences and discrepancies do not stop there. In practice, every company has opportunities for internal improvements that lead to an increase in its value. In the overwhelming majority of cases, so-called strategic investors intend to take advantage of these opportunities and take this into account when trying to predict the value of the company after a possible acquisition. This is how we arrive at the *value after internal operating improvements* (3) and the next difference – (3-2).

The value of the same company can be further increased by shedding underperforming businesses, which is a more radical step and is most often undertaken after a change of ownership. This is how value is arrived at *after internal improvements and disposals* – (4). This in turn leads to new growth opportunities to arrive at *value through growth, internal improvements and disposals* – (5). In such an improved company, the possibilities of financial engineering can be used to further increase the value, for example through hedging, better matching of incoming and outgoing cash flows and risk reduction. This contributes to a reduction in the cost of capital and the discount rate, and hence to an increase in the calculated intrinsic value. This is how we arrive at the *overall potential value* – (6).

The difference between this *total potential value* (6) and *the current market value* (1) can be extremely large at times – (6-1). It expresses *the maximum possibility* of achieving additional value for a strategic investor who succeeds in acquiring the company in question at its current market price. The opportunities for such an increase in the value of poorly managed companies are most significant, which is why they are also among the most desirable takeover targets. These opportunities are more limited in well-managed businesses, for the simple reason that in them a large part of the considered opportunities for improvement have already been realized.

Logically, the question arises as to which of the six considered values should be correct. In fact, any one of them may be correct for the needs of the particular evaluation, depending on what the task before the appraiser is and what the resulting assumptions are. If one is looking

for a fair value of the company as it is now, then value (2) seems most appropriate. However, a potential buyer may need to know what additional value they could achieve after various improvements. Thus, 3, 4, 5 and 6 above should all correspond to the *investment value standard*. At the same time, each of the values 2, 3, 4, 5 and 6 should also be an *intrinsic value* if it is determined on the basis of fundamental analysis, i.e. based on discounted future cash flows. They should also meet the premise for a *going-concern enterprise*, given the basic assumptions underlying this example. All these multiple interpretations of the sought value often introduce additional complications for appraisers and misinterpretations regarding appropriate assumptions.

Aswath Damodaran, for his part, asks a very logical question in relation to the valuation of companies and shares: "What are we looking for – *the price* or the *value*?" (Are we pricing or valuing?) (Damodaran, 2020). It seems that the majority of investors, analysts and appraisers are not clear on this issue. And from this arise the majority of the problems in valuation, as well as the subsequent disputes. Damodaran raises this question primarily in the context of the behaviour of the various players who buy and sell shares in the capital markets and their strategies. In the authors' previous article, this division was advocated in reference to Benjamin Graham's understanding of which players should be defined as investors and which as traders and speculators (Graham, Dodd, 2009).

Damodaran draws a clear line between price and value, although he believes that the two terms are used interchangeably in both academia and practice (Damodaran, 2020). In the stock market, price on the one hand, and value, on the other, are dictated by very different driving forces. The drivers of value are: *cash flow, growth and risk*. Discounted cash flow models are most commonly used to apply the above fundamental variables, but there are also other ways to arrive at intrinsic value (Damodaran, 2019).

The forces determining stock prices are two: simpler, but more powerful – *demand and supply*. While rational investors may use only the fundamental variables in determining supply and demand, at the same time these fundamentals are drowned out in the market by the influence of sentiment and momentum. Markets are price-creating mechanisms, not value-creating mechanisms (Graham, Dodd, 2009). In this spirit, Benjamin Graham also calls them "voting machines", but not machines for determining the "weight" of the respective shares (Graham, 2006).

Damodaran's above question is important not only in relation to the motives and actions of the two main groups of buyers of shares in the market – traders and investors. It is also completely up to date in the context of the work of analysts and appraisers, in the process of valuing the shares of public and non-public enterprises and businesses. In most valuations, they are not quite clear whether they are looking for intrinsic value or are more interested in arriving at a result close to market price. Standards sometimes, instead of helping in this regard, make things even more confusing. For example, in many situations the choice of an appropriate standard of value is dictated by the circumstances, the intended use of the appraisal, the contract, the requirements of the law, or other factors. In other situations, the choice of standard of value may be clear, but the meaning of that standard is not particularly clear.

## 2. DCF Valuation Models – Key Features and Challenges

Regardless of the many classifications of methods and models for the valuation of enterprises and their common stocks, regardless of the significant number of methods and models in most of these classifications (Zukin, 1990; Damodaran, 2002; Copeland, Antikarov, 2001), the possibilities ultimately boil down to three main approaches (Nenkov, 2005). The reason for this is that there are three possible starting points for deriving the value of enterprises – assets, expected earnings and the market (Guevski, 2001). According to Hitchner, there are only three approaches to valuing any asset, business, or part of a business:

1. The income approach
2. The market approach
3. The asset approach

Again, according to him, there are no other approaches to determining value. However, there are multiple methods within each of the approaches that could be used in a single assessment (Hitchner, 2017).

An assessment should consider the possibilities of applying all three approaches, although in practice all three are rarely present together. For example, the asset-based approach is less often used in the valuation of going concern. The most common argument is that its methods do not consider the potential for future income (cash flows) and fail to value intangible assets. At the same time, the asset-based approach is very useful when valuing businesses that are before closing down or have ceased operations and are in liquidation.

A major advantage of *the income-based approach* is that its methods directly target the very sources of value of the assets being appraised – the future income they will bring. This is by no means accidental. According to Hitchner, value looks to the future. “Although historical information is required to determine value, its main driver is expected future benefits. What investors are buying are tomorrow's cash flows, not yesterday's, not today's (Hitchner, 2017). Therefore, when the precondition of value is "going concern", the methods and models of this approach are among the most used.

The main objections to this approach are in relation to the need to predict future cash flows and then bring them to present value by means of discounting. Both processes are subject to a number of subjective assumptions and related possible deviations from reality. These disadvantages of income methods are particularly pronounced in conditions of high inflation and uncertainty.

The two main methods within this approach are *the Discounted Cash Flow Method* and *the Income Capitalization Method*. Both methods are designed to determine the present value of the expected future income (cash flows) from the operation of the assessed enterprise. In modern practice, both methods are applied in combination, by means of a set of specific models. They can be classified into two main groups (Reilly, Brown, 2003; Koller, Goedhart, Wessels, 2015):



- **DCF models for direct equity valuation:**
  - Dividend discounted model (DDM) and
  - DCF equity valuation model.
- **DCF models for enterprise-wide valuation:**
  - Adjusted present value (APV) model,
  - DCF enterprise valuation model,
  - Economic profit model (Extra return model).

*The DCF enterprise valuation model* is based on the assumption of a going concern, i.e. that the evaluated companies will continue their operations in the future, ideally until infinity. According to various studies, it is one of the most widely used assessment models (Bancel, Mittoo, 2014), along with relative valuation methods (Fernandez, 2019). As its name suggests, it is used to determine the value of the enterprise as a whole. Since the bearer of this value are its assets, the model actually determines the value of the assets. In other words, this model determines the value resulting from the activity of the enterprise, or the so-called value entire enterprise value, which belongs to the two main groups of investors in the same enterprise – owners (shareholders) and creditors. The second group includes the holders of the company's interest-bearing debt. Once the value of the entire enterprise resulting from its activity has been determined, the model makes it possible to determine the value of equity by subtracting the value of interest-bearing debt and some other liabilities, such as the value of preferred shares (Pinto, Henry, Robinson, Stowe, 2010). Thus, it becomes clear what price is worth paying for the equity capital as a whole, for one ordinary share, respectively for the majority package, giving the right to actual management of the company's assets (O'Brien, 2003).

The model is based on the future expected free operating cash flows (free cash flows to the firm – FCFF) and their discounting to the present. *The operating value* of an enterprise is defined as the sum of the company's discounted operating free cash flows (FCFF). To this value is added the value of *non-operating assets* to obtain the value of the enterprise as a whole. From it the value of the interest-bearing debt is deducted to arrive at the value of equity, and subsequently the value of a share of common stock (Nenkov, 2015).

The application of the DCF enterprise valuation model goes through several phases, but the most problematic and challenging are two of them (Patena, 2011):

- Determination of expected free operating cash flows and
- Determining the discount rate for these cash flows.

These two components of the DCF enterprise model are usually the most heavily contested. They are the most labour-intensive and the most challenging. From these two components come the biggest possible deviations in the final result. According to Pablo Fernandez and Andrada Bilan the most frequent omissions and errors in the application of DCF models are also related to them (Fernandez, Andrada Bilan, 2007). The present study is focused only on

part of the problems related to the determination of the expected free operating cash flows to the firm (FCFF).

The scheme for determining the free operating cash flow for the firm (FCFF) is presented in Table 1. It is clear from the table that the free cash flow for each year is a residual value. It is obtained by successively deducting different types of expenses from the revenue from the company's operations. First, the costs operating costs without depreciation are deducted. Then, in a separate order, depreciation is deducted as a more specific type of expense. The latter are only accounting expenses, non-cash expenses (Pinto, Henry, Robinson, Stowe, 2010), or the so-called quasi-expenditure. At the next stage, one fiscal expense is charged and deducted – this is the corporate tax (line 6 of the scheme).

**Table 1. Simple scheme for determining the Operating free cash flow (FCFF)**

Row	Position
1.	Operating revenue
2.	– Operating expenditures (less D&A)
3.	= EBITDA (Earnings before interest, tax, depreciation and amortization)
4.	– Depreciation and amortization (D&A)
5.	= <b>EBIT (Operating profit before tax)</b>
6.	– Corporate tax (on EBIT)
7.	= <b>Net operating profit after tax (NOPAT)</b>
8.	+ Depreciation and amortization (D&A)
9.	= <b>Gross cash flow (r.7 + r.8)</b>
10.	Increase of Net Operating Working Capital (NOWC)
11.	+ Capital expenditures (investments in non-current assets)
12.	= <b>Gross investments (r.10 + r.11)</b>
13.	= <b>Operating free cash flow (FCFF) (r.9 – r.12)</b>

*Source: authors' interpretation.*

This is how we arrive at one of the key financial indicators – the company's net operating profit (NOPAT) – row 7 of the scheme. NOPAT, along with depreciation and amortization, form gross cash flow, which is commonly referred to as operating cash flow. NOPAT and depreciation are the two internal sources of funding for new investments in the business.

In order to arrive at the free operating cash flow, it is necessary to subtract the investment costs in the activity for the relevant year. This necessity stems from the basic presumption for applying the DCF enterprise model – the going concern presumption. It means that the enterprise is projected to continue operating and generating cash flows long enough into the future, ideally indefinitely. This implies that the enterprise will continue to be competitive, develop and modernize. For this purpose, the necessary investments will have to be made and therefore such costs are foreseen within the framework of the model. The estimated gross investments are on line 12 of the scheme and are the sum of two types of investment costs:

- Increase in net operating working capital – NOWC (line 10). The increase is the result of investing in current (short-term) operating assets;
- Capital expenditure (line 11). These are investments to acquire non-current assets.

After subtracting the gross investments from the gross cash flow, the free operating cash flows for the relevant year (FCFF) are obtained on line 13.

As it turns out, forecasting future free operating cash flows is one of the two biggest challenges in applying the DCF enterprise valuation model. For this purpose, it starts with an analysis of the assessed enterprise in historical terms. A major source of data is the company's annual financial statements – at least five, ten or more years back (Penman, 2013; Barker, 2001). Most important are *The Comprehensive Income Statement (CIS)* and the *Balance Sheet (The Statement on Financial Position)*. A qualitative analysis of the data in them shows very well the performance of the company in the past and makes it possible to make reliable predictions about future revenue and expenses. Modern DCF valuation models are tailored to operate on this publicly available information (Palepu, Healy, 2012).

From the scheme for determining free operating cash flow (FCFF), it can be seen that the quantities required for forecasting are five in number:

- Operating revenue;
- Operating expenses (excluding depreciation);
- Depreciation;
- Increase in net operating working capital;
- Capital expenditure.

The five variables are not completely independent, they are bound in a certain way to each other. Projecting each one on its own inevitably leads to illogical future values and distorted free cash flows. This, in turn, leads to a highly distorted valuation of the enterprise.

The most important point here is to be logically consistent. For this purpose, it is important to study and know the dependencies between the individual input variables. This is one of the main tasks in the present study. Thus, for example, maintaining the high competitiveness of the enterprise during the years of the explicit forecast period and after that will also require investments of adequate amounts. This is also a decisive factor for the projected future revenues, including their growth rate. The same goes for the future profit margin. If we are making more intensive investments in the activity, this means that the revenue and profit margin in turn should also increase, and vice versa.

Oftentimes, in order to obtain a higher operating value, the projected capital expenditure or increase in working capital is minimized. Conversely, grossly understated valuations result when these investment costs are inflated beyond what is normally necessary. Here we are talking not only about unconscious gaps in forecasts, but also about cases of conscious manipulation of the amount of these costs. The reason is that accurately forecasting capital expenditures and growth in net operating working capital is a matter of increased difficulty (Nenkov, 2017).

One of the ways used to make the forecasts of the 5 input variables is by "tying" the four types of expenses to the operating revenue. Thus, only one growth rate is predicted – that of revenues. For this purpose, it is necessary to express each of the types of expenses as a percentage of revenues. This is usually done on the basis of the average relative share of the

respective expense to the revenue in historical terms. This is one of the important aspects where the analysis of financial statements over a longer historical period is very useful. It would be even more useful to have information on how the respective types of expenses correlate with revenues based on a wider sample of companies, for example for the sector as a whole.

In the mentioned previous scientific work of the authors, the relationship between the dynamics of operating revenue, on the one hand, and operating expenses, on the other hand, was investigated (Nenkov, Hristozov, 2022). In the empirical part of the present study, *the relationship between the dynamics of operating revenue, on the one hand, and the dynamics of each of the two components of gross investments, on the other hand, is investigated*.

Unlike operating expenses, the two components of gross investment – increase in net operating working capital and capital expenditures, are not directly visible on the Income Statement or Balance Sheet. It is necessary for the analyst to determine them on the basis of other items in the reports.

***Determining the annual increase of net operating working capital (NOWC):***

To calculate the change in NOWC, it is first necessary to forecast the value of NOWC by year. Net working capital (NWC) generally represents the difference between current assets (CA) and current liabilities (CL) on the balance sheet, i.e.:

$$\text{NWC} = \text{CA} - \text{CL} \quad (1)$$

With DCF valuation models, however, it is only about *net operating working capital (NOWC)*, i.e. only for that part of the NWC that is invested in the company's operations (operating assets). In other words, NOWC does not include current financial assets. There is another difference from the traditional understanding of net working capital. It is that NOWC is not only associated with long-term sources of capital, but also includes current interest-bearing sources of financing. For these reasons, as already explained, NOWC equals operating current assets less current (short-term) non-interest-bearing liabilities, i.e.:

$$\begin{aligned} \text{NOWC} &= \text{Operating CA} - \text{Non-interest-bearing CL} = \\ &= (\text{CA} - \text{Current financial assets}) - (\text{CL} - \text{Current interest-bearing debt}) \end{aligned} \quad (2)$$

In this way, on the basis of the data in the annual balance sheets, the amount of NOWC for each year is determined. According to the formulas of some of the leading authors in the field of DCF models, financial assets should be fully deducted when determining the NOWC, including the entire amount of cash. According to other authors, only so-called "excess" funds should be deducted from cash, i.e. the cash not needed to operate the business (Copeland, Koller, Murrin, 2000). This is more justified, since there should always be a certain minimum amount of operating cash in the operating current assets to ensure the normal circulation of the current assets. Cash above this amount is practically not necessary for everyday operations and becomes non-operating financial assets. However, in most cases, the full amount of cash is deducted as part of current financial assets.

The growth of NOWC over the years, which enters as part of gross investment, is obtained as follows:

$$\Delta \text{NOWC}_{2022} = \text{NOWC}_{2022} - \text{NOWC}_{2021} \quad (3)$$

This is the procedure for determining the growth of the NOWC for each individual year, for the purposes of determining the amount of gross investments. This will not be necessary in the present study, as the annual revenues are to be compared with the annual NOWC amounts.

***Determining the annual amount of capital expenditures (CAPEX):***

*Capital expenditures* are the fifth important input variable on which free operating cash flows directly depend. Anticipating and making adequate capital expenditures is key to maintaining and even increasing the future competitiveness of the enterprise. For the purposes of this valuation model, capital expenditure for year 'X' can most easily be determined as the book value of assets for this year 'X', minus the book value of assets for the previous year 'X-1', plus the depreciation for year "X". So, for example, for 2022, things will look like this:

$$\begin{aligned} \text{CAPITAL EXPENDITURES}_{2022} & \quad (4) \\ = & \text{NON-CURRENT ASSETS}_{2022} (\text{Book value}) - \\ & - \text{NON-CURRENT ASSETS}_{2021} (\text{Balance value}) + \text{AMORTIZATION}_{2022} \end{aligned}$$

For this purpose, the balance sheet value of the assets is taken from the Statement of Financial Position (Balance Sheet), and depreciation from the Income Statement. If in the relevant year there is neither acquisition of new, nor liquidation of old non-current assets, the result according to the above formula will be zero.

Using the averages of NOWC and capex is appropriate for making future projections but should be applied with caution given some influencing factors, the same applies to free cash flow forecasting. Market and industry factors, business cycles or other company-specific factors may have an impact. From the point of view of individual economic branches, the situation also differs. In this regard, it is good to supplement the forecasts with an analysis of the current market conditions, the specifics of the sector and expectations for the economic situation in the given region. The authors aim to refine these predictions.

### **3. Empirical Study of the Relationship between the Dynamics of Operating Revenue and the Dynamics of Gross Investments of Enterprises in Bulgaria**

This empirical study is made in connection with the above approach of “tying” each of the four groups of expenditures to revenue, while trying to make projections of future operating free cash flows to the firm (FCFF). The main objective is to analyze the relationship between the dynamics of operating revenues, on the one hand, and the dynamics of gross investment expenditures, on the other hand. The study is made using a broad database for all non-financial corporations (NFC) in Bulgaria. The database is prepared annually by the National Institute of Statistics (NIS) of the country, and previous studies in the field of financial management indicate that it is extremely appropriate and useful for this purpose (Hristozov, 2021). The database itself includes the annual aggregate Comprehensive Income Statements and the aggregate Balance Sheets (Statements of Financial Position) by sectors of non-

financial corporations in Bulgaria, for the period 2008-2020. In this database, all non-financial corporations in the country are grouped into 17 sectors – from A to S (not including K and O, which are financial). The 17 sectors are in accordance with the national classification, and are as follows:

- A. Agriculture, Forestry and Fisheries
- B. Mining Industry
- C. Manufacturing Industry
- D. Energy (Production and Distribution of Electricity and Heat, and Gaseous Fuels)
- E. Water Supply, Sewerage, Waste Management and Remediation Activities
- F. Construction
- G. Trade; Repair of Motor Vehicles and Motorcycles
- H. Transport, Warehousing and Postal Services
- I. Hotels and Restaurants
- J. Creation and Dissemination of Creative Products; Telecommunications
- L. Real Estate Operations
- M. Professional Activities and Research
- N. Administrative and Support Service Activities
- P. Education
- Q. Human Health and Social Work
- R. Culture, Sport and Entertainment
- S. Other Activities

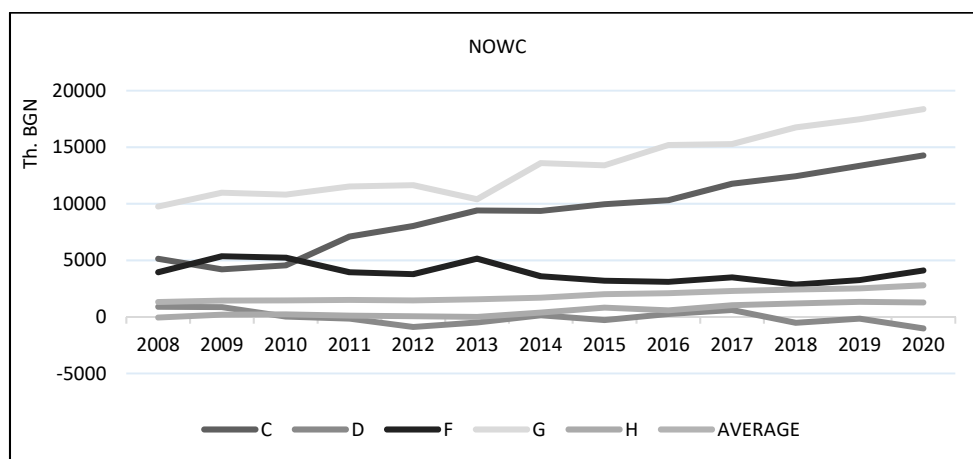
Considering that the study is related to the application of DCF models to the valuation of businesses, it is important to note that some of the sectors include institutions that are not business structures. This applies mostly to sectors M to S. The organization of these types of activities suggests that they are mainly concentrated in public institutions or in other non-business structures. The analysis is anyway focused only on the 5 largest business sectors according to their total turnover. These are: sector G (Trade; +), followed by sector C (Manufacturing), sector F (Construction), sector H (Transport, +), sector D (Energy).

### *3.1. Investigation of the dynamics of net operating working capital (NOWC) as a relative share of operating revenue*

Figure 2 illustrates the dynamics of net operating working capital (NOWC) in the five largest sectors – G, C, F, H, D. It should be noted that the number of enterprises in the database has grown over the years, including for those 5 sectors. This distorts the picture of the actual growth of the companies' revenue and NOWC in absolute terms. However, in this case, the

behaviour of these two indicators relative to each other is of interest. It is logical to assume that the changing number of enterprises in the sample similarly affects both indicators, so that possible distortions should neutralize each other.

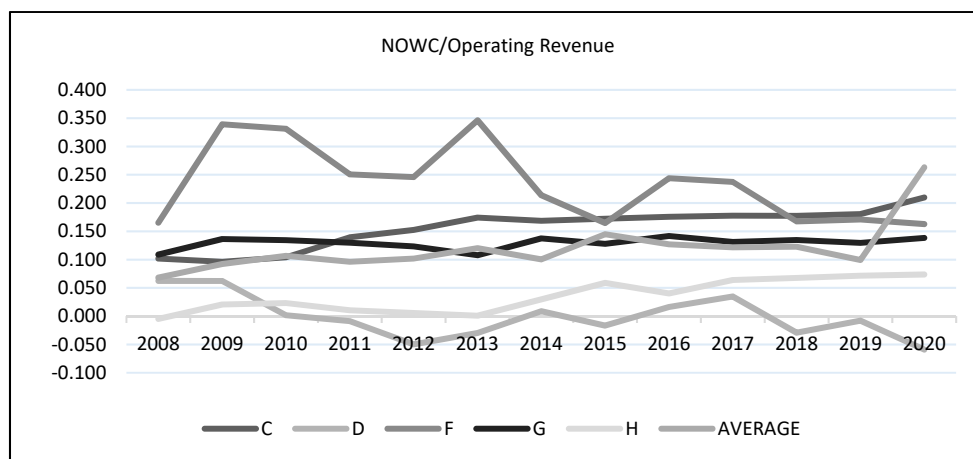
**Figure 2. Dynamics of NOWC in the 5 largest sectors (2008-2020)**



Source: NSI, calculations of the authors.

Figure 2 shows a great diversity of the dynamics of NOWCs in absolute terms by sector, with some showing an upward trend – in sectors G (trade), C (manufacturing industry), H (transport +). At the same time, in sectors D (energy) and F (construction), the trend is rather flat or slightly downward. It is clear that the size of NOWCs moves in different ways, and the differences by sector are often very strong. On this basis, it is difficult to look for any general characteristics and indicators to be used as benchmarks. This can be explained by the multiple factors that affect the size of the NOOC in the short, medium and long term. For example, it depends in particular on the applied policy of financing current assets (Taseva-Petkova, 2021). From the formula for determining the NOWC shown in the previous point, it is clear that it is a residual value and is obtained by subtracting the non-interest-bearing current liabilities from the operating current assets. It is an expression of that part of the capital invested in the enterprise, which is directed into current operating assets. If the firm finances these current assets primarily through invested capital (equity + interest-bearing debt), then NOWC will be larger. If, on the other hand, the company finances the same current assets primarily at the expense of current liabilities (non-interest-bearing) to suppliers, to personnel and others, then the NOWC will be a smaller amount. Thus, the dynamics of NOWC are largely predetermined by the short-term financing policy followed, and it is individual for each company. An important feature of the studied period is that during a large part of it, and especially in the first years after the global financial crisis, intercompany indebtedness in Bulgaria reached record-high values. Accounts payable became the main source of financing current assets for the majority of companies in the country (Taseva, 2019).

**Figure 3. Five sectors: NOWC as a relative share of operating revenue**



Source: NSI, calculations of the authors.

Figure 3 illustrates how NOWC changed as a relative share of the operating revenue of the 5 largest sectors over the observed period 2008-2020. An important fact in this particular analysis is that the observed period (2008-2020) begins with the years of the global financial crisis and ends with the crisis caused by the COVID-19 pandemic. The significant differentiation in terms of the needed working capital (working capital requirements) of the enterprises from the various sectors, for the production and realization of a unit of production, is striking. The share of NOWCs is highest in sector F (construction), which ranges widely from about 15% to 35%, followed by that of sector C (manufacturing), which ranges between 9.6% and 21%. It is followed by sector G (trade) with a range between 10.8% and 14.2%. The lowest percentage of NOWC is in sector D (energy), which hovers around 0.1% (Table 2). Figure 3 also shows the average value by year for all 17 non-financial sectors – it is illustrated by the dotted line. If we exclude two crisis years (the first and the last of the period), the average relative share of NOWC of revenue moves in a narrow range – between 10% and 15%, with the average for the entire period being **12%**. This number can be taken as an indicator of the required NOWC on average for the economy as a whole. On average, for the 17 non-financial sectors, the trend is rather horizontal in terms of the share of NOWC, if the crisis years at the beginning and end are excluded.

The exact NOWC values by year for each of the five sectors are best seen in Table 2. The trends for the individual sectors observed are best illustrated in the individual sector graphs in Figures 4, 5, 6, 7 and 8, respectively. All five graphs show serious short-term fluctuations in the relative share of NOWCs to revenue. In other words, the short-term NOWC is far from following the dynamics of revenue, as should be expected in theory. The reason for such expectations is that, other things being equal, the increase in the company's operating revenue should lead to a similar increase in current operating assets, and hence in NOWC. Accordingly, in the event of a decrease in revenue, the opposite should happen. The following two things are primarily meant here under “other things being equal”: 1) the rate of turnover



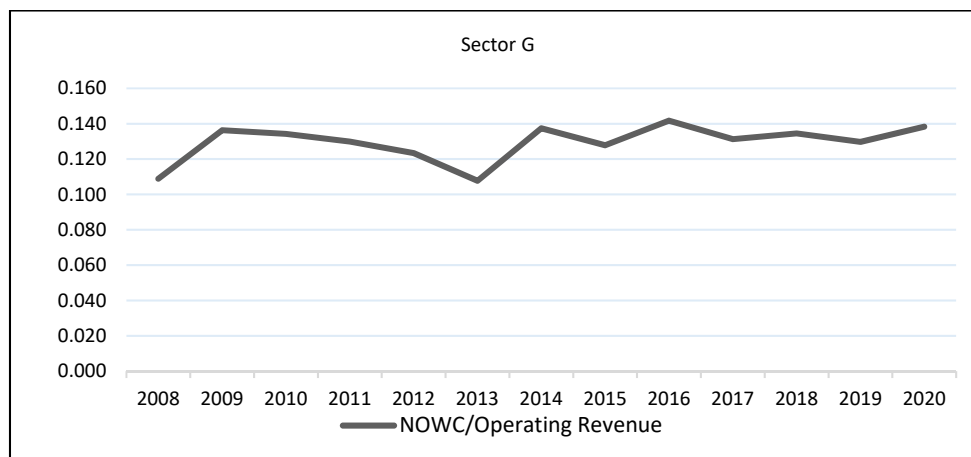
of current operating assets remains unchanged, and 2) the financing structure of current operating assets remains unchanged. Most likely, in the short term, during the observed period 2008-2020, both dimensions were characterized by serious changes, leading to a continuous change in the required NOWC.

**Table 2. NOWC as a percentage of operating revenue (2008-2020)**

Year	Sector G	Sector C	Sector F	Sector H	Sector D
2008	10.9	10.2	16.5	-0.5	6.2
2009	13.6	9.6	33.9	2.1	6.2
2010	13.4	10.4	33.1	2.3	0.2
2011	13.0	14.0	25.1	1.1	-0.9
2012	12.3	15.3	24.6	0.6	-5.0
2013	10.8	17.4	34.6	0.1	-3.0
2014	13.7	16.9	21.4	3.0	0.9
2015	12.8	17.2	16.5	5.9	-1.7
2016	14.2	17.6	24.4	4.0	1.6
2017	13.1	17.8	23.7	6.4	3.5
2018	13.5	17.7	16.8	6.7	-2.9
2019	13.0	18.1	17.1	7.2	-0.8
2020	13.8	21.0	16.3	7.4	-5.9
Average	12.9	15.6	23.4	3.6	-0.1
Minimum	10.8	9.6	16.3	-0.5	-5.9
Maximum	14.2	21.0	34.6	7.4	6.2

Source: NSI, calculations of the authors.

**Figure 4. Sector G: NOWC as a relative share of operating revenue**

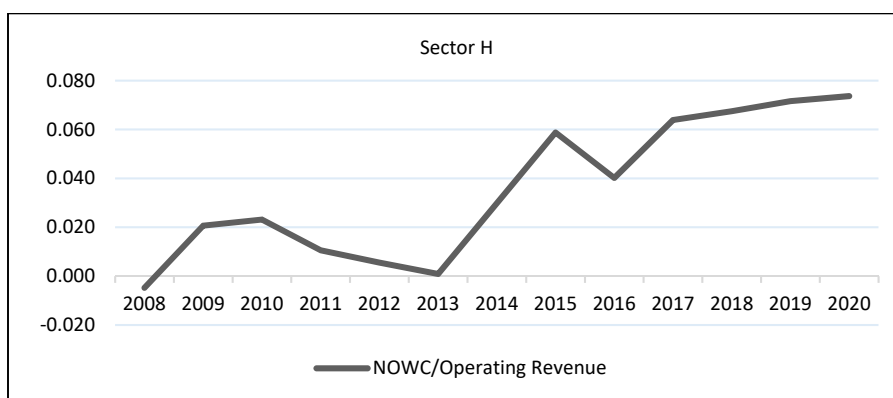


Source: NSI, calculations of the authors.

For the purposes of determining future free operating cash flows (FCFF), however, average values are used. Therefore, it is more important how the NOWC moves in relation to operating revenue in the medium and long term, i.e. as a trend – whether it gravitates towards certain average values. Figure 4 shows something similar – if the line in Figure 4 is smoothed,

it will be more horizontal like (especially if the crisis years at the beginning and end are removed). This testifies that in sector G (trade), there is a relatively stable share of NOWC compared to revenue in the medium term. Table 2 shows that the average value is 12.9%, the minimum is 10.8%, and the maximum is 14.2% (Table 2). The range in which the relative share of NOWC moves is not large – only 3.8 percentage points.

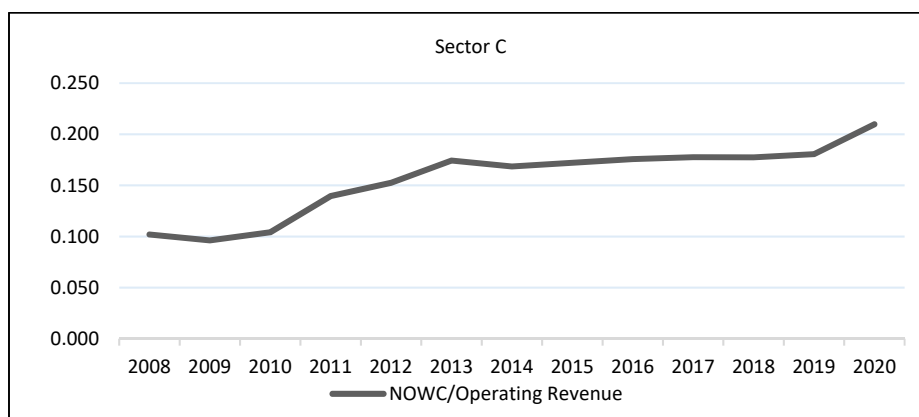
**Figure 5: Sector H: NOWC as a relative share of operating revenue**



Source: NSI, calculations of the authors.

The picture in Figure 5 (sector H) and Fig. 6 (sector C) looks quite different. Leaving aside the short-term fluctuations, there is a distinct uptrend in the relative share of NOWC to revenues in both cases. For sector H (transport +), the period started with a relative share of -0.5% and ended with 7.4%. The minimum of -0.5% is for 2008 and the maximum of 7.4% is for the last year 2020 (Table 2).

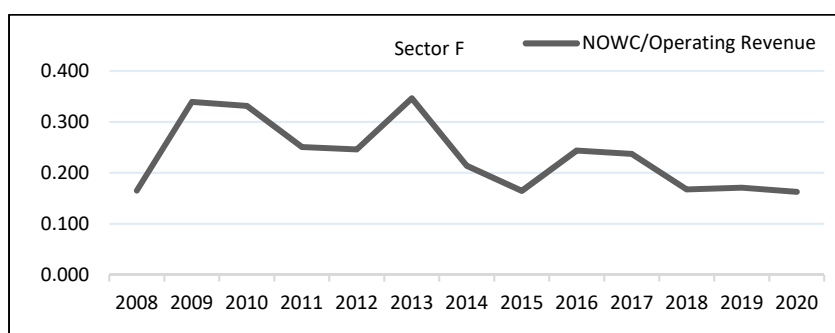
**Figure 6. Sector C: NOWC as a relative share of operating revenue**



Source: NSI, calculations of the authors.

In sector C (manufacturing), the increase was from 10.2% in 2008 to 21.0% in 2020, which is also the maximum for the period (Figure 6). The minimum of 9.6% was also at the beginning – 2009 (Table 2). The range of growth is also significant – around 11 percentage points. In this situation, the question reasonably arises where the relevant value for each of these two sectors should be sought – rather at the beginning of the period or rather at the end of the period.

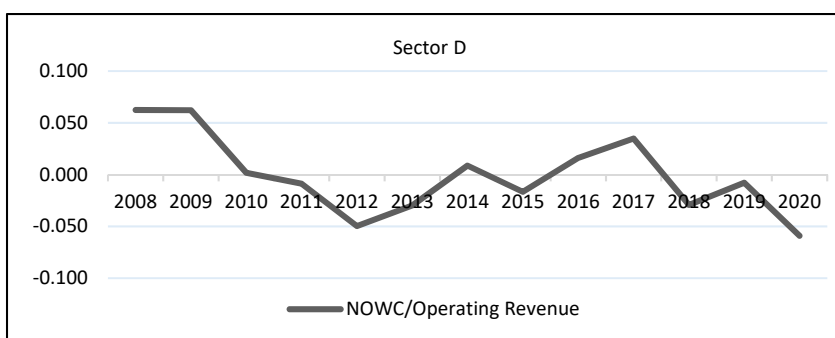
**Figure 7. Sector F: NOWC as a relative share of operating revenue**



Source: NSI, calculations of the authors.

In the next two sectors – F and D, the opposite trend is observed (Figure 7 and Figure 8) – the relative share of NOWC compared to operating revenue decreases from the beginning to the end of the period, albeit with reservations. The reservations are in relation to the crisis years – 2008 and 2009 at the beginning and 2020 at the end. Sector F (Construction) started at 16.5% in 2008 and ended at almost the same level of 16.3% in 2020, but meanwhile climbed to 33.9% in 2009 and to 34.6% in 2013 (Table 2). If only the start and end years are taken, it would appear that the value of around 16.5% is sustainable, but it is not. If the crisis years – 2008, 2009 and 2020 are removed, then a visible trend of reduction emerges, and a significant one at that. For Sector D (Energy), the trend also appears to be downward on an all-year basis. But if the crisis years in question are removed, a more horizontal trend will emerge, with the share of NOWCs fluctuating around zero.

**Figure 8. Sector D: NOWC as a relative share of operating revenue**



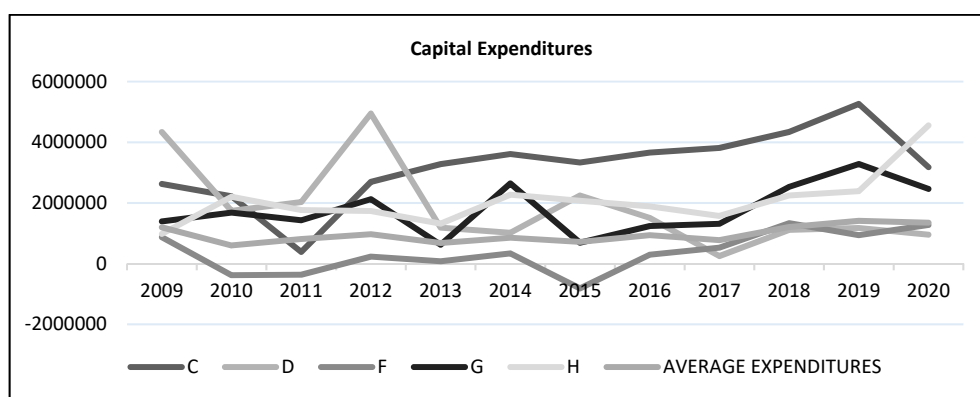
Source: NSI, calculations of the authors

### 3.2. Investigation of the dynamics of capital expenditures (CAPEX) as a relative share of operating revenue

The explored period in terms of the dynamics of capital expenditures is one year shorter than that of the NOWC analysis – it starts from 2009. The reason is the way of deriving the amount of annual capital expenditures from the financial statements. To determine them, the balance sheet value of non-current assets from the previous year is required. The earliest year in the database is 2008, so the first year for which capital expenditure can be determined is 2009.

The dynamics of capital expenditures (CAPEX) in absolute terms in the five largest sectors – G, C, F, H, D, is shown in Fig. 10. The volume of total capital expenditure incurred in each of the sectors varies very markedly from year to year. No general trend is observed. Clearly, capital expenditure during the period was influenced by a number of short-term factors that affected different sectors of the economy differently. The figure also shows the average value by year for all 17 non-financial sectors (dotted line).

**Figure 9. Dynamics of CAPEX in the 5 largest sectors (2009-2020)**



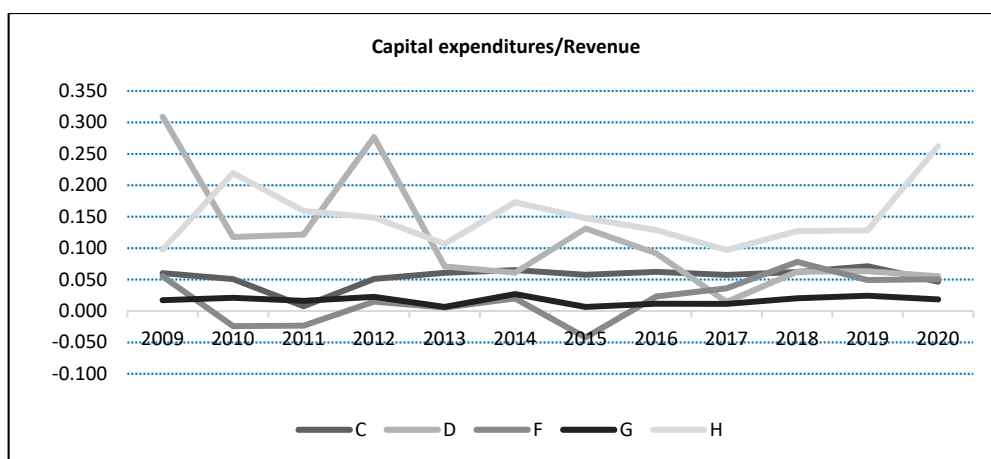
Source: NSI, calculations of the authors.

Of greater interest in this part of the analysis again is how capital expenditures change relative to changes in operating income. Fig. 10 illustrates how capital expenditure moves as a relative share of operating income in the five largest sectors over the period 2009-2020. This share fluctuates significantly by year, especially in some sectors. The average value by year, calculated on the basis of the 17 sectors, also shows significant fluctuations.

The logic behind tying capital expenditure dynamics to revenue dynamics, when forecasting free operating cash flows, is very simple. A decisive factor for maintaining the competitiveness and successful performance of a company in the future is the implementation of successful investments. All other things being equal, the more successful investments are made, the more significant increases in revenue and profits should follow. When the forecasts assume a higher growth rate, this implies that more intensive investments should also be assumed. And the opposite should be true – if there is not enough investment, there will be no growth in revenues and profits. In this sense, the medium- and long-term trends are of

interest to the research here most of all. Even more important is whether there is a reason to project future capital expenditure as a relatively sustainable percentage of revenue.

**Figure 10. Five sectors: CAPEX as a relative share of operating revenue**



Source: NSI, calculations of the authors.

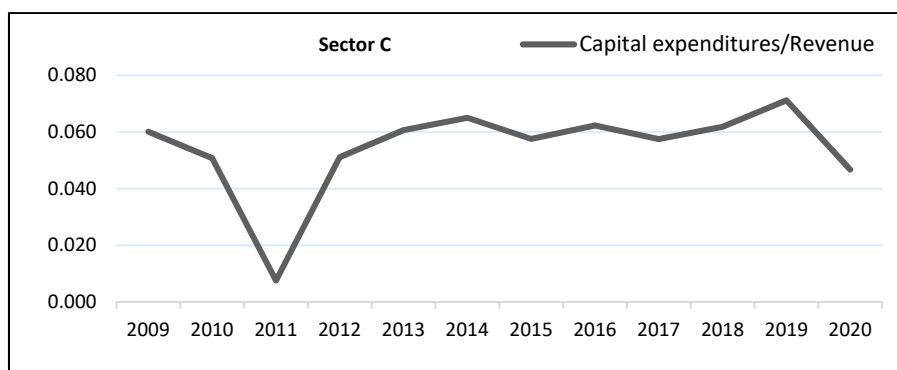
In the short term, however, for individual years, it is normal for the dynamics of capital expenditures to differ from the dynamics of operating income. Not least because there is a lag in the impact of the investments on revenues and profits. In some sectors, this lag may not be particularly large, but in other sectors, it is measured by quite a number of years. In addition, in any given year, capital expenditures, on the one hand, and revenues, on the other hand, are affected by numerous other short-term factors.

**Table 3. CAPEX as a percentage of operating revenue (2009-2020)**

Year	Sector G	Sector C	Sector F	Sector H	Sector D
2009	1.7	6.0	5.5	9.8	30.9
2010	2.1	5.1	-2.4	21.9	11.8
2011	1.6	0.8	-2.3	15.9	12.2
2012	2.3	5.1	1.5	14.9	27.7
2013	0.6	6.1	0.5	10.7	7.1
2014	2.7	6.5	2.0	17.3	6.1
2015	0.7	5.8	-4.2	14.8	13.1
2016	1.2	6.2	2.3	12.9	9.2
2017	1.1	5.7	3.6	9.7	1.4
2018	2.0	6.2	7.8	12.7	6.3
2019	2.4	7.1	4.9	12.8	6.3
2020	1.9	4.7	5.0	26.2	5.5
Average	1.7	5.4	2.0	15.0	11.5
Minimum	0.6	0.8	-4.2	9.7	1.4
Maximum	2.7	7.1	7.8	26.2	30.9

Table 3 presents the exact percentages by year, averages, minimums and maximums for each of the five largest sectors. Figures 11, 12, 13, 14 and 15 illustrate the dynamics of the relative share of capital expenditure against revenue, separately for each of the 5 sectors.

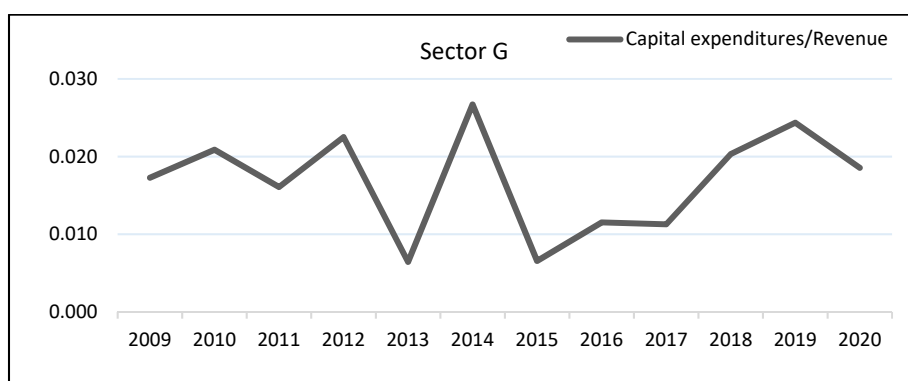
**Figure 11. Sector C: CAPEX as a relative share of operating revenue**



Source: NSI, calculations of the authors.

For sector C (manufacturing industry) we cannot speak of an increasing or decreasing trend (Figure 11). Rather, it is flat if 2011 is excluded. The period starts with 6.0% capital expenditure (as a relative share to revenue) in 2009 and ends at 4.7% in 2020. The low is 0.8% in 2011, and the maximum is 7.1% in 2019. Excluding the excessively low value in 2011, the level of capital expenditure by year moves in a very narrow range of about 5-7%, with an average of 5.4% (Table 3). This average could be used as a good benchmark for businesses in this sector.

**Figure 12. Sector G: CAPEX as a relative share of operating revenue**

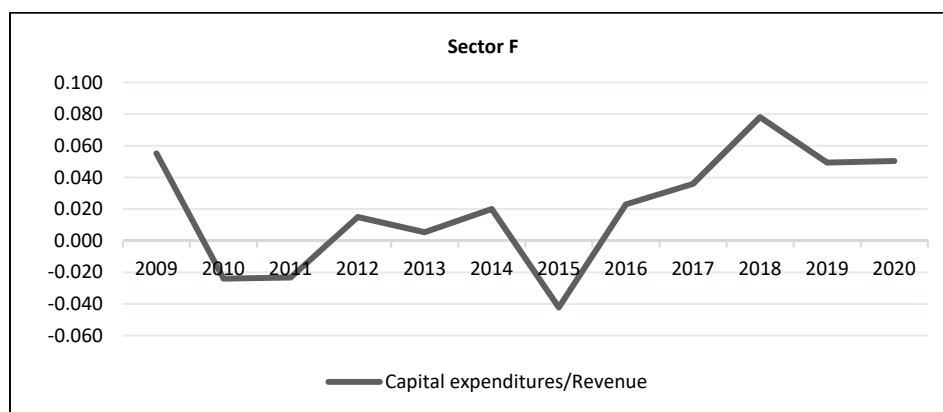


Source: NSI, calculations of the authors.

For sector G (trade), the variation in the relative level of capital expenditure (relative to revenue) is also within a narrow range (Figure 12). The minimum is 0.6% and the maximum

is 2.7%. Here it is also difficult to talk about an increasing or decreasing trend. The period starts at the level of 1.7% and ends at the level of 1.9%. The average of 1.7% could be considered quite representative for this sector (Table 3).

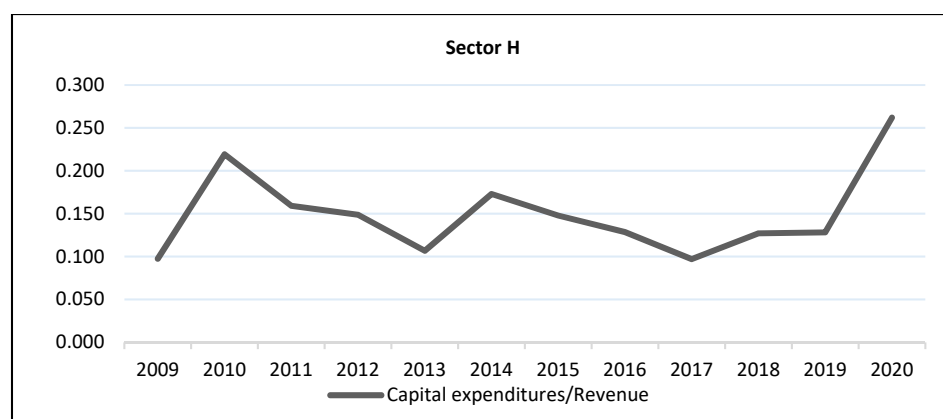
**Figure 13. Sector F: CAPEX as a relative share of operating revenue**



Source: NSI, calculations of the authors.

In sector F (construction), capital expenditure as a relative share moves in a significantly wider range (Fig. 13). The minimum is -4.2% and the maximum is 7.8% (Table 3). That makes a range of as much as 12 percentage points. In this sector, the negative values of capital expenditure in 2010, 2011 and 2015 make an impression. The period starts at 5.5% (2009) and ends at 5.0%, but this is a bit misleading. In the last 5 years, the levels have been consistently higher than the previous six years (only 2009 is an exception) – there is some upward trend. The average value is 2.0%, but with the large variations, it can hardly be considered representative.

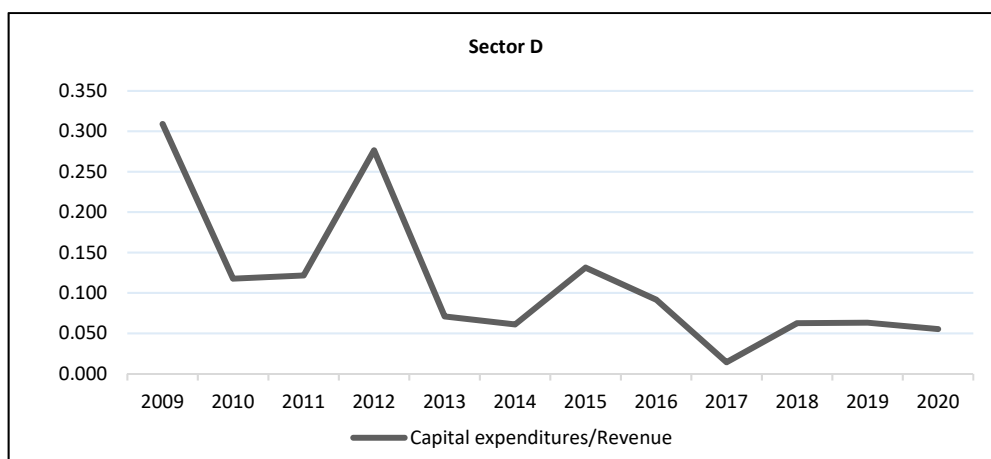
**Figure 14. Sector H: CAPEX as a relative share of operating revenue**



Source: NSI, calculations of the authors

In sector H (transport +), capital expenditure as a relative share varies even more (Figure 14). The minimum value is 9.7% and the maximum is 26.2%, i.e. the range is as much as 16.5 percentage points (Table 3). The period starts at 9.8% (2009) and ends at 26.2% (2020). However, one cannot speak of an upward trend – if the first and last years are excluded, the situation changes radically. The average value is 15.0%, but given the wide range of values, its representativeness is questionable.

**Figure 15. Sector D: CAPEX as a relative share of operating revenue**



Source: NSI, calculations of the authors.

In sector D (energy) there is definitely a trend of decreasing capital expenditure as a relative share (Figure 15). The period starts with a level of 30.9%, which is also the maximum and ends with a level of 5.5%. The minimum is 1.4% (in 2017) and the average is 11.5%. The range between the highest and the lowest value is 29.5 percentage points (Table 3). Due to the very high range in which the share of capital expenditure moves, as well as due to the large difference at the beginning and end of the period, it is difficult to accept the average value of 11.5% as a reliable benchmark for the sector.

## Conclusion

In the first part of the broader study by the authors (Nenkov, Hristozov, 2022), it was found that the dynamics of operating expenses largely follow the dynamics of operating revenues. One conclusion then was that historical averages of operating expenses as a percentage of operating revenue can serve as a good starting point in the process of determining future free operating cash flows.

In the context of the current research, for *NOWC and capital expenditure*, things seem a bit more complicated. In the short term, fluctuations in both groups of investment expenditures



are in many cases significant, which casts doubt on the extent to which the derived average values can serve as benchmarks for the respective sectors.

At the same time, however, there are no serious arguments against the fact that *NOWC and capital expenditures* in the long term will follow as average values of at least approximately the *operating revenue*. The fact that the observed period is relatively short, as well as the peculiarities of this period, should not be overlooked. It begins with the years of the global financial crisis and ends with the crisis caused by the COVID-19 pandemic. Regardless of short-term fluctuations, values are generally expected to gravitate around an average over a longer period. The period between the global financial and economic crisis of 2007-2008 and the onset of the crisis caused by COVID-19 is interesting for researchers because it saw recession and periods of economic growth, which were again interrupted by a crisis in 2020 which led to a new global economic downturn in some countries. The COVID-19 crisis is particularly specific with the disrupted logistics connections and the possibility of supplies, which significantly increased the demand and prices of a number of goods and services, the supply of which was not enough to satisfy the needs of businesses and households.

In some of the sectors, the established range of variation of the values is very small. In some cases, this is combined with a horizontal trend in the relative share of NOWC and capital expenditures in the medium term. In such situations, the derived averages are highly representative and could be used as benchmarks. Accordingly, the hypothesis that historical averages for the relative share of NOWC and capital expenditures can be used in forecasting free operating cash flows, is rather confirmed in these cases.

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## IMPLEMENTATION OF HULONTALO ETHNIC VALUES IN SMALL AND MEDIUM BUSINESSES (SMEs) FINANCIAL DECISION-MAKING<sup>2</sup>

*This study aims to explore and understand the implementation of Hulontalo ethnic values in SME's financial decision-making. The determination of informants begins with the decision of the key informant; then, the appointment of informants is developed during field searches using the Snowballing Sampling technique. The informants in this study were as many as nine people. An entrepreneur must have skills in managing his business, expertise in making quality products and implementing the values of Adati Hula-hula'a to Sara'a, Sara'a Hulahula'a to Kuran, which support the theory. There are three implementations of Hulontalo ethnic traditional values in financial decision-making: piyohu, Dilapottitilandingo, and payango. This research was hoped to support the pecking order theory and obtained a new indicator that can be considered for an individual in making financial decisions, namely Daadata Tilapulo (productivity).*

*Keywords: Culture; Ethnic; the value of entrepreneurship; Capital structure; Financial behavior; Financial Decisions; Decision-making*

*JEL: G4; G40; G418*

### 1. Introduction

Every SMEs entrepreneur needs to have skills in managing their business, especially the ability to make financial decisions. Developing the knowledge and skills of SMEs entrepreneurs into a solution can be done by exploring the role of business simulation and business strategy (Barnaby, Devins, Beech, 2021). Entrepreneurship is essential for the community to develop its leadership and business management skills and answer the challenges of today's society to be more productive and improve its economic performance

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(Barnaby, Devins, Beech, 2021). In reality, entrepreneurship and cultural values are interconnected based on most of the research that has existed, specifically in linking between personality traits and motives of each individual. According to Ewe et al. (2020), the difference between failure and loss in financial decision-making often occurs because it does not focus on a rule, as The Regulatory Focus Theory explains. The subjective action that an entrepreneur often does is based on cultural values, which contain religious values (Mahadewi et al., 2022). However, research on indigenous peoples has been lost in management research (Jackson, 2019).

Financial decision-making also requires adequate expertise so that the business can run sustainably. Financial decision-making is influenced by the number of funds available, age, level of professional competence (Maslennikov, Larionov, Gagarina, 2022), and moral factors, including personal versus impersonal actions and modalities (Frechen and Brouwer, 2022). In addition, agency conflicts can occur in taking the puck if it cannot harmonize the relationship between managers and shareholders (Borges Júnior, 2022). Agency conflicts can also occur due to differences in corporate governance mechanisms, such as the composition of company funding sources closely related to the capital structure (Borges Júnior, 2022). For example, companies in Japan, France, and Germany have various capital structures due to differences in board characteristics (Ezeani et al., 2022). Therefore, the company's financial policy must follow loan requirements and be responsive to the company's characteristics (Khan et al., 2020).

The right financial decisions are influenced by several aspects, one of which is the cultural values embraced by decision-makers. Cultural values are discussed in behavioural theory (Calza, Cannavale, Zohoorian Nadali, 2020). The science of behaviour in economics arose from the ideas of psychological science, sociology, cognitive science, and neuroscience, so the phenomenon of decision-making for rationalistic thinkers gave birth to the concept of "homo economicus" (Borozan, Loreta, Riccardo, 2022). The existence of ethnic and social community differences can affect cultural and social values in shaping attitudes, motives, and encouragement for entrepreneurship (Lam, Harris, Yang, 2019). In addition, The specific characteristics and norms embedded in the society and culture of an ethnic group such as China are implemented in the business practices and decision-making of international partnerships; their behaviour and way of thinking are shaped by the core values of its culture (Tao, Li, 2020). Improving business skills and social capital can begin with managing the fear of failure and improving the ability to recognize existing business opportunities (Lerner, Malach-Pines, 2011). In addition, it helps to acknowledge shortcomings and understand oneself (Balasubramnian, Sargent, 2020).

The traditional values of an ethnicity shape its personality so that it becomes a guide in financial decision-making. Financial behaviour results from active interaction in justifying choices and making complex decisions (Makar, Yarasheva, Markov, 2022). The right financial decisions and awareness can prevent mistakes (Sunderaraman et al., 2022). Understanding finance and investment for the younger generation can achieve individual success and prosperity in the current economic era (Ali, Ammer, Elshaer, 2022) because the success of a business is not formed by law or regulation but rather by partner relationships based on mutual trust and mutual help (Tao, Li, 2020). Partners based on mutual trust provide a more specific and unique place for family businesses (Carr, Bateman, 2010). In addition,

confidence is a prerequisite in any business transaction that significantly impacts the mental realization of decision-making (Egorova, 2022).

The financial decisions of ethnicity are implemented when managing its business. In general, the sustainability of running a business is carried out by minimizing risks and maximizing profits so that business operations run smoothly (Parvin et al., 2020; Stoilov, Stoilova, Dimitrov, 2022). However, some SMEs in New Zealand have difficulty accessing financing due to the lender's ethnic bias (Duppati et al., 2021). In reality, strategic financial choices impact the company's value creation (Toma, Campobasso, 2023). Meanwhile, the company's value is influenced by the selection of different proportions of debt using mixed resources (Dao, Ta, 2020). So it is necessary to make the right financial decisions, especially for business owners who still uphold the principles of cultural values. Many studies have proven that individual cultural values are essential for predicting different attitudes and behaviours among individuals (Kim, Mori, Rahim, 2018). In addition, personality and demographics are closely related to impulsive buying and financial decisions (Bangma et al., 2020).

Many entrepreneurs do not have entrepreneurial skills. Using entrepreneurial technology largely depends on entrepreneurial skills (Iza, 2020). A good environment for entrepreneurs can implement business strategies and improve decision-making skills (Barnaby, Devins, Beech, 2021). However, ethnic values in living systems are undergoing a change in perception that is more critical of today's reality. In contrast, it previously upheld the life experiences of old generations, individual identities, and ethnic collectivity (Perevalova, 2021). In economic conditions like today, entrepreneurs can develop even in situations of uncertainty and change (Kirkwood, Dwyer, Gray, 2014).

Entrepreneurs still do not have the expertise to make the right financial decisions. Therefore, entrepreneurship experts emphasize aspects of entrepreneurship such as action-taking, value achievement, and creative use of business tools (Tokunaga, Martinez, Crusat, 2018). Financial decisions are also closely related to decision-makers, especially gender diversity, as it exists in companies in Southeast Asian countries (Borozan, Loreta, Riccardo, 2022). Entrepreneurs of ethnicity are also emphasized to maintain their characteristics in managing businesses based on the environment and culture they adhere to. In addition, the characterization of entrepreneurs in family businesses does not separate the business owner's personality from the business's specific context (Belkhodja, 2022).

The traditional values of ethnicity are not a guide in decision-making. While the factors that influence decision-making itself, one of which is the ethnic values embraced by a decision maker. Personal characteristics and the ability to take risks are significant determining factors in the perspective of ethnic entrepreneurs associated with their success (Elmassah, Bacheer, 2022). The key to the success of ethnic entrepreneurs is their ability to collaborate on human trust in artificial intelligence precisely based on the problems they face (Zhang et al., 2020). This shows the need for creativity (Li et al., 2021), innovation (Quintana-García, Marchante-Lara, Benavides-Chicón, 2022), and the value of local wisdom in business management (Lucy, Sigit, Dwisusanto, 2022).

Traditional ethnic values have not been applied at the time of financial decision-making. The rapid development of technology and the inclusion of a more open outside culture so that the next generation of ethnicity does not practice the values embraced by its predecessors in

making decisions. Noble ethnic values and the importance of religiosity become a philosophy of life for each ethnicity. However, in the social life of ethnicity, especially at the time of entrepreneurship, it still creates a distance between business activities and ethnic values. This impacts the inaccuracy of decision-making, especially financial decisions, so they experience financial difficulties or bankruptcy.

There have not been many studies exploring the application of ethnic values in financial decision-making. Previous research has only linked national cultural values with capital structure. The research has been conducted for so long that researchers have not found any recent research that links ethnic values with financial aspects, especially financial decision-making. Financial decision-making is undoubtedly strongly influenced by the ethnic values he adheres to make the right financial decisions. This study aims to provide the results of exploration and an exceptional understanding of the indigenous values of the Hulontalo ethnicity in making financial decisions for SMEs. This research can produce a new concept of Hulontalo ethnic and cultural values in deciding on business capital funding. This can give birth to a new approach or unity of thought about the theory of financial behaviour.

## **2. Literature Review**

### *2.1. Capital Concept*

Capital is a never-ending issue in a company, considering that capital problem contains so many aspects. Capital can be interpreted as money used to carry out business activities. Many people think that money capital is not everything in a business. However it is necessary to understand that money in a venture is indispensable. The problem is not the importance of whether or not capital is important but how to manage capital optimally so that the business run can run smoothly. Capital is not always synonymous with money or goods (tangible). Still, an idea and courage is an intangible capital that will shape and support other capital, such as intellectual capital, social or moral capital and mental capital.

Capital, in the Islamic perspective, is all valuable property in the view of syar'i, where human activity participates in its production efforts to develop asman in surah Al Baqarah verse 261, which means that the person who owns (owning property) should not feel heavy to help because what is provided for will grow up multiplied. The one who sincerely provides for his property in God's way is similar to the very admirable state of a farmer who sows a seed, and the granules grow seven grains and on each grain grows a hundred seeds. The number seven should not be understood as a number above six and below eight but is similar to the number one thousand and one, which means many. The multiplication is not only seven hundred times more than that because God multiplies for whom He wills by the greatness of His Grace.

### *2.2. Sources of Capital Funding*

Capital that comes from internal sources is capital that is formed or generated by yourself in the company. According to Muhammad (2017, p. 93), Internal capital is usually obtained

from one's assets that can support business continuity. Wealth can be money, land, buildings or vehicles. Internal capital can also be a loan from the family, the agreement of which does not require legal force.

External sources of capital are capital that comes from outside the company or funds obtained from creditors or shareholders who can participate in the company. The advantage of external capital is that it is unlimited in quantity and is available in large quantities. In addition, by using borrowed capital, there is usually motivation from the management to do business seriously. Sources of funds from external capital can be obtained from loans from the banking world, loans from financial institutions such as pawnshop companies, venture capital, leasing insurance, pension funds, cooperatives or other financing institutions, and loans from non-financial companies.

### 2.3. *Values in Capital Funding Decisions*

The major financial decisions are funding decisions, namely the amount of inputs and outputs (inputs and outputs) using capital budgeting analysis. It is worth listening to the various efforts and series in financial policy that are ethically religious and bring good luck. Luck will certainly not be separated from the value of *fathonah*, *istiqomah*, *amanah* and *tawakkal*. However, some anomalies occur in rational analysis because in decision-making comes the theory of behavioural finance that finds irrational behaviour because psychological factors influence it.

Psychologists have found that many human mistakes made in the decision-making process are not random or dependent on the individual, such as making mistakes systematically and specifically in terms of the judgments made. There are not a few individuals who are too confident in their beliefs or abilities when faced with decision-making, individuals who behave conservatively, rationally and irrationally. Three factors in human behaviour contradict the assumptions underlying the classical economic model in decision-making. This phenomenon is referred to as "cognitive Illusions" because perceptions can often cause errors such as Risk attitudes, Mental Accounting and Overconfidence.

### 2.4. *Entrepreneurship in Islamic view*

In the Islamic view, entrepreneurship is grouped into mu'amalah problems, which are problems related to horizontal relations between people and will still be accounted for in the afterlife. Entrepreneurship is one of the human endeavours in obtaining sustenance to achieve success and happiness in the world and the hereafter if it is carried out correctly and seriously. A person's entrepreneurial journey varies in process, sometimes up and down with various obstacles.

The success of a person's business depends on many things, including the willingness to work hard to achieve goals, honesty in every word and deed, keeping promises, having a leadership spirit, doing neat recording and bookkeeping in doing business, being patient in facing obstacles and challenges, not easily discouraged, giving alms and not always forgetting to

pray (Rimiyati and Munawaroh, 2016). The following is explained the principle of entrepreneurship in the Islamic view according to the Qur'an and Hadith, among others:

1) *Work Hard*

Surah Al-Jumu'ah verse 10 means that when you have performed prayers, then scatter on earth for whatever purpose Allah justifies and earnestly seeks part of His gifts because Allah's gifts are numerous and cannot possibly take them all. Think from moment to moment and in every place with your heart or with your tongue so that you are lucky to get the desired (Shihab, 2012, p. 59) and in surah An-Naba verse 11 means that God has created (made day) something of great benefit so that it is emphasized to man to make the best use of the earth that lies with Mungin, high mountains and times prepared by God for sleep and work (Shihab, 2012, pp. 8-9).

2) *Honest*

In surah, Al Maidah verse 8 explains that people of faith should always and earnestly be perfect executors of duty towards women and others by establishing the truth of the arena of Allah and being just witnesses. And do not be unfair either to your wife's family, Ahl al-Kitab, or others, just because of your hatred of a people. Be fair because fair is close to perfect takwa. And be devoted to God Almighty, knowing what you are doing (Shihab, 2012, vol. 3, p.49). Whereas in Surah, Ar-Rahman verse 9 explains that perfectly establishes the scales, namely the balance of justice in all matters against all parties, even against yourself. Because enforcing fairly can benefit all parties. Do not reduce the balance sheet by any form of deduction so that it will not reduce your charities and their rewards hereafter (Shihab, 2012, p. 283).

Meanwhile, in the surah, An Nahl verse 105 explains the impossibility of the Messenger of Allah lying, and so did the believers. Because those who make up the lie are those, who do not have faith or do not constantly renew their faith in God and the verses of God. In particular, those true liars are far from the grace of God (Shihab, 2012, p. 735).

3) *Keeping a Promise*

Surah al Baqarah verse 27 explains that a covenant between man and Allah (acknowledging His oneness and submitting to Him) occurred in one realm before man was present on this world stage. Those who cancel and break that covenant with God, even though the covenant is already so firm with the sending of Prophets and Apostles who bring evidence of His oneness through scripture and laid out in this realm. They also divide unity and unity, break the harmonious relationship between man and God, and continue to do mischief on earth that will truly perish, lose, and wretch (Shihab, 2012, p. 163). Meanwhile, Surah Al-Baqarah verse 100 explains that they repeatedly broke their promises to Allah. Every time they tied a promise with Allah, the promise of believing in the Prophet whom He sent and the promise to the Prophet Muhammad did not take sides with the musyriks, a class of them threw it. Do not assume that only a small part is of this nature, even a large part of those who do not have faith in the present and the future (Shihab, 2012, p. 328).



4) *Take notes and not be wasteful*

Surah Al Baqarah verse 283 explains that if you are on a journey and have a non-cash name that is not in the hands of a writer, then there should be a dependent item held by the debtor. If you trust each other, you should fulfil your mandate and be the one who accepts and gives devotion to God. It is reminded to the witness not to hide his witness because if it is done, he is the sinner of his heart. Indeed, God is all-knowing about what you do, no matter how small (Shihab, 2012, pp. 739-741). Meanwhile, surah Al Isra' verses 26-27 explain that give help, benevolence and silaturrahmi to close family (both from the father's side and the mother's side) as well as to the poor. And also give zakat, alms or the help they need to the person on the way. Do not waste your property out of place and do not bring benefit because if you squander wealth (wasteful), then the qualities are the same as shaitan, and shaitan is very disobedient to Allah (Shihab, 2012, p. 72).

5) *Patient*

Surah Al Baqarah verse 153 explains that the believer should make prayer and patience his helper in the face of trials. And if a person wants to overcome the causes of his sorrows and difficulties, successfully fighting for truth and justice should be with God with great patience because patience leads to goodness and happiness (Shihab, 2012, pp. 433-434). Meanwhile, in the surah, Ali Imran verse 146 explains that many prophets who fought alongside many of his devout followers were wounded and killed. Nevertheless, they did not become physically weak because of the calamity that befell them in the path of God and were not lethargic, which encouraged them mentally and did not yield to the enemy. And God loves, supports and bestows upon the patient who is steadfast in carrying out obligations, suffering trials, and fighting against the enemy (Shihab, 2012, p. 290).

6) *Not easily discouraged*

Surah Az Zumar verse 53 explains that the consequences of too many sins are committed by going beyond the limits of oneself. But do not despair of God's mercy because His mercy encompasses all things and overcomes His anger. God forgives sins as long as the sinner repents, regrets his deeds, commits not to repeat them and asks God for mercy, for He is all-forgiving again all-merciful (Shihab, 2012, p. 523). Meanwhile, Surah Yusuf verse 87 explains that the Prophet Ya'qub. Asked his sons to search for the whereabouts of the Prophet Yusuf and his brother Benjamin earnestly until they met or the news of them. And asked not to despair of God's mercy, ease and help. Only the pagans who are very steady in their infidelity despair of the grace of God (Shihab, 2012, p. 163).

7) *Almsgiving*

The suggestion for almsgiving is found in surah Al Baqarah verse 261, which means that the parable of the very admirable state of the one who gives up their property sincerely in the way of Allah is similar to the great state of a farmer sowing grains of seed. A seed grows seven grains, and each grain has a seed statute. God will continually multiply for whom He wills because Allah is All-Pervasive in His grace, and He is All-Knowing (Shihab, 2012, p. 690). It is further affirmed in surah Saba' verse 39, which means that sustenance is not related to the wrath or love of God, nor is it solely due to one's

knowledge and efforts. Still, sustenance is extended to whomever He desires at His appointed time. There can be no difference in sustenance for a person only because God likes or dislikes someone based on one's efforts or intelligence. Thus God ordains the acquisition of sustenance solely because of His wisdom and because it does not have to worry because of the acquisition of sustenance. Neither is it miserly in interpreting it because God will replace it in the world or in the hereafter that is similar to or better than him. (Shihab, 2012, pp. 633-634).

8) *Always Pray*

Always praying is also a suggestion, as in surah An Naml verse 62, which means that God allows the prayers of those who are in trouble and he cannot avoid so that Allah grants their sincere prayers according to His requirements. It is also God whose Power removes the troubles that occur to anyone and makes man the caliph on earth so that he can make use of and live comfortably on his face. Can anyone do something similar to pair God with one other than Him? Very little do you remember God, who got rid of the unrest and trouble you faced (Shihab, 2012, p. 483). In surah Ghafir verse 60, it is also affirmed that through the verses of the Qur'an, Allah has said that pray and worship with full obedience to Him and allow His guidance undoubtedly, Allah allows steadily what you expect. Never be so haughty and arrogant as to be reluctant to pray and avoid giving to Him and not allowing My guidance to go to hell Jahannam in a state of the torment of contempt, i.e. tormented birth and mind (Shihab, 2012, p. 649).

### **3. Methodology**

This research is qualitative research with an ethnographic approach. The determination of the informant begins with the determination of the key informant or key informant. Furthermore, the informant designation was developed during field searches using the Snowballing Sampling technique. The choice of Hulontalo ethnic culture is motivated by traditional values firmly held by the Hulontalo ethnicity in doing business, especially and making business capital funding decisions. This research was conducted on Hulontalo ethnic entrepreneurs located in Gorontalo City with the consideration of having a business whose operational activities are in Gorontalo City, self-managed businesses, and a net worth of more than IDR 50,000,000.00 (fifty million rupiahs) up to a maximum of IDR 500,000,000.00 (five hundred million rupiahs) excluding land and buildings for business premises. The informants in this study were nine people consisting of eight Hulontalo ethnic SMEs entrepreneurs and one Hulontalo Ethnic Customary Council.

Instrument data were obtained from participant observation, in-depth interviews, and documentation. To minimize errors and biases in research so that the results are reliable and accountable, checking data validity refers to credibility standards by triangulating data sources where cultural themes that become research findings are taken from expressions directly or implicitly (meaning) by research informants. As for cultural articles found in research but not disclosed by three or more informants (not experiencing information saturation), these cultural themes were not included as research findings. The following process is to conduct a member check by checking and discussing the cultural themes of the

Hulontalo ethnicity with the chairman of the Gorontalo Traditional Council; The Transferability Standard in this research is carried out by describing in sequence and detail the cultural themes found by studying Hulontalo ethnic culture in depth by reading references related to Hulontalo ethnic culture and discussing them with Hulontalo ethnic indigenous experts; The Dependability Standard is carried out by maintaining consistency from the beginning of data collection until the data is considered saturated to answer the problems and research objectives with the discovery of Hulontalo ethnic, cultural themes; and Confirmability Standards are carried out by examining and rechecking data/information on Hulontalo ethnic, cultural themes obtained through discussion and confirmed to Hulontalo ethnic culture experts, namely Mr Karim Patada, Mr Nasir Djafar, and Mr Rustam Tilome.

This research procedure refers to Spradley's research pattern with the data analysis process, namely analyzing and describing the results of interviews with informants. Next, domain analysis is carried out to find a larger domain of the cultural themes found. The selected domains are taxonomically analyzed to form categories and components identified in contrasting dimensions with two values, namely behaviour and expression, that have been combined. The next step is to analyze the relationship between themes in one category that has been obtained. Furthermore, writing cultural themes that link the traditional values of the Hulontalo ethnicity with business financial decision-making.

#### 4. Results

There are data analysis stages: domain analysis, taxonomic analysis, component analysis, and thema analysis.

##### 4.1. Domain Analysis

Semantic relationships to analyze the implementation of traditional values coded *syara'* and *syara'* encoded *Qur'an* in the decision to fund the business capital of Hulontalo ethnic SMEs. The results of in-depth interviews with participants found that the implementation of Hulontalo ethnic values in making business capital funding decisions, namely *Dilapottitilandingo* (don't be lazy) and *Payango* (designing) behaviour. The first implementation of Hulontalo ethnic traditional values is *dilapottitilandingo* (don't be lazy), which means that ethnic Hulontalo entrepreneurs in running their business apply *Mo'olohu* (diligent) behaviour so that their business income increases and can rotate their capital quickly. *Motolopani* (skilled) is also needed in SMEs entrepreneurship because they can issue a high enough material system without professional skills to impact the profits obtained. Hulontalo ethnic SMEs entrepreneurs constantly update their skills by continuing to learn from the people they have gone through or the experience of the people they occupy working, so it can be said that Hulontalo ethnic entrepreneurs have *Moopolato* (learner) behaviour.

The implementation of the second Hulontalo ethnic customary value is *Payango* (designing) which means that Hulontalo ethnic SMEs entrepreneurs, in running their business, always make specific designs or patterns so that the business they run can get maximum profit. To achieve maximum profit, Hulontalo ethnic entrepreneurs have *tapa-tapa dudulo*

(concentration) behaviour on only one type of business SMEs. This is done to have mondaapo (quality) production so that it is accepted by the market and gains consumers' trust.

Quality SMEs must be produced with the right calculations to get maximum profit. Hulontalo ethnic SMEs entrepreneurs, when running their business, have an excellent *morekeni* (take into account) behaviour so that the prices offered to consumers are not expensive. In addition, it takes *mo'uliapo* (creative) behaviour to make quality products affordable because, according to Hulontalo ethnic SMEs entrepreneurs, consumers always want these two things. Based on this explanation, the domains of implementation of the Hulontalo ethnic traditional values found are *dilapottitilandingo* (don't be lazy) and *payango* (design). The domain analysis sheet can be seen in Table 1.

**Table 1. Domain analysis sheet of Hulontalo ethnic value implementation**

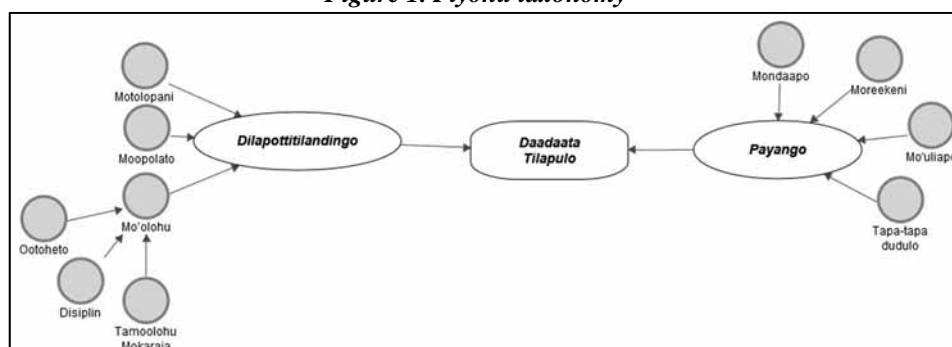
No.	Include Term	Semantic Relations	Domain
1	<i>Mo'olohu</i> (diligent)	Is the cause of	<i>Dilapottitilandingo</i> (don't be lazy)
2	<i>Moopolato</i> (learner)		
3	<i>Motolopani</i> (skilled)		
4	<i>Tapa-tapa dudulo</i> (concentration)	Is the cause of	<i>Payango</i> (design)
5	<i>Mondaapo</i> (quality)		
6	<i>Morekeni</i> (take into account)		
7	<i>Mo'uliapo</i> (creative)		

Source: Data processed N-Vivo 12 (2022).

#### 4.2. Taxonomic Analysis

The chosen domains are *dilapottitilandingo* and *payango*, which have similarities based on semantic relationships. *Daadaata tilapulo* (productive) is a larger and more inclusive domain and has been through interviews to validate the analysis. Productive is being able to produce continuously (*dilapottitilandingo*) and regularly used (*payango*) to form new elements. Productiveness is a behaviour that every entrepreneur must own to get maximum profit. Of course, it must be accompanied by behaviour that is not lazy and makes the right pattern or design to achieve these goals. The complete build of the taxonomy can be seen in Figure 1.

**Figure 1. Piyohu taxonomy**



Source: Data processed N-Vivo 12 (2022).

#### 4.3. Component Analysis

The domain to be analyzed is *daadaata tilapulo*. *Daadaata tilapulo* is a behaviour that produces and is used continuously so that the Hulontalo ethnic SMEs business can survive during increasingly hypercomplex challenges. Components have identified contrasting dimensions with two values, namely behaviour and expression, combined. The analysis of this component has prepared non-existent features through questions and observations on the study subjects. The complete paradigm can be seen in Table 2.

**Table 2. Component analysis sheet of Hulontalo ethnic value implementation**

Domain Analysis	Taxonomic Analysis	Component Analysis	
		Behaviour	Phrase
Daadaata Tilapulo (productive)	Dilapottitilandingo (don't be lazy)	Take the work seriously	"...I haven't directly given salary..."
		Not wasting time	"...men at 7 am, so mo tanya dorang p karja..."
		Working overtime	"...sometimes at 9 pm, 9.30 pm, and 11 pm if fasting works..."
		Innovating product models	"...my usual return will be spent coming home from work..."
		Work before employees arrive	"...men at 7 o'clock, already I will ask their work..."
	Payango (design)	Before going into debt, calculate the risk in advance	"...one month, for example, 15 million, 500 thousand separated every day..."
		Collaborating with I.T. expertise	"...I developed..."
		Hear other people's feedback	"...if you learn, you can be the same as those who are already professionals..."
		Not doing any other business	"...Finally, the SMEs should focus on wood..."
		Creating products that are accepted by the market	"...let the work be fast, but the results are good..."

Source: Data (processed, 2022).

#### 4.4. Thema analysis

Domain analysis of *daadaata tilapulo* found indicators or sub-themes of *dilapottitilandingo* and *payango*. The findings of indicators or sub-themes have a synergistic relationship. *Daadaata Tilapulo* (productive) is to have quality production results that the market can accept to increase income continuously. The purpose of the *daadaata tilapulo* is to make the Hulontalo ethnic SMEs entrepreneurs more *mo'olohu* so that it affects the improvement of *motolopani*. In addition, ethnic entrepreneurs of Hulontalo can also improve *motolopani* in a *moopolato* way to more professional ones or from experience passed during the establishment of a SMEs business.

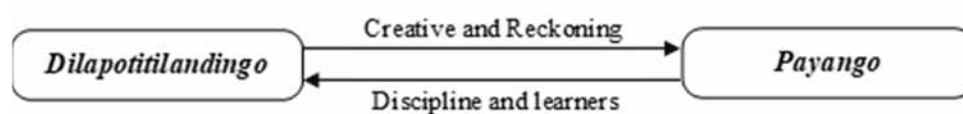
*Mo'olohu* is a behaviour that can increase profits or bring profit because of self-discipline behaviour at work. In addition, *ootoheto* is another aspect owned by ethnic SMEs businessman Hulontalo to maintain his *mo'olohu* behaviour. Hulontalo ethnic SMEs entrepreneurs have *tamoolohu mokaaraja* behaviour because, with this behaviour, the work

target set to produce a product can be achieved. The sooner a product is completed, the faster the capital turnover is owned by SMEs entrepreneurs.

The development of SMEs production must always be improved so that entrepreneurs try to do *moopolato* so that production can keep up with the times and meet the model desired by consumers. Because without *moopolato* behaviour, the SMEs business will not last long because it is considered unable to meet consumer expectations and needs. *Moopolato* can be done by studying the experience of designing and producing SMEs. In addition, it is also carried out by gathering and discussing with entrepreneurs with more experience in the SMEs business.

The rapid development of technology has made more and more models that can be replicated in manufacturing SMEs. This requires that SMEs artisans must be more willing to make SMEs products. This should be supported with *payango*. Because to get maximum profit, you must make the right design or pattern in entrepreneurship. The *payango* is a behaviour that *mo'uliapo* is to produce *mondaapo* SMEs. The results of *mondaapo* production can be achieved if the businessman *tapa-tapa dudulo* runs his business. Maximizing profits can only be done if it is appropriate to determine the costs incurred for each product to be produced. Domain analysis of *daadaata tilapulo* found indicators or sub-themes of *dilapottitilandingo* and *payango*. The findings of indicators or sub-themes that have a synergy relationship can be described below:

**Figure 2. Thema Daadaata Tilapulo**



Source: Data (processed, 2022).

Based on visualizing relationships between domains, the ethnographic theme is *daadaata tilapulo*. Based on this theme, it produces a **minor proposition** for implementing the traditional values of Hulontalo ethnic SMEs entrepreneurs: ***Daadaata tilapulo to maximize profits so that they can make decisions on business capital funding caused by dilapottitilandingo and payango behaviour.***

## 5. Discussion

Based on the proposition, the study's results stated that the behaviour of *daadaata tilapulo* can maximize the profits of Hulontalo ethnic entrepreneurs to decide on the proper business capital funding due to the behaviour of *dilapottitilandingo* and *payango*. The efforts of the Hulontalo ethnicity in its business activities aimed at seeking the benefits of the world and the hereafter based on the traditional values of the Hulontalo ethnicity in making financial decisions. Based on the results of the triangulation of sources that have been carried out, traditional values for funding decision-making are presented in the description of the results

(excerpts) of an interview with the chairman of the Hulontalo ethnic customary council, namely Mr Karim:

*“.... he appreciates people because the person here is his characteristic there are four, namely the Gorontalo person has a friendly attitude although it is sometimes irritable if the guest is a bit rude and others, only the second he is a cooperative nature, new customs that are still thick, and then ahh adherents of the Islamic religion but not extreme he is fanatical but not extreme....”*

*“..... usually it says eeee what used to be said eee dilapottitilandingo, ehh then it means don't we be lazy then we have to ehhhh mo'olohu just categorized as a diligent person olohiyo need a diligent person it means he has an income dang if we leterlet ehhh diligently means income, gluttony, manubutuhiyo anyway satiety means he has income, ah if he is said to be landingio, it's lazy it means he has a pelango, a pelango there if he's hungry but actually if a lazy person doesn't get anything and uh the search is hard....”*

*“.... the Gorontalo people in choosing the leader there is no so-called hereditary yahh whose nature is what he is through the election of who is honest who dares to say hello strongly who is smart ah that he is he through ah it is called through the election building of the bantayopoide traditional deliberation....”*

An entrepreneur should not be lazy in running his business, so it must be embedded in him an attitude of *Dilapottitilandingo*. Because by instilling this attitude, it can increase business reputation capital and promote business interests in achieving its goals.

*“...If I capitalize it later, your proficiency is not just this one field; it should be that if the work can master several fields and have to learn as well. Not only finishing but if there is a working vacuum in finishing, later learn in other fields as well. It's all through sacrifice and hard work....”*

Successful people in business are not mediocre people but those with distinctive character. Without specific characteristics, it will only make entrepreneurship a place to try. Many want to be entrepreneurial, but because they don't have consistency and skills, they must stop halfway. Entrepreneurial skills can increase company productivity (Iza, 2020). Some entrepreneurial skills that an entrepreneur must have to include the skills to innovate, seize opportunities, take risks, and always be concerned about growth. (Mamabolo and Myres, 2019).

In addition to skills, ethnic Hulontalo has expertise so that its production sells well in the market and has good quality. Because the business does not depend on the amount of capital an entrepreneur owns, the quality of the goods produced is acceptable to consumers. Many entrepreneurs have prepared big money to produce but have experienced bankruptcy because they do not have quality goods, so consumers do not buy their products. Hulontalo ethnic entrepreneurs take great care of the quality of their products to take care of their customers.

*“....If you have good production results, the work automatically never breaks; work continues. From there, the relationship between the boss and his men....”*

“...Consumers are, there are two things that must be picked, namely winning buy and winning use. Those two things if you have mastered in business, then the business will live on until the next...”

This shows that ethnic Hulontalo entrepreneurs take great care of the quality of their production so that consumers feel satisfied and will help promote the product to other consumers. With consumers' trust, the business will experience sustainability in a competitive market.

*Adati hula-hula'a to sara'a, sara'a hula-hula'a to Kuran* is a valued philosophy of ethnic Hulontalo in decision-making, including financial decisions. Falsafah adat explained that custom is a clue in the behaviour of the Hulontalo ethnicity, which rests on the shari'a. The sharia is in the form of laws or rules whose executors are called employees of the syara' or executors of the regulations, executors of the law. The law is based on the Quran, Hadith, word, ijtima ulama, sunnah rasul, and ulama agreements which are the basis for living life. Therefore, when the Hulontalo ethnicity does business, it is usually not just making it out of thin air but based on its ethnic values. Thus, one thing that is done before deciding to do business and decide on the use of capital is always based on traditional values based on Islamic principles.

For example, when banks visit ethnic Hulontalo business people to provide loans, they always think about Islamic principles, one of which is about Riba. But it is in the opinion of the customary council that usury arises when the borrowed money makes the business people entangled and burdensome. However, that's fine if the bank system can still be paid and is not oppressive. Usury occurs if a loan has interest and the interest continues to interest again. From this opinion, many Hulontalo ethnic believers make decisions using their capital by saving from their work. Some businessmen also made loans Bank but did the calculations well, so ethnic business people of Hulontalo did not take out the loans as proposed by the banks. As a result, ethnic Hulontalo business people were getting funding from the banking 50 million, but the business people only received 25 million. This is done because it considers his monthly income and loan instalments every month.

*Dilapottitilandingo* and *Payango* implement Hulontalo ethnic traditional values in financial decision-making. This value is a reflection of *the value of Daadaata Tilapulo* or productive because the value of *Dilapottitilandingo* (diligent) allows ethnic Hulontalo entrepreneurs to earn more income so that they can maximize their internal funding than external funding. In addition, the value of *Payango* also makes the Hulontalo ethnicity do good calculations, make a pattern of order in entrepreneurship and combine creativity in producing quality products to gain consumers' trust, and their business income can increase. This attitude shows that ethnic Hulontalo business people have consistently applied the values of *Daadaata Tilapulo*, *Dilapottitilandingo*, and *Payango* in making financial decisions. This is in line with *pecking order theory* which states that companies with a high level of profitability have low levels of debt because companies with high profitability have abundant internal sources of funds. (Myers, 1984).

Pecking order theory states, "Companies with a high level of profitability are low in debt level because companies with high profitability have abundant internal sources of funds." In



pecking order theory, there is no optimal capital structure. In pecking order theory, there is a hierarchical scenario in choosing the source of funding, namely

- 1) Companies prefer to use internal funding sources or internal funding rather than external funding.
- 2) If external funding is required, the company will choose first, starting from the safest securities, the least risky debt.
- 3) The company will set a constant amount of dividend payments, unaffected by how much the company gains or loses.
- 4) To anticipate a shortage of cash inventory, the company will take a smoothly available investment portfolio.

The findings of a minor proposition in implementing the traditional values of Hulontalo ethnic SMEs entrepreneurs in making business capital funding decisions are the behaviour of *daadaata tilapulo* to maximize profits so that they can make business capital funding decisions caused by *dilapottilandingo* and *payango* behaviour. The characteristics of the *daadaata tilapulo* category are *mo'olohu* (diligent), *moopolato* (learner), *motolopani* (skilled), *tapa-tapa dudulo* (concentration), *mondaapo* (quality), *morekeni* (taking into account), and *mo'uliapo* (creative). The theory of the characteristics of the greater *daadaata tilapulo* of greater relevance is the dimension of productivity in the theory of financial behaviour.

Productivity is a fundamental concept in Islam because it is closely related to the values of goodness and faith. Several verses in the Quran discuss the dimensions of productivity, including:

- a) Q.S An-Najm verses 39-41 means that man has nothing but what he proposes; good and bad efforts will not be eliminated because one day it will be shown so that they feel proud of good deeds and avoid evil deeds. Every act of effort will be given a perfect reward. If it is good, it will be multiplied, and if it is bad, it will be perfectly rewarded (Shihab, 2012)
- b) Q.S Al-'Asr verses 1-3 teach that time is a valuable resource and should be utilized as well as possible to do good and helpful productivity for oneself and others. The concept of productivity in the Quran is also related to faith and pious deeds, so a person must have clear goals and be based on good values in every action.
- c) Q.S Al-Baqarah verse 195 emphasizes the importance of trying and striving hard in work, but still carrying out in a good and right way, and paying attention to the safety of oneself and others.

In addition, it is confirmed by the Hadith narrated by Ath-Thabrani that "indeed among the sins that cannot be redeemed by the reward of prayer, alms or Hajj, it can be redeemed with difficulty in earning a living". The conclusion of the discussion on the meaning of the implementation of traditional values encoded with sharia', and sara' encoded with the Qur'an in the decision to fund business capital for Hulontalo ethnic furniture is found in the dimension of financial behaviour, namely productivity (*daadaata tilapulo*). Islamic teachings

strengthen the dimension of productivity in the theory of financial behaviour based on the Qur'an and Hadith.

Financial choices affect company productivity and have significant financial consequences for businesses (Guo et al., 2021). In addition, according to Ha (2020), there is a two-way interaction and causality relationship between productivity and the company's financial sustainability. This supports the idea that businesses with tight budgets are more vulnerable to investment problems, thus identifying a company's financing and investment relationship to working capital productivity and having significant managerial consequences for financial decisions (Legesse et al., 2021). According to Corbae, D'erasmo and Erasmo (2017) discover that changes in the law can have significant effects on capital structure and borrowing costs, which in turn, selectivity affects productivity (allocative efficiency rises by 2.58%) and welfare (rises by 0.54%).

According to Garcia-Rodriguez et al. (2022), the pecking order theory is consistently used in nonprofit financing organizations (NPOs), and the decision on the use of the company's capital in Vietnam based on the trade-off theory and the pecking order theory (Nguyen, 2023). Moreover, many studies have proven that corporate financing decision-making follows the work of Modigliani & Miller, especially for large companies. Still, it is constrained to small and medium-sized (SME) enterprises except for the trade-off and pecking order theories (Daskalakis, Jarvis, Schizas, 2013; Meressa, 2022). Moreover, young and old companies have financing behaviour similar to the pecking order theory (Sardo, Serrasqueiro and Armada, 2022).

The results of this study can contribute to the development of science about financial behaviour theory on the concept of funding decisions where the perspective of the concept of funding decisions (*financial decisions*) expressed by Baker et al. (2017) states that an individual makes financial decisions based on past experiences, values, mental mistakes, cognitive factors, and emotional impulses. Meanwhile, from the results of the study, a new indicator was obtained that can be a consideration for an individual in making financial decisions, namely: *Daadata Tilapulo* (productivity).

## 6. Conclusions

*Daadata Tilapulo* is a behaviour in expression and behaviour that reflects *dilapotitilandingo* and *payango*. *Dilapotitilandingo* is an attitude that is diligent in working, skilled in working on SMEs products and always has the desire to develop itself continuously. *Payango* is a design or pattern that arises from an attitude of concentration on doing work, having creativity, always considering the work well and producing quality products. Based on this, it shows that Hulontalo ethnic entrepreneurs, in deciding to fund their business capital, prefer to use internal resources first and then, in their development, will use external capital even though some Hulontalo ethnic entrepreneurs no longer want the use of external capital.

An entrepreneur must have expertise in managing his business and expertise in making a quality product must be accepted in the market. Implementation of values *adati hula-hula'a to sara'a*, *sara'a hula-hula'a to kuran* is the traditional philosophy of the Hulontalo ethnicity

must be maintained amid a culture of openness. There are three implementations of traditional values etnis Hulontalo in financial decision-making and support *pecking order theory*. This research contributes to applying ethnic philosophy in SME's financial decision-making to maintain the existence of the noble values of an ethnicity. In addition, this research contributes to the development of financial behavioural theory so that daadata tilapulo ethnic values can be a theory development in financial-decision making.

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## PRIMARY ELEMENTS OF THE PUBLICIZED ORGANIZATIONAL CULTURE OF HIGHER EDUCATION INSTITUTIONS IN BULGARIA<sup>3</sup>

*The visualization of the strategic priorities of the universities in the digital space is a key task of academic management in the conditions of a dynamic educational environment and globalization. Proclaiming the official organizational culture on the Internet is essential for improving the image of educational institutions. The purpose of this study is to explore and identify the main priorities when publishing online the organizational culture of higher education institutions, with an emphasis on its primary elements and to reveal their general features, specifics and purpose. It was established that the primary element of utmost importance for universities is the mission and that the least important is the organizational vision. It is concluded that universities should more actively proclaim vision and values in addition to the mission, in order to create a complete portfolio of key elements of the organizational culture and thus build the desired image.*

*Keywords: higher education institutions; publicized organizational culture; mission; vision; values/principles*

*JEL: A23; I23*

### 1. Introduction

Similar to any other economic/management category, organizational culture “has grown” over time, its original substance now enriched with numerous nuances added over the years by various researchers. The classic foundational definitions by E. Schein, A. Pettigrew, L. Gorman, R. Kaplan and D. Norton, etc., still relevant today, became the starting point for the research carried out by a number of scholars in this field. There are various ways to define and characterize organizational culture, as it is influenced by factors such as: the sector in which the relevant organization operates; its geographical location; the events that occurred during its history; the personalities of its employees and their patterns of interaction. Undoubtedly, organizational culture plays a key role in the functioning of the organization.

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This role is expressed in its support to the adopted competitive strategy under the existing conditions of the market environment

At the current stage, one of the challenges the management of universities is facing is the search for innovative approaches to their own promotion. In the conditions of heavy competition and a dynamic educational environment, the importance of the universities' intangible assets as sustainable competitive advantages is growing. One such asset is the organizational culture whose key task is to distinguish and "visualize" the relevant university in academic circles within the country and abroad, and also in its surrounding environment: among users of the educational service, public administration, financial institutions and local community. The fulfilment of this task requires making public those features of the organizational culture through which the university can be identified in the educational sphere as unique and exclusive among other higher education institutions. The organizational culture of educational institutions contributes to motivating the academic staff to apply effective, creative, productive and ethical work methods in the spirit of high responsibility, in order to provide quality educational services to interested parties. The well-crafted and publicized organizational culture of educational institutions has a positive impact on both their employees and on students and applicants.

In this regard, the *aim* of this paper is to explore and identify, through the prism of the study of the higher education sector in Bulgaria, the main priorities when publishing online the organizational culture of higher education institutions, with an emphasis on its main elements and by revealing their general features, specifics and purpose.

In order to achieve the goal thus formulated, the following research tasks have been set:

1. To study the theoretical aspects of the publicly announced organizational culture and its role in forming the organizations' identity and uniqueness in the external environment.
2. To outline the specifics of the higher education sector in Bulgaria in the context of contemporary challenges and trends.
3. To identify and examine the main elements of the publicly announced organizational culture of higher schools in Bulgaria, emphasizing the general and specific characteristics of its establishment.

The object of study is the organizational culture of all higher education institutions in the Republic of Bulgaria.

## **2. Literature Review**

Different authors' definitions of organizational culture often differ greatly from one another: a cognitive framework consisting of attitudes, values, behavioural norms and expectations (Greenberg, Baron, 1997); collective thinking, habits, attitudes, feelings and behaviour patterns (Clemente, Greenspan, 1999); programmed way of perception derived from the beliefs and values; a behavioural pattern that was adopted by an organization as an acceptable way to solve problems (Mohelska, Sokolova, 2015); basic values, attitudes and beliefs that exist in the organisation, patterns of behaviour that express the connection between beliefs,

values and behaviours of members of the organisation (Denison, 1990). Among the many modern definitions, the approach by P. Weil is worth mentioning, who regards it as a system of relationships, actions and artefacts that stands the test of time and builds a unique common psychology among the members of a cultural society (Basenko, Zhukov, Romanov, 2012). Here, the author emphasizes the unity of cultural elements in building a unique work atmosphere in the organization, advocating the position that if an organization has a “soul”, then this soul is its organizational culture (Shemetov, Cherednikova, Petuhova, 2012).

According to Graham et al. (2022), the crafting of the organizational culture by the management team often begins with specifying and formulating a mission and some guiding values, but it can also take place without such values being explicitly stated. Ilieva (2006) adds that in the process of strategic planning, the mission requires a strategy to support it, and the culture is required to support the strategy. From these and other viewpoints, it is clear that organizational culture is considered an important tool in the “hands” of management in the process of strategic management, and its contribution to the successful implementation of the company’s strategy depends on the efforts made for its development. In view of this, the authors support Cooper’s view that culture is never neutral – it must support the strategy, and if it is not part of the solution, then it is probably part of the problem (Ilieva, 2006).

The support provided by the culture means that its elements must be in conformity with the parameters resulting from the chosen strategic line of behaviour of the organization. Thus, according to Schein (2004), cultural elements fall into three cultural layers and it follows that each of them needs to be relevant at the respective levels of strategy operationalization. The visible side of culture is contained in the uppermost layer encompassing the system of cultural artefacts. The main task of the artefacts is to provide a tangible expression of the deep-seated beliefs and values of the system, thus “visualizing” the cultural priorities of the organization to its partners in the surrounding competitive environment. A key element of this cultural layer is the official organizational culture publicized (proclaimed, disclosed) online, through which an organization (including higher education institutions) “presents itself” in its market space. Some authors add that it can be perceived as a tool/mechanism through which successful adaptation to the external environment is ensured (Basenko, Zhukov, Romanov, 2012), and also that it contributes to the improvement of the image (Makeev, 2012).

A comprehensive definition of a publicized organizational culture is given by K. Dimitrov, who regards it as “embodied in a set of company documents communicating the official culture of a target organization, perceived simultaneously as a relatively stable, but amorphous, and yet uniform aggregation of multifaceted interrelated norms, adopting a civilizational status in various forms – vision, mission, motto, creed, official philosophy/policy, company values, company history, information on the organization, code of ethics, principles, objective, corporate social responsibility, slogan or manifesto, all according to the particular needs and wants of the object of study (a company, a non-profit organization, etc.), identifying it in at least three perspectives – culture, strategy and communication” (Dimitrov, Ivanov, Geshkov, 2018).

Based on the above, we believe that the following important characteristics of an organizational culture that is publicized online can be derived:

- it reflects the official culture of the relevant organization;



- it is the result of a purposeful crafting by the management of the organization;
- it is expressed through written cultural attributes – mission, vision, motto, creed, official philosophy, history of the organization, values statement, etc.;
- it is presented in official documents of the organization, communicated in the virtual space through its official website;
- it plays an important role in identifying organizations in the market space and building up the desired image in the eyes of their partners and users, in successful adaptation to the external environment.

Undoubtedly, the role of the publicized organizational culture is growing in the conditions of a dynamic and highly competitive market environment, where an important condition for success is the crafting of unique distinctive features which the users identify with the organization. In this regard, Dimitrov et al. point out that “the modern trend of business globalization obliges senior managers acting in such an environment to purposefully and specifically (re)formulate, place and disclose a proclaimed target organizational culture” (Dimitrov, Ivanov, Geshkov, 2018). In this context, we believe that an important prerequisite for the proper creation, management and development of the publicized organizational culture is knowledge of its structural elements and their role in expressing the strategic intentions of the organization. It should be noted that the literature lacks a well-established model of such a structure – a number of specific examples show various compositions or configurations of a set of elements. Systematizing the practical experience, the literature has collected different points of view regarding this structure.

Many authors (K. Dimitrov, P. Shemetov, L. Cherednikova) agree on the leading role of the mission statement when publicizing the strategic intentions of the organization online, emphasizing its key role in the presentation of the organization. In their comprehensive study of a number of Bulgarian companies, Dimitrov et al. (2018) concluded that the mission is the most frequently used cultural element in the virtual space, the vision is less common, and the creed is hardly ever available as a corporate document. Mission statement is considered a necessary aspect from the point of view of strategic management of different types of organizations (in the private or public sector, profit or non-profit making, multinational or local) (Darbi, 2012). In this regard, according to Ozden (2011), the success of strategic planning depends largely on the proper identification and formulation of the mission statement. It also contributes to organizational identity.

Another group of researchers (Schermerhorn, 2013; Kuzmanova, Aleksandrova, 2013; Meskon, Albert, Hedouri, 1999) find that the statement of company values determining the philosophy of the organization’s functioning is as important as the mission statement. Moreover, according to some authors, values build up ideology, which in turn shapes the image of the organization (Groshev, Yuryev, 2010).

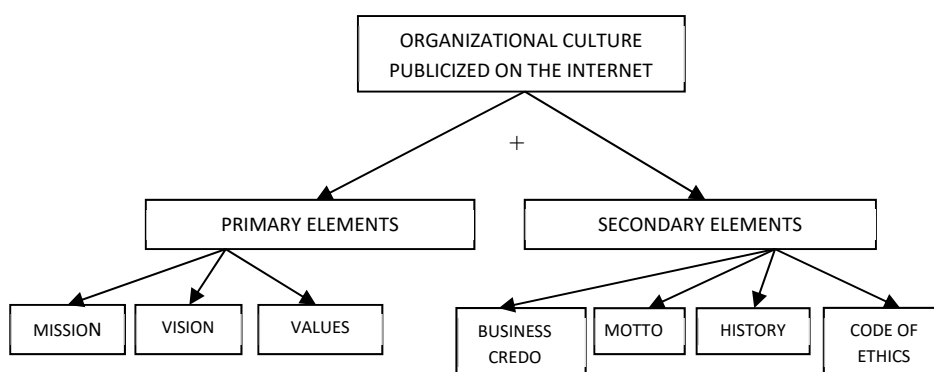
Other authors (Rothaermel, 2017) add to the above two elements the vision as an important structural element of the publicized culture. The vision identifies the future of the organization by considering the current circumstances, strengths and weaknesses, combined with opportunities for development. In business management, the vision outlines the long-term goals of the organization (Taiwo et al., 2016). Commenting on the power of the mission-

vision-values trinity in his research, MacLeod (2016) emphatically states that “successful organizations will be those that are steadfast in pursuit of their vision, unfailingly true to their mission and unwavering in adherence to their values”.

Along with these three clearly defined and strongly supported positions, there are many other points of view that focus on other elements of the publicized organizational culture: for instance, Serafimova (2007) accentuates on organizational principles, Makeev (2012) emphasizes on organizational history, etc. On the basis of these views, it can be concluded that the organizational culture publicized online is actually an amalgam of documents of lower or higher priority, whose purpose is to present information about the strategic priorities of the relevant organization in a multifaceted and appropriate manner.

The above finding is the foundation of our understanding of the matter discussed here. We believe that the organizational culture publicized online can include primary (key) and secondary (additional) documents/attributes (Figure 1).

**Figure 1. Structure of organizational culture publicized on the Internet**



Source: Authors' research

The organization's mission, vision and values (principles) are of primary importance, given their role in its strategic positioning.

The mission is the purpose of existence, the “global strategic ambition” (Lasserre, 2018) of the organization and its presence as an element of the official cultural attributes proclaimed online is absolutely obligatory. The primary importance of the mission stems from the fact that it is equivalent to the basic ideology of the organization, which includes, according to Sufy and Lyons (2003), the organization's basic values and goals (Dimitrov, Ivanov, Geshkov, 2018). The mission identifies each organization and its online proclamation should communicate important information related to the needs being satisfied, the target audience, the products and/or services offered, the philosophy of the organization, etc. For example, Harvard College's mission statement posted on its website reads “Our mission is to educate the citizens and citizen-leaders for our society. We do this through our commitment to the transformative power of a liberal arts and sciences education”. The mission of the University

of Cambridge is “to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence”.

The vision should go “hand in hand” with the mission, as it informs the interested parties about the global goal pursued by the organization. Its significance, as an element of strategic direction and official culture, is no less than that of the mission, as it defines the state that “the organization ultimately wants to achieve” (Rothaermel, 2017), thus laying the foundations of the goal-setting process. However, its importance (and equal standing with the mission) has only been realized in the last 20-25 years, both by the top management of organizations and by theorists in the field of strategic management. Drawing on the example already mentioned, the vision of Harvard College is “We have committed to creating and sustaining the conditions that enable all Harvard College students to experience an unparalleled educational journey that is intellectually, socially, and personally transformative”.

The University of Cambridge website states that “Our vision is to enhance our reputation as a world-class teaching and research institution which is recognized for its innovation, excellence and discovery, and attracts the best students and staff worldwide”.

Values/principles are the key priorities in an organization’s activities. As such, they complement and concretize the global strategic intentions indicated in the mission and vision statements. In this regard, an organization’s value system consists of “a statement of principles to guide an organization as it works to achieve its vision and fulfil its mission” (Rothaermel, 2017). According to Makeev (2012), values can be explicitly declared, but they can also be merely implied. Nevertheless, we believe that in order to build the desired image of the organization and communicate it successfully in the market, both the drawing up of a written code of values and its proclamation on the official website of the organization are mandatory. To illustrate the harmonious relationship between mission, vision and values within the organizational culture publicized online, we can refer here to the core values of the University of Cambridge, forming the value system of the educational institution: freedom of thought and expression; freedom from discrimination.

The online presence of these three key elements of the official organizational culture (mission, vision and values) is mandatory in order to convey a complete and clear message about the significant strategic intentions of the organization. At the same time, it can be argued that the presence on the websites of the institutions of a greater number of secondary elements, in addition to the mandatory ones, leads to a higher degree of publicization of the official culture and, accordingly, to a higher contribution to building the desired image of the organization in its external environment.

### **3. Methodology and Limitations of the Research**

The methodology of the research is consistent with the goal and tasks of the study on which basis the specific research methods were selected. The methodology of the conducted research is based on the systematic approach, as it assesses the degree of development of the organizational culture publicized online as a system of its primary elements. The

methodological toolkit used includes the methods of analysis and synthesis, descriptive statistical analysis, content analysis and the method of comparison. The analysis has the following directions:

- Determine the number and relative share (in %) of higher education institutions that have publicized on their official websites the individual primary elements of organizational culture;
- Determine the number and relative share (in %) of higher education institutions with  $n$  ( $n = 1, 2, 3$ ) primary elements of the publicized organizational culture;
- Outline the main characteristics of the substance of the primary elements of organizational culture.

The research was conducted on the basis of information from the official websites of the higher education institutions in Bulgaria, which are the main channel for communicating and proclaiming their official organizational culture and strategic priorities.

The limitations of the present study have been outlined as follows:

- The research was conducted in the period September – December 2022, based on a survey of only the official websites of higher education institutions in Bulgaria.
- All higher education institutions (52) appearing in the “Register of Higher Education Institutions” maintained by the National Centre for Information and Documentation in the above research period have been covered.
- The analyses, evaluations and conclusions have been made on the basis of the results of the survey of the higher education institutions that have publicized online at least one of the primary elements of their official organizational culture.

#### **4. Results and discussion**

##### *4.1. The state of higher education sector in Bulgaria in the context of modern challenges and trends*

Within the system of higher education, knowledge is spread and created, human capital is formed and developed as the main factor of socio-economic development. (Kirova, Zareva, Matev, 2017). Nowadays higher education institutions around the world face challenges that affect not only their functioning but also their very identity as institutions. The development of information technologies, the transition from elitist to mass higher education and the rapidly changing and open labour market bring about changes also in the role and functions of higher education (Strategy for the Development of Higher Education, 2021). Higher education has an indisputable role in several aspects – developing new knowledge, using available knowledge to develop innovations and competitive technologies, inciting an entrepreneurial spirit, assisting companies and the administration to competently and scientifically solve the problems they face.

In recent years, the higher education system in the Republic of Bulgaria underwent significant changes under the influence of a number of external and internal factors. The traditional lecture hall-based model of higher education is increasingly competing with mass online courses offered by various platforms and organizations.

Nowadays the labour market experiences accelerating and difficult to predict dynamics. Technological changes and innovations alter the necessary competencies required for the labour market. In this regard, Stanimirov (2021) points out that the adaptation of specialists with higher education to the specifics of the working environment depends on a number of trends and factors that can be divided into two groups. Some of these are not tied to educational institutions – the worldwide processes of globalization, the rapid development of technologies, the entry into the era of the “high-tech knowledge economy”. However, other factors are entirely within the competencies of the educational institutions and can be influenced by the manner of operation of the higher schools, including the application of a traditional or an interactive approach to the educational process; analogue, digital or hybrid teaching framework; student motivation, etc. This urges the education system to adapt to global challenges and changes, on the one hand, and on the other – to ensure that students will receive the necessary knowledge, skills and competencies for successful career development (Stanimirov, 2021). Problems arise from the lack of clarity in the strategic visions of universities regarding their main functions related to education and learning, to the development of fundamental and applied research, innovation and entrepreneurial skills, as well as to their social responsibilities (National Map of Higher Education, 2021). According to Desjardins (2015), the idea that higher education performs only an educational function is utterly untenable, as higher education has an important impact on the views of citizens in any society. Educational institutions at all levels, and especially higher education institutions, have the potential to provide specific knowledge that is subsequently transformed into social skills. In the XXI century, universities make a significant contribution to shaping the future of society – a well-developed higher education system contributes to a country’s ability to compete on the global market and is crucial for economic strength and social well-being. Higher education is increasingly perceived as a tool to achieve certain socially significant ideas (Maassen, Olsen, 2007) such as democratization, social mobility, economic development and innovation.

The demographic processes of population ageing and changes in its age structure, common to European countries, have a clear manifestation in our country. According to data from the National Statistical Institute, the birth rate decreased from 10.00 (in 2010) to 8.5 (in 2021). The most serious challenge related to demographic problems that face higher education is the rapid decrease in the number of applicants and, respectively, in the number of enrolled students.

Here we must consider as a factor the high degree of competition from higher education institutions in other EU member states offering easy access, distance learning programs and free education, causing an outflow of Bulgarian applicants towards them.

Other factors contributing to the school-leavers’ interest in educational institutions abroad are the underdeveloped business environment in Bulgaria; the low remuneration of specialists with higher education in some professional fields (especially at the beginning of their careers); the excessively high concentration of businesses and public administration in the

capital city, while provincial regions remain underdeveloped and with little potential to provide the living conditions sought by young professionals, etc. (Stanimirov, 2015). These factors inevitably lead to a lowering of the criteria for admission to universities, a lowering of the requirements for students during the course of study due to mass admission, etc., which affects the quality of education.

Another serious problem faced by universities in Bulgaria is the insufficient internationalization of Bulgarian higher education. This problem consists in the insufficient international prestige of Bulgarian higher education institutions and in the lack of recognizable competitive advantages of Bulgarian higher education. According to Pinheiro et al. (2015), at the current stage there is a growing need for universities to improve the quality of education and to link their main activities (both education and scientific and applied research) more narrowly with the development of the economy and innovations in the country (nationwide and regionally). Academic education cannot be separated from scientific research, as they are in a constant co-dependence. Universities are increasingly seen as crucial actors in innovation ecosystems as they can contribute to sustainable growth and prosperity. Higher education institutions not only generate new knowledge – university professors provide consultancy and specialized expertise for ongoing research and development activities in businesses (Wolfe and Bramwell, 2008). Therefore, the concept of a modern university implies a relationship between education and research that serves the common goal of preparing highly educated and competitive professionals for the labour market (Gläser, Lange, 2007) worldwide.

The massification of higher education in the 1990s played a positive role in that it ensured democratic and broad access to higher education. At the same time, it was one of the factors that negatively affected the quality of higher education. To remedy this problem, an effective system of incentives and restrictive measures is needed to continuously improve the quality of education. To some extent, this has been achieved by introducing a higher education funding model tied to quality rather than to the number of students enrolled, as well as by an administrative reduction of the state-subsidized allotments for students in professional fields where the number of graduates significantly exceeds the demand on the labour market and makes professional realization difficult. The large number of higher education institutions also has brought about negative public attitudes, especially when seen against the background of the demographic crisis, which some time ago gave rise to the idea of a consolidation of universities. According to the authors, the implementation of this idea would rather lead to a mechanical reduction in the number of universities in the country and would inevitably result in serious upheavals in the higher education sector.

The Register of Higher Education Institutions at the National Centre for Information and Documentation currently includes 52 universities. This large number enables wide access to higher education, but, in itself, does not negatively affect the quality of education. In addition, the key role of higher education institutions in the development of the regions should be considered. It is not so much the number of universities that has a negative impact, but the fact that some of them offer education in professional fields and degree programs that are not typical for them.

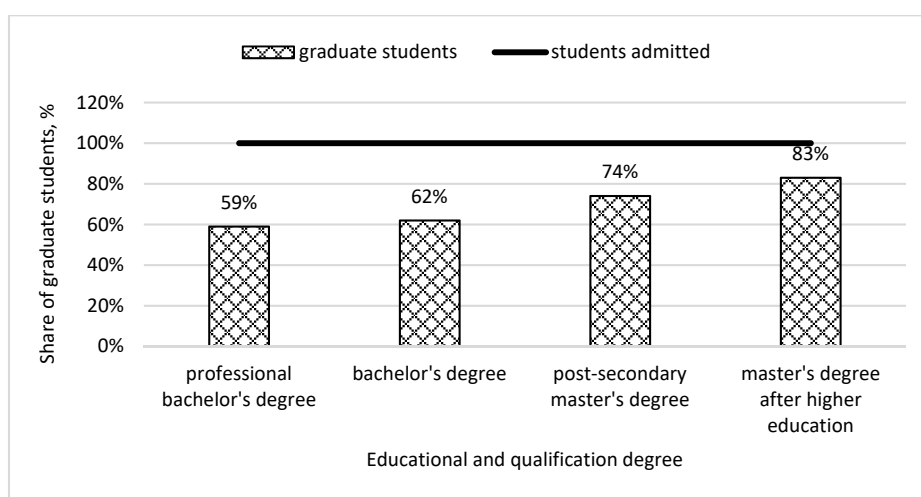
Moreover, at present, well-established traditions in the development of higher education collide with the completely different educational needs of the young generation, which causes an intellectual and technological confrontation between professors and students, leading to professional dissatisfaction of the former and disappointment with Bulgarian higher education institutions on the part of the latter. Today's universities are expected to prepare specialists with the knowledge, skills, and moral and ethical responsibility to participate fully in the new global economy (Chan, 2016), to show an active civic position and a desire for personal development (Lambert, 2014). Successful professional realization of young people now requires both academic knowledge and a rich set of skills and competences, which must be mutually integrated. According to Bates (2019), this increases the demands on those involved in teaching and learning – their own level of knowledge and skills must constantly be raised to be adequate to these demands.

The existing profile and territorial structure of higher education show imbalances of different nature and extent, including with regard to the demand and supply of educational services and the realization of graduates on the labour market by professional fields and specialities in the regulated professions, as well as by regions (National map of higher education in the Republic of Bulgaria). The total capacity determined by the National Evaluation and Accreditation Agency for all professional fields in all higher education institutions is 407,616 students. This is almost twice the number of active students in the academic year 2021/2022 (220,439 people). On average, the number of active students in Bulgaria constitutes 54% of the total capacity determined by the National Evaluation and Accreditation Agency. The free and unused capacity is unevenly distributed by professional fields and specialities in the regulated professions – the smallest degree of use of the available capacity is observed in the professional field “Mathematics” (19.1%). In recent years, the serious discrepancy between the number of graduate students and the number of those enrolled four years before has been striking. In total for the country, the number of Bulgarian citizens who graduated with the academic degree “Bachelor” in the last five years constitutes 62% of the number of admitted Bulgarian students for the same degree four years before (Figure 2). The differences between the individual professional fields in this regard are also significant. Only in 7 professional fields does the share of graduates exceed 70%, while in 20 professional fields, the number of graduates is less than 50% of the number of admitted students. This is probably related to the problem facing higher education in the country highlighted by Zareva, Matev and Kirova (2014), i.e. the declining quality of primary and secondary education. International studies (PISA, TIMSS, PIRLS) show a continuous unfavourable trend in this regard.

In addition to the above, a range of other problems and challenges faced by the higher education sector in Bulgaria can be outlined: very large regional differences in the opportunities for attracting investment and for professional realization of students; an insufficient share of students studying in joint programs with foreign higher education institutions; cumbersome and inefficient procedures for evaluation and accreditation of higher education institutions; insufficient funding of the higher education system; insufficient cooperation with employers in some higher education institutions, etc. (National Map of Higher Education, 2021). Here we should also include the Covid-19 pandemic, which affected a number of spheres of the economy and public life, including the education sector. A report examining the impact of Covid-19 on higher education around the world states that in almost all higher education institutions the normal course of the education process has

been disrupted – in some of them the studies have been suspended, and in 2/3 of the surveyed universities, in-person learning has been replaced by distance learning (Marinoni et al., 2020). As far as our country is concerned, a survey conducted among nearly 25,000 students in the period April – June 2020 (during the state of emergency) shows that 95% of university students had switched to an online form of education, over two-thirds of them were satisfied with the created prerequisites for successfully completing the academic year. Dissatisfaction with various aspects of online learning (regularity and quality of classes) is expressed by between 14 and 21% of respondents. The most significant problem related to online learning is the creation of suitable conditions for teamwork (Analyze za Rejtingovata sistema na visshite uchilishta v Bulgaria).

**Figure 2. Relative share of graduate students compared to the number of students admitted four years before (in %, by degrees)**



Source: Compiled by the authors based on data from the National Map of Higher Education in the Republic of Bulgaria.

All these problems require improvements to be made to the system of higher education in the country, which is directly linked to the adaptability and efforts of higher education institutions for better positioning. Stanimirov (2015) points out that in recent years processes have been identified that stimulate higher education institutions to rethink their competitive positions and encourage them to show a higher degree of flexibility and adaptability to new market realities, but now from the position of active, business-oriented entities. Therefore, globally, colleges and universities are beginning to be driven by economic goals and market-oriented values (Thompson, 2014). The differentiation of the mission, image and territorial importance of higher education institutions should be regarded as an effective means of adapting to the growing demands of the labour market. In the conditions of heavy competition on the educational market, it is of particular importance for universities to build a unique image in the eyes of all interested parties: potential and existing students, business structures, public institutions, partner organizations, etc. This necessitates the need to use the potential



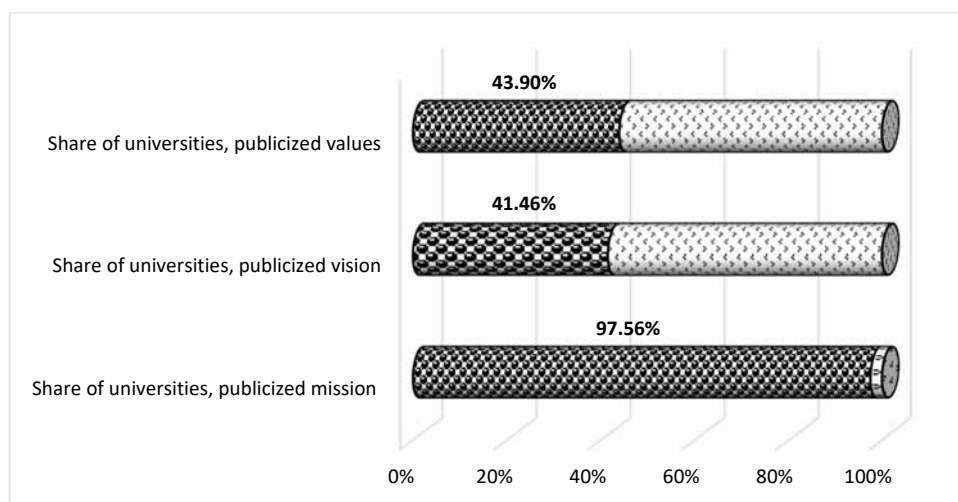
of the toolkit of the culture, “woven” into its official documents and manifestations. A great contribution in this regard is made by the elements of the organizational culture of higher education institutions publicized online, presenting their global strategic priorities.

#### 4.2. Analysis of the primary elements of the organizational culture of higher education institutions in Bulgaria published online

It was found that in the case of 51 of the 52 universities studied, elements of the proclaimed organizational culture are indeed present, i.e. 98% of universities realize the importance of communicating strategic priorities online. Based on this information, it can be argued that, in general, higher education institutions in Bulgaria rely on the organizational culture proclaimed online to publicize their strategic intentions and distinguish themselves from competing universities.

The first aspect of the study concerns the determination of the relative share of higher education institutions that have publicized primary elements of their organizational culture, as well as of their distribution. It makes a positive impression that over 80% (41 universities) have publicized at least one of the primary elements of the organizational culture – either mission, vision or values/principles, which is indicative of the awareness of their strategic importance. However, it should be pointed out that this is almost entirely due to the mission statement (97.56%), and to a much lesser extent to values (43.9%) and vision (41.46%) (Figure 3).

**Figure 3. Relative share (in %) of higher education institutions that proclaimed a mission, vision or values among all that have proclaimed primary elements of organizational culture**

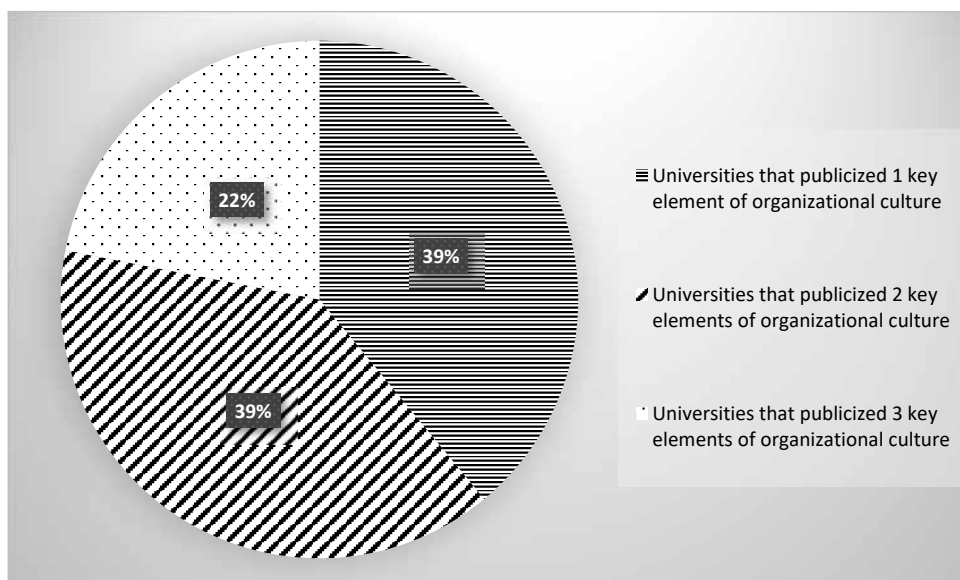


Source: Compiled by the authors based on information from the official web pages of the universities.

Only one of these 41 higher education institutions has not publicized a mission statement, while more than half have not proclaimed a global goal or institutional principles. Based on this, it can be concluded that in the context of the strategic development of educational institutions, academic governors give much more weight to the philosophy of their existence than to their place and priorities in the scientific and educational sphere. Here it should be noted that despite the awareness of the mission as an important strategic priority, some universities have not dedicated a special place for it on their official websites, and in order to find it, one must go through the Mandate Program, the Strategic Development Plan or another strategic document of the respective institution.

Regarding the degree of prevalence of the primary elements in the published organizational culture of higher education institutions, a number of conclusions can be drawn. The results show that 16 universities have proclaimed one (39.02%), another 16 – two (39.02%), and only nine universities (21.95%) – all three key elements of organizational culture (Figure 4).

**Figure 4. Relative share of universities that proclaimed primary elements of organizational culture (according to the number of primary elements included)**

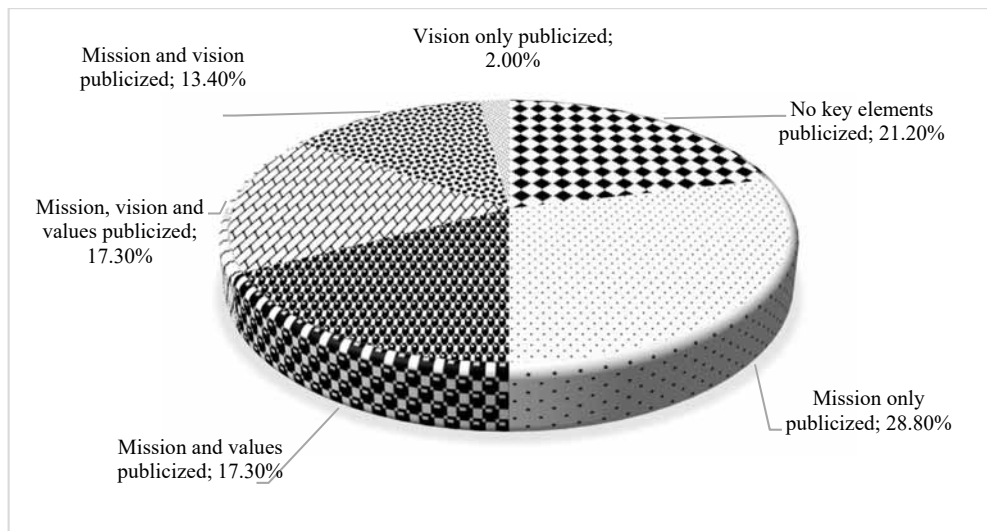


Source: Compiled by the authors based on information from the official web pages of the universities

When compared to the total number of higher education institutions where elements of the organizational culture have been identified (51), it can be seen that one primary element is present on the websites of 31.37%, two primary elements – of 31.37%, and the full set of all three elements – on the websites of only 17.65% of universities. These data confirm the conclusion of insufficient use by higher education institutions of the potential of key aspects of organizational culture to communicate their long-term policy.

Important information in terms of the communication strategy of higher education institutions and its messages is provided by identifying the preferred combinations of primary elements of the publicized organizational culture. Several preferred configuration options can be observed (Figure 5). Fifteen universities have published only a mission statement on their websites, representing 28.8% of all higher education institutions in the country and 36.59% of those that have published key elements; mission and values have been proclaimed by 9 universities (17.3% of all and 21.95% of those that have published key elements). A mission, vision and values statement is available on the websites of 9 universities, representing 17.3% of all higher education institutions and 21.95% of those that have proclaimed key elements of organizational culture.

**Figure 5. Preferred combinations of primary elements of organizational culture published on university web pages**



Source: Compiled by the authors based on information from the official web pages of the universities.

Mission and vision statements are available on the websites of 7 higher education institutions (13.4% of all and 17.07% of those that have publicized key elements). Kokemuller and Media (2015) point out that mission and vision are important elements of organizational culture that serve as a foundation for the strategic and tactical goals of the respective organization. Mission and vision statements are tools for communication with both internal and external stakeholders, they show the image and uniqueness of the organization (Darbi, 2012). Only a vision statement is publicized on one university's website. There are no higher education institutions in Bulgaria that have publicized only values or a combination of vision and values.

These results lead to the conclusion in configuring the core of key elements of the official culture of educational institutions publicized online, the mission is most common, regardless of whether it is published exclusively or in combination with some of the other primary

elements. This means that its role as a communication tool is fully realized by the academic governors and it is embodied purposefully in an official document. According to Bowen (2018), the mission signifies the pursuit of a goal that is unique and reveals the organization's competitive advantages and specific strengths over competitors. The most appropriate mission statements are usually general enough to drive the strategic pursuit of multiple organizational goals, yet specific enough to focus on and prioritize organizational activities and resources. Moreover, according to Esi (2013), defining, affirming and concretizing the mission of any organization involves taking into account the social and economic context in which it is crafted. Communicating the mission helps management organize the hierarchy of priorities in the short and long term.

At the same time, it can be argued that the importance of vision and values is not yet fully realized. According to Esi (2013), the vision, unlike the mission, involves both establishing values and outlining directions for the organization to follow. The vision is future-oriented and describes how a university would like to be positioned in the educational services market in 10, 15 or 20 years. It embodies the long-term ambition of how an organization would like to develop in the future relative to its competitors. In this regard, vision statements are key drivers of organizational innovation, employee engagement and motivation, performance and success in a highly competitive environment (Bowen, 2018). The lack of a clearly formulated vision prevents some universities from successfully communicating their aspirations and principles to interested parties (applicants, active students, business organizations, state and municipal administrations, etc.). The study of the essence of the primary elements of the publicized organizational culture of the universities in Bulgaria allows us to identify their characteristic features and specifics.

The analysis of institutional *mission* statements reveals that they include a wide variety of components, which, according to the authors of the present study, can be divided into 4 groups: leading, secondary, peripheral and specific.

The leading components of the mission comprise those related to the nature of the activities of the universities: training of highly qualified specialists in the relevant fields of higher education; quality of training; development of fundamental and applied research; successful professional realization of the graduates. We believe that the leading components form the basis on which the philosophy of higher education institutions is built and serve as a starting point in the goal-setting process.

Secondary in substance are those components that occur relatively often, but are of lower importance than the leading ones. These include: innovative practices in education; enterprise; social responsibility of the institution; academic traditions; active cooperation and partnership with business, etc.

Peripheral components are less often used in mission statements to demonstrate the strategic priorities of educational institutions. Among these are: making leaders; community engagement and service; patriotism; responsibility; improvement of the educational environment; autonomy; digitalization, international cooperation, work on projects, etc.

The specific components stem from the nature of the professional field in which the higher education institution conducts training. Examples of these include:

- in higher schools for military training – “participation in projects for maintaining peace and security” (Bulgarian Air Force Academy “Georgi Benkovski”), “scientific support of the transformation of the naval forces” (Naval Academy “Nikola Yonkov Vaptsarov”), “defence leadership skills” (Military Academy “G. S. Rakovski”);
- in medical universities – “to participate in improving and maintaining the health of the population” (Medical University – Pleven), “to improve the health of the nation” (Medical University “Prof. Dr. Paraskev Stoyanov” – Varna);
- others – “improving the safety of society and developing the character of the built environment” (Higher Construction School “Lyuben Karavelov” – Sofia), “be a factor in the creation and development of Bulgaria’s potential to ensure its raw material and energy independence” (University of Mining and Geology “St. Ivan Rilski” – Sofia), “preservation and development of the Bulgarian artistic genius” (Academy of Music, Dance and Visual Arts “Prof. Asen Diamandiev” – Plovdiv), etc.

Based on the analysis of the missions of Bulgarian higher education institutions declared on the Internet, a number of findings and conclusions can be made. The first of these is that both modern and stereotypically formulated missions (in terms of the nature of the elements included in their composition) can be seen online. It is noteworthy that in the case of the stereotypically formulated missions (University of Chemical Technology and Metallurgy – Sofia, Luben Groys Theatre College – Sofia) only the leading components are typically included, while the more modern sounding missions (e.g. of the University of Economics – Varna) focus on the modern priorities of educational institutions.

Broadly and narrowly defined missions are observed depending on the scope of the professional fields in which the respective university conducts training. Broad statements are mostly found in higher education institutions that train students in multiple professional fields (University of Veliko Tarnovo “Sts. Cyril and Methodius”, Konstantin Preslavsky University of Shumen), while narrowly formulated missions are declared by more narrowly specialized institutions (Technical University – Sofia, Naval Academy “Nikola Yonkov Vaptsarov” – Varna).

In terms of the object on which the emphasis of the message is placed, we see both missions that are focused on the university and its stakeholders (Burgas Free University, Varna Free University “Chernorizets Hrabar”, Higher School of Insurance and Finance – Sofia, etc.), and such that are socially engaged, focused on society and its development (New Bulgarian University – Sofia, Paisii Hilendarski University of Plovdiv, Sofia University “St. Kliment Ohridski”, etc.).

In the course of the study, it was established that the mission statements of some higher schools (e.g. Agricultural University – Plovdiv, “Prof. Dr. Asen Zlatarov” University of Burgas, “Angel Kanchev” University of Ruse, etc.) feature the vision (the global goal) as part of the mission. We believe that this is an inappropriate managerial approach, as the vision has its own place as a strategic document identifying the desired place of the higher education institution in the educational and scientific sphere.

The *visions* proclaimed on the websites of the universities in Bulgaria are also characterized by significant nuances. It is evident that the academic governors wish to position the

institutions they manage as “leading centres” or “leaders” in the educational and scientific sphere. Innovation, entrepreneurship, the quality of education and the European identity of educational institutions are most commonly indicated as the main tools for realizing these global goals. The focus of the aspirations of each of them is also of interest. In this regard, we see an aspiration to leadership in general (University of Economics – Varna, Varna University of Management, etc.), or to leadership at the national (Medical University “Prof. Dr. Paraskev Stoyanov” – Varna, Dimitar A. Tsenov Academy of Economics – Svishtov), regional (University of National and World Economy – Sofia, Medical University – Sofia) or international level (Sofia University “St. Kliment Ohridski”, Technical University – Varna). Based on the conducted analysis, it can be concluded that in a large part of higher education institutions, the approach to defining and publicizing long-term aspirations is correct and contributes to relevant communication with partners and building the desired institutional image. Nevertheless, it is necessary to take note of the identified weaknesses. For example, in the case of several higher schools (“Prof. Dr. Asen Zlatarov” University of Burgas, Higher School of Construction “Lyuben Karavelov” – Sofia, European Polytechnical University – Pernik, Military Academy “G. S. Rakovski” – Sofia, etc.), the vision exists as an official attribute of the organizational culture, but is nevertheless not proclaimed on the website itself; instead, it appears in one of the institution’s strategic documents (Mandate Program, Development Strategy, etc.). This makes the vision hard to find and practically deprives it of its communicative value.

It is also striking that some universities (University of Forestry – Sofia, University of Food Technology – Plovdiv, University of Chemical Technology and Metallurgy – Sofia) have formulated the vision incorrectly, which is indicative of unawareness of its meaning and role as a global goal of the organization. This is an indication of the need to improve the strategic management skills of the relevant management teams and academic governors.

According to Cortese (2003), higher education institutions have a moral responsibility to increase the awareness, knowledge and skills of young people, to shape the values necessary for building a sustainable future. According to Wendler (2016), when formulating values and principles as elements of the organizational culture, a complex set of factors must be considered – not only internal to the organization, but also those of the environment. At present, such factors include, for example, adaptability to change; knowledge-based work; decentralization of power, etc. Felipe, Roldán and Leal-Rodríguez (2017) point out that the values and principles of organizations may emphasize flexibility, adaptability and dynamism, or the exact opposite – on stability, order and control. This element of organizational culture often focuses on integration, cooperation and unity.

The study of the publicized *values/principles* of institutions in the higher education sector in Bulgaria shows that they are a logical consequence of the declared missions and in practice concretize them, bringing to the fore the leading priorities of the institution’s policy. In this regard, the in-depth analysis allows drawing several major conclusions. The first is that it is possible to identify both universal human priorities (trust, fairness, understanding, honesty, equality, etc.) and pragmatically-oriented priorities (innovation, quality, efficiency, reliability, integrity, etc.) in the amalgam of proclaimed values. It should be noted that, from this point of view, universities can be placed into three groups: proclaiming only universal human values (European Higher School of Economics and Management – Plovdiv);

proclaiming only pragmatically-oriented values (European Polytechnical University – Pernik, University of Mining and Geology “St. Ivan Rilski” – Sofia, etc.) and proclaiming a combination of both types of values (University of Economics – Varna, Medical University “Prof. Dr. Paraskev Stoyanov” – Varna).

The analysis carried out from the point of view of the nature of the values/principles established that they are divided into universal (honesty, sustainability, creativity, partnership) and specific (moral and volitional education, maritime lifestyle, imagination, etc.). Quite naturally, universal values appear in the value systems of all educational institutions, regardless of their profile, while specific values are inherent in higher schools conducting training in specific professional fields (Naval Academy “Nikola Yonkov Vaptsarov”, National Military University “Vasil Levski” – Veliko Tarnovo, Academy of Music, Dance and Visual Arts “Prof. Asen Diamandiev” – Plovdiv).

It was established that the value core of Bulgarian higher education institutions is built on the following key priorities:

- *innovation and creativity* in work;
- *high quality* of education and research;
- *socially responsible and sustainable behaviour* of professors, employees and students;
- *freedom of thought and expression*, an expression of academic freedom;
- *integrity, ethics, honesty and fairness* in behaviour and communication.

In our opinion, these values build the foundation that underlies the modern organizational culture of educational institutions in Bulgaria. At present, an increasing number of universities are focusing on adopting ethical values and ethical standards as essential components of organizational culture. The reason is that organizations must constantly show their potential “clients”, investors or partners, and also competitors, that they adhere to universally cherished moral values (Bulog and Grančić, 2017).

An essential moment in making higher schools’ official organizational culture public is also the announcement of plans for gender equality on their web pages (in connection with applications under the RP “Horizon Europe”). In this regard, A. Kirova (2022) points out that as of mid-August 2022, only 12 out of 52 higher education institutions in Bulgaria had fulfilled this criterion, which is an indicator of a low preparedness for applying under the current program targeted at research and innovation, as well as of a lack of interest in the issue of gender differences and imbalances in a considerable part of institutions.

## **5. Conclusions and Recommendations**

The conducted study of the publicized organizational culture of higher education institutions in Bulgaria showed its key importance for communicating their strategic orientation and priorities to the external environment. As a result of the conducted study, the following conclusions could be made:

1. It was established that the primary element of utmost importance for universities is the mission, and that the least important is the organizational vision. At the same time, it can be argued that the lack of a formulated and publicized global goal in over 80% of universities is a sign of uncertainty as to what their desired positioning in the educational sphere might be.
2. The mission statements of higher education institutions demonstrate their philosophy of presence in the educational “market” based on novel training of qualified specialists, high quality of education, development of fundamental and applied scientific research and successful professional realization of graduates.
3. Innovation, high quality of education, socially responsible behaviour, freedom of expression and integrity in communication are key priorities in the value cores of educational institutions. They outline significant factors for the authority and successful functioning of higher schools in the educational environment.

In view of the revealed weaknesses in the public announcement of the official organizational culture, the following recommendations can be made to the academic management of higher schools:

1. To develop a more balanced portfolio of strategic priorities, in which, in addition to the mission, a vision and values/principles consistent with it should be disclosed.
2. The proclamation of the main elements of culture should be enriched with the publication of appropriate secondary elements, through which the uniqueness of higher schools in the educational environment should be emphasized.
3. To elaborate on the formulation of the mission, vision and values/principles, as the main strategic documents of higher schools, while complying with the rules of strategic management.

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## THE EFFECT OF FINANCIAL RISK MANAGEMENT ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN WESTERN BALKAN BEFORE AND DURING COVID-19<sup>3</sup>

*Financial management crises all over the world have demonstrated the need for risk management techniques for businesses seeking to maintain shareholder and consumer support. The purpose of this study is to assess the impact of risk management on the financial performance of commercial banks in the Western Balkans (WB) before and following COVID-19 for the years 2016-2021, with 40 commercial banks selected to represent all WB countries' commercial banks as a whole. The study revealed that risk management has a significant impact on the financial performance of WB commercial banks as assessed by Return on Assets (ROA) and Return on Equity (ROE). The research was done through the panel regression using fixed and random effect, whereas a dependent variable we have ROE and ROA and as independent variables, we have Solvency risk, Liquidity Risk and Credit Risk and COVID-19 as a dummy variable. Based on the panel regression model, it is found that the four independent variables have a significant impact, in the dependent variable. The results of this study lead us to recommend that central banks maintain strict rules about the minimum amount of equity required or the requisite ratios for deposits and loans. Since credit risk has a detrimental effect on the profitability of commercial banks, keeping a tight eye on lending activities and paying special attention to non-performing loans is also crucial. Keywords: Banking Sector; credit risk; liquidity risk; solvency risk; financial performance  
JEL: G21; G32*

### 1. Introduction

The financial system in WB, which is mostly comprised of banking, is one of the most important areas of an economy. Commercial banks, with a substantial presence of banks with foreign capital, make up the financial systems of BP nations. This sum is held by banks in Austria, Italy, France, and Greece. The financial system and the capital market of foreign

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languages have benefited from the privatization of the banking industry in BP nations since the financial system's increased variety has made it possible to raise financial values. The coronavirus disease of 2019 (COVID-19), which causes severe acute respiratory syndrome, is caused by the infectious virus known as coronavirus 2. (SARS-CoV-2). Wuhan, China, announced the first case finding in December 2019. The disease has now spread around the world, resulting in an ongoing epidemic. The COVID-19 pandemic has had an impact on people all around the world in addition to spreading the disease and attempting to contain it. Nearly all economies in the globe have seen a decline in economic activity since the coronavirus emerged, particularly those with small and open economies like those in the Western Balkans. Because the financial crisis has affected the industry hardest, tourism-dependent nations like Montenegro and Albania have experienced a major decline.

The banking industry was one of the main sectors of the WB economy that was impacted by COVID-19. The pandemic had several negative effects on banking activity, including increased effort and cost to ensure security for employees and customers, the need to reorganize most of the activity to use a remote work strategy, a decrease in income due to a slowdown in lending activity during the first half of the year, and an increase in loan provisions as a result of the deteriorating financial situations of borrowers. The COVID-19 outbreak, which tested the Balkan economy in general and the banking system in particular, was unpredictable, yet despite this, the financial sector remained steady and liquid. In addition to restructuring loans for insolvency, one of the biggest challenges was carrying on with business as usual in a situation that was anything but normal. All banks operating in the WB were able to overcome this challenge, maintaining financial stability and demonstrating once more their crucial role in the recovery of the nation's economy. In each of the WB member countries, the banking sector is thought to be among the most lucrative. An appropriate market has been identified for the more than 100 commercial banks operating in the market, the majority of whom have foreign capital. They offer a variety of services, including accounts, various loan types, payments both inside and outside the nation, debit and credit cards, bank guarantees, letters of credit, and more.

## **2. Literature Review**

The health of the banking sector is crucial to the health of the country's economy since it serves as a cornerstone of the financial system in the Western Balkan countries. One of the topics that many economists and scholars in these nations study and keep a close eye on is the financial performance of this industry.

Also considering that provisions for loan losses have the potential to significantly lower net income and consequently negatively influence banks' capital strength, they are of enormous importance (Huizinga, Laeven, 2019; Krüger, Rösch, Scheule, 2018). Due to this, a lot of scholars and professionals have looked at how loan loss provisioning influences bank stability and lending practices, especially during times of financial crisis (Beatty, Liao, 2011; Agénor, Zilberman, 2015). Governments should work to provide the conditions that will sustain the stability of the banking sector given the costs connected with protracted financial crises and recessions (Hoggarth, Reis, Saporta, 2002; Dell'Ariccia, Detragiache, Rajan,

2008). Because of this, there have been some regulatory reforms implemented since the global financial crisis, with Basel III's introduction and the projected loss provisioning criteria being two of the most recent. The goal of these regulation changes is to lessen procyclicality to avoid financial crises and ensure the availability of bank credit during a recession.

Numerous studies have found that everything that affects a country's economic growth also affects the banking industry, leading to a rise in loan loss provisions, which serve as the primary expenditure in commercial banks. Pandemics, however, have a variety of effects on the banking sector.

The literature review is structured by focusing first on the impact of COVID-19 on the world economy and its differences and similarities with the Spanish flu.

De Santis & Van der Veken (2020) assert that the COVID-19 pandemic is a calamity with unavoidable economic repercussions. Our knowledge of the Spanish flu's effects indicates that the economy will see a severe double-digit collapse. The Spanish Flu had a negative impact on the country's real per capita GDP, which fell from 29.1% in 1918 to 10.9% in 1919 to 3.6% in 1920.

On the other hand, the analysis conducted by the World Bank Group (Maliszewska, Mattoo, Van Der Mensbrugge, 2020) predicted a worldwide GDP decline of up to 3.9%, with poor nations suffering the most (4% on average, but some above 6.5%).

In their study, Carlsson-Szlezak, Reeves, & Swartz (2020) forecast that a genuine global recession will occur. A continuing Capex boom cycle is a true recession. However, external forces or disasters like wars, other disturbances, or in our case, the epidemic, can also cause the actual economy to decline.

According to a Wall Street Journal survey of 60 analysts conducted in April 2020 and published in Stock (2020), the estimated recovery by the end of 2021 will still leave the economy around 4 percentage points behind where it had been anticipated to be before the pandemic hit. The anticipated second-quarter collapse will be far more severe and profound than the financial crisis collapse.

Numerous research has been conducted about the effects of pandemics, particularly COVID-19, on the banking industry in general. Çolak & Öztekin (2021) concluded in their research that the impact of the pandemic relies on how well the bank as a whole is performing financially and how the public health sector handles the problem.

Stress tests were carried out by Yarovaya, Mirza, Rizvi, & Naqvi (2020) to evaluate the COVID-19 loan portfolios of 255 financial institutions in the 10 most impacted EU member states. They have seen a decline in asset quality and an increase in the likelihood of failure based on stress testing. Additionally, they have seen a decline in capital sufficiency in their sample. The finding of the paper conducted by Alshatti (2015) with Jordanian banks shows that profitability is positively impacted by the NPL ratio even when there are a lot of delinquent loans. As a result, Jordanian banks must set up effective plans to deal with credit risk management. On the contrary, the researcher discovered that the leverage ratio has a negative impact on banks' profitability, so businesses shouldn't be heavily reliant on debt

financing because doing so will increase their debt servicing costs and consequently their liabilities, which could have a negative impact on their performance. Additionally, the results demonstrate that credit interest/credit facilities and capital adequacy ratio have little bearing on the profitability of Jordanian commercial banks as measured by ROE.

A study on the performance of non-performing loans during 88 financial crises since 1900 was undertaken by Ari, Chen, & Ratnovski (2019) to better understand loan defaults during pandemics. They concluded that there are similarities in the creation of NPLs during different crises, and the results showed that on average NPLs reach up to 20% of total loans.

The authors Gordon & Jones (2020) projected the effects of the COVID-19 pandemic on loan default rates using three scenarios for increases in unemployment and housing prices. They predict that the rate of loan defaults would rise from 2.3 percent in 2019 to a peak of 3.9 percent in 2025, resulting in \$580 billion in write-offs. The model predicts that NPL will reach 3.1% in 2021 absent adjustments to policy. However, starting in 2021, the NPLs for fiscal transfers, student loan forbearance, and mortgage forbearance will all continue to climb.

When examining elements that have a detrimental influence on LLP, we found that other research had addressed the same problem. According to research, these variables include the economic cycle and the actions of bank management during times of financial crisis. Managers' actions can be either discretionary or non-discretionary. Credit risk is a factor in this non-discretionary behaviour, which aims to cover anticipated future credit losses on loans (Beaver, Engel, 1996; Whalen, 1994). Pro-cyclicality was then noted as a crucial component of providing by Laeven & Majnoni (2002) and Bikker & Hu (2002). They said that firms improve conditions and reduce loan defaults during the economic boom and increased earnings, but the opposite will occur during a recession.

### **3. Methodology**

The research methodology is a road map that, as such, presents a framework to answer the research questions of the study, to allow testing of the hypotheses raised, as well as to analyze the data that informs us about the impact of the control components of the study on the accomplishment of the organization's goals.

The pandemic had several effects on banking operations, including an increase in effort and cost to ensure the safety of both employees and customers, the need to reorganize most of the work to use a remote approach, decreased income as a result of a slowdown in lending activity during the first half of the year, and an increase in loan provisions due to a potential worsening in borrowers' financial conditions.

The purpose of this study is to evaluate the impact of risk management on the financial performance of commercial banks in WB during COVID-19.

The following are the research questions that were used in this study:

1. Before and during COVID-19, did solvency risk influence ROA and ROE?

2. Before and during COVID-19, did liquidity risk influence ROA and ROE?
3. Has the presence of credit risk affected ROA and ROE both before and after COVID-19?

The impact of risk management on the financial performance of commercial banks in WB before and after COVID-19 has been the subject of this study, and we have utilized the descriptive approach to gather data to address research issues and test hypotheses. According to (Salaria, 2012), the descriptive method is essential because it takes into account both the characteristics of the entire population and those of a sample. Additionally, it offers details about regional problems. We utilized panel data for Bosnia and Herzegovina, Albania, Kosovo, Montenegro, Serbia, and North Macedonia from 2016 to 2021. (see Table 1 with variables, and definition).

**Table 1. Independent/Dependent Variables**

No.	Symbol	Description of Variables	Formula	References
Dependent Variables				
1	ROA	Return of Assets	Net profit/Assets	(Zeitun, 2012), (Abiola & Olausi, 2014), (Mwangi, 2014), (Goczek & Malyarenko, 2015), (Yahaya, Lamidi, Kutigi, & Ahmed, 2015), (Abubakar, Ado, Mohamed, & Mustapha, 2018), (Okere, 2018)
2	ROE	Return on Equity	Net Profit/Equity	(Zeitun, 2012), (Abiola & Olausi, 2014), (Goczek & Malyarenko, 2015), (Yahaya, Lamidi, Kutigi, & Ahmed, 2015), (Oudat & Ali, 2021)
Independent Variables				
3	SR	Solvency Risk	Capital/Assets	(Zeitun, 2012), (Goczek & Malyarenko, 2015), (Yahaya, Lamidi, Kutigi, & Ahmed, 2015)
4	LR	Liquidity Risk	Total Loans/Total Deposits	(Devinaga, 2010), (Goczek & Malyarenko, 2015), (Menicucci, 2016)
5	CR	Credit Risk	NPL/Total Loans	(Poudel, 2012), (Okere, 2018)
6	COVID-19	COVID-19 Pandemic	Dummy Variable Value 0 before COVID-19 Pandemic and Value 1 for the years of COVID-19 Pandemic	(Najaf, Subramaniam, & Atayah, 2021), (Musah, Padi, & Ahmed, 2022) (Atayah, Dhiaf, Najaf, & Frederico, 2022)

*Return on assets (ROA)* shows how profitable a company is based on its assets, so it shows how a company's management uses its assets to make a profit. If in a company we notice that the ROA is decreasing, then it means that that company has invested a lot in assets from which it is not generating profit. A ROA higher than 5% is considered a good return, while over 20% is considered an ideal return on assets.

*Return on equity (ROE)* or as it is otherwise known as return on net assets shows the profit of the company divided by equity. ROE is the measure of the profitability of the firm and how effective the company is in generating profit. The higher the ROE, the more efficient management is in using equity to generate profit.

*Solvency Risk (SR)* A company's capacity to fulfil its short- and long-term financial commitments is known as its solvency. Solvency is one approach to show a company's capacity to manage its operations into the near future, making it a crucial indicator of a company's financial health. Checking the shareholders' equity on the balance sheet, which is the total of a company's assets less its obligations, is the easiest approach to determine a company's solvency. It is measured as a ratio between capital and assets.

*Liquidity Risk (LR)* The danger of suffering losses as a result of not being able to make payments on time when they are due or not being able to do so at a reasonable cost is known as liquidity risk. It is measured as a ratio between Total Loans/Total Deposits.

*Credit risk (CR)* is the chance of suffering a loss as a result of a borrower's inability to make loan payments or fulfil contractual commitments. It often refers to the possibility that a lender won't get the main and interest that is owed, which would disrupt cash flows and raise collection expenses. Surplus cash flows might be written to offer more protection against credit risk. A higher coupon rate, which generates more cash flows, can be used to reduce credit risk when it is present for a lender. It is calculated as a ratio between NPL/Total Loans.

*COVID-19 Pandemic* is a dummy variable (COVID) that assigns the value "1" to all observations made in 2020 and 2021 and "0" to observations made prior the COVID-19 (the year 2010 until 2019).

The financial statements of fourteen commercial banks in countries of Western Balkan for the period 2010-2021 have been used as a secondary basis of the methodology. The financial statements are taken from the yearly reports of the banks, which are published on their respective websites. To analyse the research problem, which is what was the impact of risk management on the financial performance of commercial banks in WB during COVID-19, four hypotheses were constructed.

H1: Solvency risk positively affects ROE and ROA.

H2: Liquidity risk positively affects ROE and ROA.

H3: Credit risk has a negative impact on ROE and ROA.

H4: COVID-19 negatively affects ROE and ROA.

A balanced panel database containing all the variables was created, and models with fixed effects and random effects were used to examine it:

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

y- Dependent variable;  $\beta_0$ - constant which indicates the expected value of the dependent variable if all independent variables take the value equal to zero;  $\beta_1$ ,  $\beta_2$  and  $\beta_3$ - are the parameters, or coefficients, that determine the effect that independent variables have on the dependent variable;  $\varepsilon$ - residual error estimation variable in period  $t$ .



In our research, this model is done as follows:

$$ROA = \beta_0 + \beta_1 \text{Solvency Risk} + \beta_2 \text{Liquidity Risk} + \beta_3 \text{Credit Risk} + \beta_4 \text{Covid} - 19 + \varepsilon$$

$$ROE = \beta_0 + \beta_1 \text{Solvency Risk} + \beta_2 \text{Liquidity Risk} + \beta_3 \text{Credit Risk} + \beta_4 \text{Covid} - 19 + \varepsilon$$

A balanced panel database containing all the variables was created, and models with fixed effects and random effects were used to examine it.

Data sets with many observations for each sample unit are called panel data. Using panel data, we may test more complex behavioural models and obtain better approximations with fewer constrained assumptions (Baltagi, 2008).

#### 4. Empirical Results and Discussion

Descriptive analyses and linear regression calculations made with SPSS are included among the empirical findings in this study. Using regression and correlation analysis, we have examined changes in the independent variables Solvency Risk (Capital/Assets), Liquidity Risk (Total Loans/Total Deposits), and Credit Risk (NPL/Total Loans) as well as the dependent variable ROA and ROE, which is a measure of financial performance of banks. The description and analysis of all the empirical findings will be the focus of this section.

*Table 2. Descriptive analyses*

Variables	N	Minimum	Maximum	Mean	Std. Deviation
ROA	480	-0.51	.81	.0248	.11501
ROE	480	-7.08	16.17	.3565	1.69754
SR	480	.04	.92	.1607	.11295
LR	480	.00	36.30	1.0122	2.84321
CR	480	.00	.07	.0081	.01391

*Source: Authors' calculation.*

To summarise data in a way that is more comprehensible and illustrative, descriptive analyses are crucial. With 480 observations during five years at fourteen banks, Table 2 displays the descriptive analysis. According to the descriptive statistics, the average ROA is 0.02 and ranges from -0.51 to 0.81. The ROE, on the other hand, has an average of 0.35 and a range of -43.21 to 26.23. According to the results in the table above. The average liquidity risk is 1.10, with a low of 0.00 and a maximum of 36.30. Additionally, credit risk has minimum, maximum, and mean values of 0.00, 0.07, and 0.0081, respectively.

##### 4.1 Correlation analysis

To calculate the correlation between variables, we have used Pearson Correlation.

**Table 3. Correlation analyses**

		Correlations					
		ROA	ROE	Solvency_Risk	Liquidity_Risk	Credit_Risk	COVID_19
ROA	Pearson Correlation	1	.951**	.669	.726	-.633**	-.925
	Sig. (2-tailed)		.000	.012	.057	.004	.079
	N	480	480	480	480	480	480
ROE	Pearson Correlation	.951**	1	.535	.829	-.612*	-.634
	Sig. (2-tailed)	.000		.045	.053	.014	.041
	N	480	480	480	480	480	480
Solvency_Risk	Pearson Correlation	.669	-.035	1	-.010	-.012	-.025
	Sig. (2-tailed)	.012	.045		.820	.800	.583
	N	480	480	480	480	480	480
Liquidity_Risk	Pearson Correlation	.726	-.029	-.010	1	-.090*	.018
	Sig. (2-tailed)	.057	.053	.820		.048	.694
	N	480	480	480	480	480	480
Credit_Risk	Pearson Correlation	-.633**	.112*	-.012	-.090*	1	.024
	Sig. (2-tailed)	.004	.014	.800	.048		.596
	N	480	480	480	480	480	480
COVID_19	Pearson Correlation	-.925	-.034	-.025	.018	.024	1
	Sig. (2-tailed)	.079	.041	.583	.694	.596	
	N	480	480	480	480	480	480

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Source: Authors' calculation.

To quantify the strength of the linear link between two continuous variables, Pearson's correlation, also known as the correlation coefficient, is utilized. Furthermore, the correlation between the variables was determined by applying Pearson's Coefficient Correlation with the following rules: Very strong positive/negative correlation (+/- 0.81 to +/- 1), Strong positive/negative correlation (+/- 0.61 to +/- 0.80), Moderate positive/negative correlation (+/- 0.41 to +/- 0.60), Weak positive/negative correlation (+/- 0.21 to +/- 0.40), No connection (+/- 0.00 to +/- 0.20). Table 3 shows that there is a modest to significant association between all types of risk and COVID-19 and financial performance. While the two dependent variables ROA and ROE have a positive association with solvency risk and liquidity risk, the link between ROA, ROE and credit risk and COVID-19 is in the other direction.

In contrast to the findings of (Okere, 2018), who studied the influence of risk management in commercial banks in Nigeria, (Poudel, 2012), found a negative link between credit risk and ROA. The positive correlation between ROA, ROE, and solvency risk consists of the findings of (Bourke, 1989), (Molyneux & Thornton, 1992), (Zeitun, 2012), and (Trad, Rachdi, Hakimi, & Guesmi, 2017) meaning that banks with higher equity, achieve more profit. Liquidity risk has a positive correlation with ROA and ROE, and this consists to findings of (Gul, Irshad, & Zaman, 2011), (Saeed, 2014), and (Trad, Rachdi, Hakimi, &

Guesmi, 2017), meaning that consumer deposits bring more money to the banks, so it can finance more consumers and increase the performance.

#### 4.2 Panel Regression analyses

This section of the study focuses on the findings made possible by using certain panel data analysis techniques to pinpoint the factors that affect the financial performance of the Western Balkan financial sector.

**Table 4. Fixed effects model for ROA**

Variable	Coefficient	Std.Error	T-Statistics	Prob.
c	0.006754	0.001998	0.38221	0.0008
Liquidity Risk	0.08003	0.518	0.01559	0.03548
Credit Risk	-0.12245	-0.131399	0.01665	0.06830
Solvency Risk	0.003457	0.003464	0.04582	0.09886
COVID-19	-0.002910	0.002869	0.00381	0.07760
<b>Effects Specification</b>				
Cross-section fixed (dummy variables)				
R-squared			0.694392	
Adjusted R-Squared			0.614939	
F-statistic			24.46647	
Prob(F-statistic)			0.000003	

The outcomes of the fixed effects model are displayed in Table 4. It is clear that the variables years the company has been active in the financial sector of the Western Balkans, liquidity risk, solvency risk, credit risk, and COVID-19 are statistically significant because the probabilities linked to the coefficients are less than the significance level of 10%. The independent variables are responsible for 69.43% of the variances in the entire panel, according to the R-squared value. Because Fstatistic has a value of 24.46% at a significance level of 1%, the model is suitable.

The probability must be less than 0.1 for a variable's impact to be considered significant. From our four independent variables, all are significant as the probability is below 10%. Table 5 demonstrates that the return on assets of the commercial banks in WB is statistically significantly positively impacted by solvency risk. In other words, the sampled commercial banks' Return on Asset (ROA) would increase by 0.003% when solvency risk increased by 1%.

Results further demonstrate that the impact of liquidity risk on ROA is statistically significant and adverse. Accordingly, a 1% rise in LR resulted in a 0.08% increase in Return on Asset (ROA), while maintaining other independent variables at their average value. Credit risk and return on assets have negatively correlated, which means that a 1% rise in CR will result in a 0.12% fall in ROA. While COVID-19 as a dummy variable has a negative effect on ROA, which means that when the COVID pandemic started, ROA decreased. The results consisted of findings of (Bourke, 1989), (Molyneux & Thornton, 1992), (Gul, Irshad, & Zaman, 2011), (Zeitun, 2012), (Poudel, 2012), (Saeed, 2014), (Trad, Rachdi, Hakimi, & Guesmi, 2017) and (Okere, 2018).

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Given that Table 6's Chi-Sq value of 4.60 is significant at a 1% level of significance, the results of the fixed effects model are superior to those of the random effects model.

**Table 6. The Hausman test for ROA**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob
Cross-section random	4.602800	4	2

**Table 7. Fixed effects model for ROE**

Variable	Coefficient	Std.Error	T-Statistics	Prob.
c	0.008753	0.008465	0.8765	0.0009
Liquidity Risk	0.0548	0.5648	0.04568	0.04645
Credit Risk	-0.56878	-0.2348	0.045687	0.06845
Solvency Risk	0.00248	0.00518	0.045475	0.0468
COVID-19	-0.008765	0.006854	0.00876	0.04568

#### Effects Specification

Cross-section fixed (dummy variables)	
R-squared	0.5569
Adjusted R-Squared	0.7586
F-statistic	23.54868
Prob(F-statistic)	0.000007

Table 7 presents the results of the fixed effects model. Because the probabilities associated with the coefficients are smaller than the significance level of 10%, it is obvious that the variables years the firm has been engaged in the financial sector of the Western Balkans, liquidity risk, solvency risk, credit risk, and COVID-19 are statistically significant. The R-squared score indicates that the independent variables account for 55.69% of the variances in the entire panel. The model is appropriate since Fstatistic has a value of 23.54% at a significance level of 1%.

Given that Table 9's Chi-Sq value of 8.65 is significant at a 1% level of significance, the results of the fixed effects model are superior to those of the random effects model.

**Table 9. The Hausman test for ROE**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob
Cross-section random	8.65465	5	0.06

We conclude that based on the regression model equation solvency and liquidity risk have a positive impact on ROE, whereas credit risk and COVID-19 have a negative impact. According to the results, if other variables remain constant and the solvency risk is increased by 1 unit, we may anticipate that the level of ROE will rise by 0.005%. In addition, we anticipate a 1 unit rise in liquidity risk will result in a 0.03% increase in ROE and if credit risk is increased by 1 unit, ROE will decline by 0.54%. While an increase of 1% in COVID-19, will decrease ROE by 0.003%. These findings are supported by the results provided in Table 7. Furthermore, all four independent variables significantly affect ROE as a dependent variable. These results consist of the findings of (Zeitun, 2012), (Abiola & Olausi, 2014), (Yahaya, Lamidi, Kutigi, & Ahmed, 2015), and (Oudat & Ali, 2021).

## 5. Conclusion

The study aims to assess risk management effects on financial performance before and during COVID-19 in WB. Since banks make a significant contribution to managing a nation's finances, risk management is essential to the long-term viability of the banking industry. Beyond the disease's spread and containment measures, the COVID-19 pandemic has the most significant economic repercussions. The pandemic affected banking activity from a variety of perspectives, beginning with cost, moving on to ensuring security for both employees and customers, reorganizing most of the activity to work remotely, and reducing income due to a slowdown in lending activity during the first half of the year. Additionally, loan provisions increased due to the worsening number of borrowers. In particular, commercial banks in the World Bank were brought in front of this difficulty beginning in March 2020. However, thankfully, the banking industry in WB kept operating. To indicate financial performance, we used ROA and ROE as the dependent variables. We used three different types of risks as independent variables: credit risk, liquidity risk and solvency risk and COVID-19 as dummy variables and we created four hypothesis.

The analysis of the collected data from the banking sector of WB countries shows that each of the three independent variables significantly affected the financial performance (ROA and ROE) of commercial banks in WB member nations.

The results reveal that solvency and liquidity risk positively influence ROA and ROE, whereas credit risk and COVID-19 negatively affect the two dependent variables.

Therefore, all four hypotheses were true after testing by panel regression analysis.

Our research has some limitations, just like any other study. The primary constraint is the period of the data; if we could extract the data every three months or every month, the effect computation would have been more accurate.

In light of the findings of this study, we advise central banks to maintain stringent regulations about the minimal amount of equity required or the necessary ratios for deposits and loans. Monitoring lending activity and paying close attention to non-performing loans are also important since credit risk has a negative impact on commercial banks' ability to make money. Even though the fact that good risk management in financial institutions decreases the likelihood of a systemic and economic breakdown, this does not ensure an increase in returns on equity or return on assets.

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## TRENDS IN THE DEVELOPMENT OF THE STRUCTURE OF THE AGRICULTURAL HOLDINGS IN BULGARIA<sup>2</sup>

*Bulgarian agriculture has to correspond with the goals for sustainable growth of food production in order to create and develop more productive, economically efficient and ecological agricultural holdings. Tracking the trends in the development of the structure of the agricultural holdings outlines the current state, the problems and the opportunities in the sector. The aim of the paper is to present the main trends in the structure of the agricultural holdings in Bulgaria in the sector for the period 2000-2020. The paper uses data from the agrarian reports of the Ministry of Agriculture and the last three national censuses of the agricultural holdings of the National Statistics Institute.*

*Keywords: agriculture; production; trends*

*JEL: Q10; O13; Q18*

### 1. Introduction

In the recent past, the return of the land to the owners has had a strong impact on the agricultural holdings and their development. One of the main factors influencing the overall development of agriculture is the privatization process, which involves the redistribution of not only land but also buildings, facilities and machinery related to agricultural activities (Yovchevska, 2019). This reflects on the efficiency and competitiveness of the agricultural holdings. From a theoretical and practical point of view, the evaluation of the influencing factors and the efficiency of the types of agricultural holdings in different productions is extremely important (Kopeva, Madzharova, Nikolova, 2012). Bulgarian legislation depends on European legislation and is influenced by legislative changes at the EU level, so anticipating such changes is extremely important for the country (Angelova, 2021). The aim of the paper is to present the main trends in the structure of the agricultural holdings in Bulgaria in the sector for the period 2000-2020.

After 1990, agriculture fell into a serious economic and structural crisis. The main factors for the created unfavourable situation are both the political and the economic instability during

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the transition years. The delay in the agrarian reform processes, specifically regarding the restoration of the private ownership of the land and other production factors, also has a negative impact. The liquidation of the cooperative agricultural holdings without a prepared alternative to create new types of agricultural forms is also a factor worsening the conditions in agriculture. The drastic decrease in the production volume and the loss of traditional markets for Bulgarian agriculture complement the reasons for the economic and structural crisis. During the transition years, the agriculture share in the gross domestic product of the country has changed significantly in a negative direction (Bencheva, 2005).

The privatization process ended in 1995, but bankruptcies in agriculture continued in the following years (Mishev, Ivanova, 2006). After the end of the privatization and the liquidation of numerous cooperative structures, a slow process of agricultural development began, continuing to this day. “The size of most agricultural holdings does not allow the harmonious combination of the production factors, which determines also their low productivity and the insufficient competitiveness of their products” (Valchev, 1999).

The existing agricultural holdings on the territory of the country are characterized by great heterogeneity concerning indicators like organization form, management method, production structure, distribution of labour and land, access to agrarian support, etc. Authors Valchev (1999) and Yovchevska (2016) analyze and forecast the formation and development of agricultural holdings and the agrarian sector in general in the period up to 2010. They take into account the implemented land reform and the trend of development of the agricultural structure in the 20<sup>th</sup> century. Despite the expected dynamics in its rationalization, the main characteristics of the Bulgarian agricultural structure are incomparable to the characteristics inherent in the agricultural structures of the EU member states. There is a need for own national strategy concerning the development, rationalization and reform of the structure of the agricultural holdings in four main areas:

- creating alternative employment in branches and activities other than agriculture;
- overcoming the unfavourable impact of the inheritance law on the agricultural structure;
- encouraging the economic and legal emancipation of the land relations;
- using organizational-economic forms of corporative type for consolidation of agricultural holdings (Doitchinova, Wrzochalska, 2022).

The modern structure of the agricultural holdings receives social and economic support, but the problem is that it is not rational. One reason for this is that, due to certain social and economic instability and lack of perspective of the transition to a “Bulgarian-type” of the market economy for a significant part of the Bulgarian population, those people do not find a place on the labour market and turn to natural self-satisfaction. This part of the population includes small landowners who cannot develop a business, are outside the labour market and consume mainly services in insignificant amounts. Their agricultural activity is reduced to feeding their families, with no real commodity surplus directed to the market (Petkov, 2008).

Studying the efficiency of the structure of the agricultural holdings before and after the accession of Bulgaria to the European Union allows determining the direction of development of the new agricultural holdings. Economic efficiency determines to what



extent the agricultural holdings effectively use the production resources, as well as what combination of them, at given relative prices, leads to an increase in their efficiency (Paliova, 2021; Kopeva, Madzharova, Nikolova, 2012).

The production structure, including the agricultural structure, is defined as a unit that is in continuous interaction with internal and external structures. The structure of the external environment includes the main economic institutions, including those studying demand, supply and processing of agricultural products. The external and internal structures determine the factors of influence on agriculture. Depending on the size of the holding, the influence is different (Jongeneel, Tonini, 2003). The production markets and the access to them also provide a solution for the farm owners to invest in agricultural activities, for which there is a market at favourable prices. The markets of raw materials and labour are also an important element, when there is a change in their price or quality parameters, or the production cost changes (Keremidchiev, Kirilova, Velkova, 2018).

The internal structure refers to the characteristic features of the production structure. It is determined by the type of production structure, which may be subject to changes in the short and long term. Also important are the size and the specialization of the holding, which largely determine how it is affected by the external environment, its dependence, as well as how the holding can change the external environment (Jongeneel, Tonini, 2003). According to the system approach, the production agricultural structure is compared to an enterprise and is considered a system of interconnected elements aiming at common actions to achieve common goals. The individual branches of the economy are subordinated to the requirements of the leading branch and are built according to its needs.

The design and the successful functioning of the agricultural production system largely depend on the knowledge of the external business environment and the ability to respond adequately to its dynamic changes (Georgieva, 2020).

The functional aspect of the “organizing” function is associated with the continuous change of both the elements and the system (agricultural enterprise) in order to meet the requirements of the external environment – the market economy conditions. This aspect requires continuous change in the elements – production, economic, legal and social subsystems, and this leads to the realization of the main goals of the enterprise (Keremidchiev, 2021). The agricultural holding is an input-output system where the input is featured as a buyer of production factors needed for the production, and the output appears as a seller of the already produced products. By this definition, agricultural holding assumes the inherent features of any enterprise (Stankov, Hayzenhuber, Cedis, 1997).

According to Drakar (2001), the size of the organizational structure does not affect the management of the business, labour and work, but it affects the way of management. Different sizes require different behaviour of the managers in the structure. There are three main requirements for the organizational structure of management:

- to create an organization of business action;
- to have as few levels of management as possible;
- to be a prerequisite for training and monitoring future senior managers.

Despite the claim that the small production structures are more flexible and adaptive than the large ones, they are the ones that generate capital and work for profit. From the point of view of management, agricultural holdings differ in their nature.

In order to reveal the specifics of the structure of the agricultural holdings, it is necessary to review the possible types of holdings and their characteristics.

Haap (2004) considers the agricultural holding as a production structure that is shaped by a number of factors (economic, cultural, historical, technical and geographical). The author concludes that agricultural holdings cannot be studied solely as static structures. Undoubtedly, the interaction of multiple factors is a good approach for a wider view of agricultural holdings and their definitions.

Kanchev and Doitchinova, (2005), unlike foreign authors, do not classify the agricultural holdings according to the volume of the input resources, but according to a number of other indicators, like input labour, production purpose, used agricultural land, status, and many other, which largely contribute to a more complete understanding of the agricultural holdings and their characteristics. Stoyanova (2009) divides agricultural holdings into large and small organizational structures. For the purpose of her study, she calls the small ones “small family agribusiness”. The author analyzes the advantages and disadvantages of each of the types based on the main management definitions of both family business and agricultural holding.

Again, Kanchev and Doitchinova, (1996) use the term “agricultural holding”, proving that the agricultural holding in the agribusiness, as a name, can be replaced by the term “agricultural enterprise” with its own production, organizational, economic, juridical, legal and social individuality and represents “a complex unity of technological and organizational-economic relationships that predetermine its internal mechanism of functioning as an independent economic unit”. The authors define the holding also as an open system, the parts of which are under continuous influence and highly dependent on the external factors of the business environment. Unlike Stankov, who defines the holding as an input-output system, here more outlined is the interaction of the economic unit with, on one hand, the production technology, internal and external relations of interaction with the external and internal environment, and, on the other hand, the economic aspect of the holding. Many definitions of agricultural holding are specified through the management prism. Management of agricultural holding they consider “a decision-making process of distribution and organization of the use of the available limited resources to achieve the goals of the holding” (Kanchev, Doitchinova, 1996).

According to the European Commission, there is no difference between a farm and an agricultural holding. A definition of an agricultural holding is given in Regulation 1782/2003 establishing general rules for direct support schemes under the Common Agricultural Policy (CAP) (Velkova, Kirilova, 2023). According to the Regulation, “holding” means “all production units managed by one farmer located within the territory of the same Member State”.

According to the Law on Census of Agricultural Holdings in the Republic of Bulgaria, an “agricultural holding” is an independent technical and economic unit, subordinate to a single management, producing agricultural products and meeting certain criteria. This definition is

used by the statistics, on the basis of which the state policy in the area is developed. In both European Commission regulation and census law, the definitions are too general (Nestorov, Branzova, 2022). The reason is that all different types of holdings with their specific characteristics can be covered by the definition of a holding. It can also be noted that, according to the regulation, no distinction is made between a farm and a holding, since in this way the Bulgarian agricultural holding corresponds to the same characteristics of a farm in other EU member states.

In order for agricultural holdings to be classified and attached to a certain type of structure, it is necessary to use certain indicators, which, on one hand, are specific to the agrarian activities, and on the other hand, have the inherent aspects of a business. Since agriculture is a specific sector affected by the climate features of the terrain, it is necessary to reflect this in the indicators for distinguishing the holdings (Mishev, Ivanova, Shterev, Harizanova, 2009).

There are many classifications and combinations to characterize the holdings. Some classifications distinguish agricultural structures by type depending on a number of indicators (size, technical support, market orientation, type of production, etc.). This classification describes the holdings in a global aspect. Other classifications consider the holdings based on territorial principle and divide them into Asian and American types (Stoyanova, Doitchinova, Todorova, Peycheva, Blagoev, Dineva, 2022).

The classification indicators used by the national statistics allow to conduct of census and registration of the agricultural holdings with their resources. A typology and criteria for determining the type of holdings have also been developed. The first census in Bulgaria is carried out in 1897 (Valchev, 1999).

One of the most commonly used indicators for classifying agricultural holdings and determining the size is the agricultural land used by the holding. It distinguishes the holdings into small, medium and large. In many countries, this is still the only indicator used to determine the size and type of the holding. The disadvantage is that it is not possible to fully cover the agricultural activities, since even a small holding can produce and sell a significant amount of production, and vice versa. Usually, this classification method is combined with other indicators that give a more accurate idea of the production structures and their characteristics. Each country determines the minimum size of the holdings for their entry into a certain group. Comparing different countries according to this criterion is difficult and not precise, because in one country a holding is classified as small by its size, in another country the same holding falls into a different group (Totev, Mochurova, Kotseva-Tikova, 2021). Studies of agricultural holdings reveal a relationship between the size of the agricultural holding and its economic performance, based on the net profit indicator. This indicator is based on the variety of production techniques chosen by the holdings of different sizes. Large holdings can more easily diversify risk than small ones (Harizanova, 2015).

According to many of the indicators, the agricultural holdings can hardly be compared. For this reason, introduced is the economic size, which allows us to evaluate the activity of one type of holding/production compared to another. “Economic size” is conventionally expressed by the term “European economic unit” and is calculated as the difference between the gross agricultural product and the costs related to this product. One economic unit equals

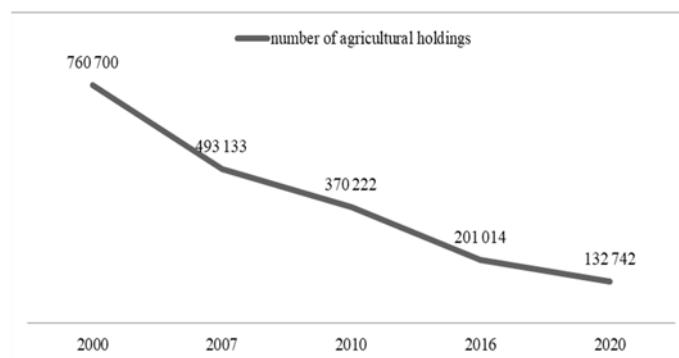
to 1200 EUR (CAP, 2005), which means how many acres of a certain crop or how many animals of a certain species form an economic unit.

## **2. Analysis of the Structure of Agricultural Farms in Bulgaria**

The role of the production structures in agriculture in ensuring the country's food security is extremely important. Food security can be increased by outlining the types of agricultural holdings that have a significant contribution and others that need assistance and support. For this purpose, diversification of the holdings is done according to selected criteria.

Figure 1 presents the number of agricultural holdings in Bulgaria for the period 2000-2020. A drastic decrease in the number of holdings is observed for each subsequent year. At the beginning of the period in 2000, there are 760 700 agricultural holdings. By 2007 their number decreased by 267 567 (35%). From 2007 to 2010, the number of agricultural holdings continued to decrease and in 2010 they were 122 911 (25%) less than in 2007. The negative trend continued in the following years and in 2016 the number of agricultural holdings decreased by 169 208 (45%) compared to 2010. In the last studied year (2020), the number of agricultural holdings on the territory of the country is 132 742 (a decrease by 68 272 (34%) compared to 2016). If the number of agricultural holdings at the beginning of the studied period is compared with their number at the end of the period, in 20 years the agricultural holdings in Bulgaria have decreased by 627 958 (83%). This can be explained by the consolidation of small agricultural holdings into larger ones, on the one hand, but on the other hand, the reason for the negative trend can be the desertification of the rural areas and the reluctance of young people to engage in agriculture.

**Figure 1. Number of agricultural holdings in Bulgaria in 2000-2020**



*Source: Ministry of Agriculture – “Agrostatistics”.*

Table 1 presents the distribution of agricultural holdings in Bulgaria by economic size in the last three national censuses of agricultural holdings (in 2010, 2016 and 2020). The holdings are divided into 9 groups, according to their economic size (defined and accepted by CAP of the EU). The total economic size of the country during the studied years increases every year.

In 2010, the total economic size was 2 458 263 EUR, in 2016 it increased by 1,318,206 EUR (54%) compared to 2010, and reached 3 776 469 EUR. In 2020, the total economic size continues to increase and its value is 4 091 460 EUR. This is an increase of 314,991 EUR (8%) compared to 2016. Compared to 2010, the indicator increases by 1 633 197 EUR (66%). Throughout the studied period, the agricultural holdings with an economic size equal to or greater than 250,000 EUR predominate. They represent about 1/2 of the production volume of the country's agriculture.

In 2010, 42% (1 032 710 EUR) of the agricultural holdings had an economic size equal to or greater than 250,000 EUR. The agricultural holdings with an economic size from 100,000 to 250,000 EUR are 12.3% (302 467 EUR). Usually, these two groups of economic size include agricultural holdings that grow Cereal and Industrial crops. In 2010, the agricultural holdings with the smallest economic size – below 2000 EUR were 9% (221,488 EUR). The remaining six groups of economic sizes are approximately equal and in the range of 5 to 7%. The smallest share of agricultural holdings with an economic size of 15,000 to 25,000 EUR is 4.7% (115,888 EUR).

**Table 1. Classification of agricultural holdings in Bulgaria by classes of economic size**

Economic size by Standard Output (SO)	Year		2010		2016		2020	
	EUR	%	EUR	%	EUR	%		
I - < 2 000 EUR	221 488	9.0	97 643	2.6	47 535	1.2		
II - >= 2 000 & < 4 000 EUR	164 064	6.7	98 956	2.6	62 990	1.5		
III - >= 4 000 & < 8 000 EUR	144 664	5.9	130 045	3.4	104 800	2.5		
IV - >= 8 000 & < 15 000 EUR	135 307	5.5	150 391	4.0	162 849	4.0		
V - >= 15 000 & < 25 000 EUR	115 888	4.7	158 824	4.2	178 692	4.4		
VI - >= 25 000 & < 50 000 EUR	164 246	6.7	234 070	6.3	293 792	7.2		
VII - >= 50 000 & < 100 000 EUR	177 429	7.2	273 491	7.2	324 907	7.9		
VIII - >= 100 000 & < 250 000 EUR	302 467	12.3	423 013	11.2	494 520	12.1		
IX, X, XI, XII, XIII, XIV - >= 250 000 EUR	1 032 710	42.0	2 210 036	58.5	2 421 374	59.2		
Total	2 458 263	100.0	3 776 469	100.0	4 091 460	100.0		

Source: Ministry of Agriculture – “Agrostatistics”, 2018.

In 2016, 58.5% (2 210 036 EUR) of the agricultural holdings had an economic size equal to or greater than 250,000 EUR – an increase of 16.5% compared to 2010. Agricultural holdings with an economic size from 100,000 to 250,000 EUR are 11.2% (423,013 EUR) – a decrease of 1.1% compared to 2010. In the same year, agricultural holdings with the smallest economic size (below 2000 EUR) fell to 2.6% (97 643 EUR – 6.4% less than in 2010). Agricultural holdings with an economic size from 50,000 to 100,000 EUR maintained their share in 2010 and are 7.2% (273 491 EUR). The remaining five economic size groups decrease and are in the range of 2.5 to 6%. The most drastic decrease is observed in agricultural holdings with an economic size from 2000 to 4000 EUR and from 4000 to 8000 EUR, respectively from 6.7% to 2.6% (98 956 EUR) and from 5.9% to 3.4% (130 045 EUR). A reason for the increase in the group of agricultural holdings with the largest economic size can be the consolidation of the land, which also reflects on the decrease of the groups with a smaller economic size.

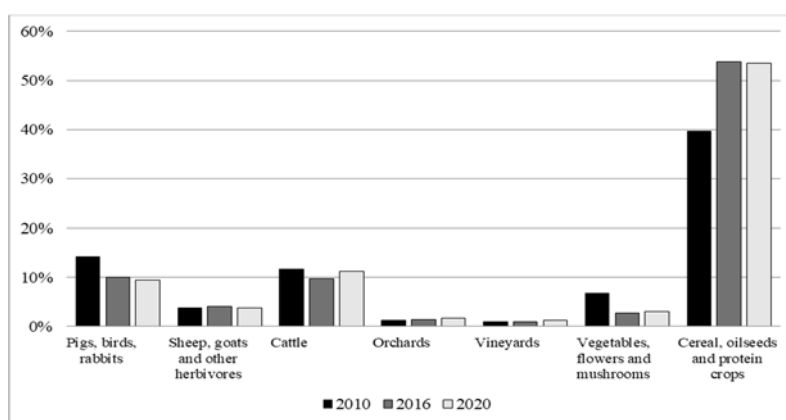
In the last census in 2020, 59.2% (2 421 374 EUR) of the agricultural holdings have an economic size equal to or greater than 250,000 EUR – an increase of 0.7% compared to 2016. Agricultural holdings with an economic size from 100,000 to 250,000 EUR are 12.1% (494

520 EUR) – an increase by 0.9% compared to 2016 and approaching their values in 2010. In the same year, agricultural holdings with the smallest economic size (below 2000 EUR) fell to 1.2% (47 535 EUR), which is 1.4% less than in 2016. Agricultural holdings with an economic size from 50,000 to 100,000 EUR report insignificant growth and their share rises to 7.9% (324 907 EUR). In 2020 there is an increase in the agricultural holdings with an economic size from 25,000 to 50,000 EUR – 7.2% (293 792 EUR), compared to 6.2% in 2016. Agricultural holdings with an economic size from 8000 to 15,000 EUR and from 15,000 to 25,000 EUR have not changed their share since 2016 and are around 4%. Compared to 2016, there is a decrease in the agricultural holdings with an economic size from 2000 to 4000 EUR and from 4000 to 8000 EUR, respectively from 2.6% to 1.5% (62,990 EUR) and from 3.4% to 2.5% (104,800 EUR). In 2020, the 2016 trend of consolidation continues, agricultural holdings of smaller economic size almost disappear and those of large economic size continue to increase.

When the three studied years are compared, it is noticeable that the distribution by economic size of the agricultural holdings is almost the same in 2016 and 2020. There is a difference in 2010, when the distribution is more balanced between the groups, with the only exception being the group with the largest economic size prevailing throughout the analyzed period.

Figure 2 shows the economic size of the agricultural holdings by specialization type in 2010-2020. The specialization types are considered in both crops and animal husbandry.

**Figure 2. Economic size of agricultural holdings by specialization type**



Source: Ministry of Agriculture – “Agrostatistics”.

Cereal, oilseed and protein crops have the largest economic size in the three studied years. In 2010, their economic size was 39.7%, and in 2016 it is up to 53.8% (an increase of 14.1%). In 2020, the economic size of Cereals, oilseeds and protein crops decreased insignificantly to 53.5%.

The economic size of the agricultural holdings growing Vegetables, flowers and mushrooms was the highest in 2010 (6.8%). In 2016 there was a drastic decrease of 4.1% and the economic size dropped to 2.7%. In 2020, the studied indicator changed in a positive direction

to 3.1%, which is an increase of 0.4%, compared to 2016. Despite the increase, the economic size of Vegetables, flowers and mushrooms in 2020 is 1/2 of the one in 2010.

The economic size of agricultural holdings growing Vineyards remains relatively unchanged during the studied years, but the highest values are in 2020 (1.2%). In 2010 and 2016, the economic size of Vineyards was 1%. This is the sector with the smallest economic size both for the three studied years and of all the considered specializations of the agricultural holdings.

After Vineyards, the next sector with the smallest economic size is Orchards. In 2010, its economic size is 1.2%, and in 2016 and 2020 it increased slightly by 0.2% and 0.5%, respectively, compared to 2010.

In animal husbandry, with an almost unchanged economic size during the three studied years, are the holdings raising Cattle. In 2010 their economic size is 11.7%, in 2016 it dropped to 9.8% (a decrease by 1.9%). In 2020 (the last studied year), the economic size of Cattle holdings increase by 1.4% and close to the values in 2010.

The economic size of agricultural holdings raising Sheep, goats and other herbivores in 2010 is 3.8%. In 2016, the value of the indicator is 4.1% (an increase by 0.3%). In 2020 (the last studied year), the economic size of such holdings decreased and got to the values in 2010 (3.8%).

In 2010 agricultural holdings raising Pigs, birds and rabbits had the largest economic size in animal husbandry (14.2%). In 2016, the value of the indicator was 10% (a decrease by 4.2%). In 2020 (the last studied year), the economic size of such holdings continued to decrease and reached 9.4%. This is a drop of 0.6% from 2016 and 4.8% from 2010.

Table 2 presents the harvested areas of the agricultural holdings in Bulgaria in hectares (ha) by their production specialization for the period 2000-2020. During the entire analyzed period, the harvested areas of Cereal crops are the most. In 2000, the harvested areas with Cereal crops were 1,965,500 ha – the highest value of the studied indicator for the entire period. From 2000 to 2007, there was a decrease of 432,365 ha (22%), and the harvested area was 1,533,135 ha. In 2010, the harvested areas increased by 15% (236,920 ha), compared to 2007. In 2016, there was also an increase in the size of the harvested areas with Cereal crops by 2.6% (45,843 ha), compared to 2010. In 2020, the studied indicator increased by 7.8% (141,223 ha), compared to 2016. From 2007 to the end of the studied period, the trend is positive and the harvested areas with Cereal crops increased gradually to 1,957,121 ha in 2020. The change in the size of the harvested areas with Cereal crops at the end of the studied period (2020), compared to the beginning of the period (2000), is insignificant – 0.4% in a negative direction, i.e. 8,379 ha less.

In 2000, the harvested area with Industrial crops was 700 ha, which is the lowest value of the studied indicator for the entire period. From 2000 to 2007, there was an increase of 102 713 ha (17%), and the harvested area was 704,413 ha. In 2010, the harvested areas increased insignificantly by 4% (31,310 ha), compared to 2007. In 2016, there was a significant increase in the size of the harvested areas with Industrial crops by 45% (335,959 ha), compared to 2010. This is also the highest value of the studied indicator for the entire period. In 2020, the harvested areas decreased by 7% (78,565 ha) compared to 2016. From 2000

almost to the end of the studied period, the trend is positive and the harvested areas with Industrial crops increased gradually to 1,071,682 ha in 2016. The change in the size of the harvested areas with Industrial crops at the end of the studied period (2020), compared to the beginning of the period (2000), is significant – 65% in a positive direction, i.e. 391,417 ha more.

**Table 2. Harvested areas by specialization of the agricultural holdings in Bulgaria for the period 2000-2020 (ha)**

	2000	2007	2010	2016	2020
Cereals	1 965 500	1 533 135	1 770 055	1 815 898	1 957 121
Industrial crops	601 700	704 413	735 723	1 071 682	993 117
Vegetables	66 017	23 982	22 007	35 496	22 666
Perennial crops	54 055	28 361	38 778	37 191	41 385
Vineyards	128 717	72 906	49 438	36 551	28 744
Legumes	17 000	9 650	6 640	13 644	1 092
Root crops	48 731	22 557	13 904	8 514	9 946

Source: Ministry of Agriculture – “Agrostatistics”.

In 2000, the harvested area with Vegetables was 017 ha – the highest value of the studied indicator for the entire period. From 2000 to 2007, there was a serious decrease of 42 035 ha (64%), and the harvested area became 23,982 ha. In 2010, harvested areas continued to decrease by 8% (1975 ha) compared to 2007. This is also the year with the least harvested areas with Vegetables. In 2016, there was a significant increase in their size by 61% (13 489 ha), compared to 2010. In 2020, the studied indicator decreased by 36% (12,830 ha), compared to 2016, and reached the values in 2010. Almost throughout the studied period, the trend is negative and the harvested areas with Vegetables decreased gradually to 22,666 ha in 2020, with the exception of 2016 when the areas increased. The change in the size of harvested areas with Vegetables at the end of the studied period (2020), compared to the beginning of the period (2000), is significant – 66% in a negative direction, i.e. 43,351 ha less.

In 2000, the harvested areas with Perennial crops were 055 ha, which is the highest value of the studied indicator for the entire period. From 2000 to 2007, there was a significant decrease of 25,694 ha (47%), and the harvested areas were 28 361 ha. In 2010, the harvested areas increased by 37% (10,417 ha), compared to 2007. In 2016, there was a small decrease in the size of harvested areas with Perennial crops by 4% (1587 ha), compared to 2010. In 2020, the studied indicator increased by 11% (4194 ha) compared to 2016. During the studied period, the trend is dynamic, there is an increase and decrease in the harvested areas with Perennial crops and they increase to 41,385 ha in 2020. The change in the size of the harvested areas with Perennial crops at the end of the studied period (2020), compared to the beginning of the period (2000), is 23% in a negative direction, i.e. 12,670 ha less.

Throughout the studied period, the harvested areas with Vineyards decreased. In 2000, the harvested area with Vineyards was 128,717 ha, which is the highest value of the studied indicator for the entire period. From 2000 to 2007, there was a decrease of 55,811 ha (43%), and the harvested areas became 72,906 ha. In 2010, the harvested areas were reduced by 32% (23,468 ha), compared to 2007. In 2016, the negative trend continued, there was a decrease



in the size of the harvested areas with Vineyards by 26% (12,887 ha), compared to 2010. In 2020, the studied indicator decreased by 21% (7807 ha), compared to 2016. From 2000 to the end of the studied period, the trend is negative and the harvested areas with Vineyards decreased gradually to 28,744 ha in 2020. The change in the size of the harvested areas with Vineyards at the end of the studied period (2020), compared to the beginning of the period (2000), is significant – 78% in a negative direction, i.e. 99,973 ha less.

In 2000, the harvested areas with Legumes were 17,000 ha, which is the highest value of the studied indicator for the entire period. From 2000 to 2007, there was a serious decrease of 7350 ha (43%), and the harvested areas became 9650 ha. In 2010, harvested areas decreased by 31% (3010 ha) compared to 2007. In 2016, there was a significant increase in the size of the harvested areas by 105% (7004 ha) compared to 2010, so they doubled. In 2020, the studied indicator decreased by 92% (12,552 ha) compared to 2016. This is also the year with the least harvested areas with Legumes. Almost throughout the studied period, the trend is negative and the harvested areas with Legumes gradually decreased to 1092 ha in 2020, with the exception of 2016, when the areas increased. The change in the size of the harvested areas with Legumes at the end of the studied period (2020), compared to the beginning of the period (2000), is significant – 94% in a negative direction, i.e. 15,908 ha less.

Throughout the studied period, with the exception of 2020, the harvested areas with Root crops decreased. In 2000, those harvested areas were 48,731 ha, which is the highest value of the studied indicator for the entire period. From 2000 to 2007, there was a decrease of 26 174 ha (54%), the harvested areas decreased by half and became 22,557 ha. In 2010, the harvested areas decreased by 38% (8653 ha), compared to 2007. In 2016, the negative trend continued, there was a decrease in the size of the harvested areas with Root crops by 39% (5390 ha), compared to 2010. In 2020, the studied indicator increased by 17% (1432 ha), compared to 2016. From 2000, until almost the end of the studied period, the trend is negative and the harvested areas with Root crops gradually decrease to 9946 ha in 2020. The change in the size of the harvested areas with Root crops at the end of the studied period (2020), compared to the beginning of the period (2000), is significant – 80% in a negative direction, i.e. 38,785 ha less.

If we compare the first and the last year of the studied period, it can be concluded that there is a decline in the harvested areas of all groups of production specializations, with the exception of Industrial crops, which increase their areas by 1/3. The biggest difference is in the harvested areas with Legumes, Root crops, Vineyards and Vegetables. Cereals change insignificantly their harvested areas from 2000 to 2020.

### **3. Conclusion**

With each passing year, the agricultural sector occupies a smaller and smaller part of the country's economy. The number of agricultural holdings and their harvested areas significantly decreased. If the number of agricultural holdings at the beginning of the studied period is compared with their number at the end of the period, in 20 years the agricultural holdings in Bulgaria have decreased by 627 958 (83%). This can be explained by the consolidation of small agricultural holdings into larger ones, on one hand, but on the other

hand, the reason for the negative trend can be the desertification of the rural areas and the reluctance of young people to engage in agriculture. If we compare the first and the last year of the studied period, it can be concluded that there is a decline in the harvested areas of all groups of production specializations, with the exception of Industrial crops, which increase their areas by 1/3. The biggest difference is in the harvested areas with Legumes, Root crops, Vineyards and Vegetables. Cereals changed insignificantly their harvested areas from 2000 to 2020.

There is a big difference between the various specializations of the agricultural holdings. The Cereals and Industrial crops dominate, at the expense of all other productions. There is an imbalance regarding the cultivation of various agricultural crops and livestock, i.e. harvested is the crop that is most subsidized at the given time. A more drastic decline in the number of holdings is reported in stock-breeding, compared to plant-growing, but the trend is negative for both branches. Of the specializations considered in both crop and livestock production, Cereals, oilseeds and protein crops were the ones with the largest economic size during the study period. If the three studied years (2010, 2016 and 2020) are compared, it is noticeable that the distribution of the agricultural holdings by economic size is almost the same in 2016 and 2020. There is a difference in 2010, when the distribution is more balanced between the groups, with the exception of the group with the largest economic size, which prevails throughout the analyzed period. Agricultural holdings with a large economic size increase, while those with a small size almost disappear.

Agriculture is a high-risk sector and some risks in it are uncontrollable. In Bulgaria, risk management in agricultural production structures is relatively new and has great potential for development. An option to stabilize the sector and increase resilience to risk events is the implementation of an effective risk management strategy that is tailored to the specific risks in agriculture, their complexity and the extent of the consequences. The effective impact of innovation on economic development is closely linked to the legal, institutional and financial environment. They have an impact on all the economic agents that transform existing and newly created knowledge into advanced competitive products and services for the market (Chobanova, Ilieva-Naydenova, Bakardzhieva, 2005). Of great importance is also the intervention of the state, which supports risk management and creates prerequisites for the easy application of the various instruments to influence risk events. Both risk management and application of innovative practices in the activity of the agricultural holdings are new to Bulgarian agriculture and the capacity for development in this area is great.

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## **SUMMARIES**

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### **BULGARIAN ECONOMY ON THE VERGE OF EURO AREA – CURRENT CHALLENGES AND MEDIUM-TERM PROJECTIONS**

The paper examines the current state and development of the Bulgarian economy in 2022 and the first quarter of 2023 considering domestically determined and regional factors and processes. We analyse the real sector of the Bulgarian economy by tracing the dynamics of economic activity (GDP, inflation, and unemployment) considering internal and external factors affecting inflation dynamics and labour market processes. The sustainability of the fiscal sector is viewed through the possibilities of financing the green and digital transition using EU funds and programmes, and the policies needed to preserve the fiscal stability. Prospects for foreign trade are discussed in terms of the economic situation and expectations of Bulgaria's main trading partners, considering the high connectivity with the euro area and the structural specificities of foreign trade relations. The analysis of the financial sector (banking sector and capital market) focuses on the implications of the monetary policy pursued by the European Central Bank and the regulatory actions of the Bulgarian National Bank, as well as on the risks for the stable functioning of the sector in a dynamic macroeconomic environment. Expectations and forecasts for the Bulgarian economy to 2025 are based on key assumptions about the global economic processes and locally determined challenges. Recommendations are made to the national economic policy aimed at preserving the purchasing power of the population's income and the need to restructure certain fiscal measures.

Keywords: economic dynamics; labour market; fiscal sustainability; foreign trade; banking sector; capital market; macroeconomic projections; economic policy recommendations

JEL: E2; E44; E47; E60

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### **DOES DEMOCRACY MATTER FOR ECONOMIC GROWTH? EMPIRICAL EVIDENCE FROM INDONESIA**

This study aims to empirically examine the mediating effect of investment on the relationship between democracy indices (i.e., civil freedom, political freedom, and democratic institutions) and economic growth across 33 provinces in Indonesia over the period from 2012 to 2020. Using a dynamic panel data regression of the Generalized Method of Moments (GMM) within the path analysis framework, the study found that investment, political freedom, and democratic institutions have promoted Indonesia's economic growth, while civil freedom has deteriorated the economic growth of the country. In addition, investment has partially mediated the effect of the democracy indices on Indonesian economic growth. These results suggest the importance of providing more political freedom and democratic institutions and limiting civil freedom to promote investment and consequently boost economic growth.

Keywords: Democracy indices; investment; economic growth; regional development; Indonesia

JEL: C33; O43; O47; R10; R50

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### **BRICS COUNTRIES IN A PERIOD OF UNCERTAINTY AND TURBULENCE: OPPORTUNITIES FOR THE FORMATION OF A NEW CONFIGURATION OF THE GLOBAL ECONOMY**

The increasing uncertainty and turbulence of the external environment create new conditions for achieving global leadership. The study aims to conduct a comparative assessment of the economic, scientific, educational, and digital potential of the BRICS countries under conditions of uncertainty to identify opportunities to strengthen their leadership position in the global economy. The article presents the author's vision of the causes and factors of increasing uncertainty and its impact on modern states. The article proves the hypothesis that the BRICS countries are increasing their economic, scientific, educational, and digital potential in comparison with the developed countries of the G7. It concludes that the BRICS countries are superior in economic potential and lag in terms of scientific, educational, and digital potential. It is argued that the uncertainty and turbulence caused by the 2020-2021 pandemic helped the BRICS countries to increase their potential and align their positions with the G7 countries. The identification of the strengths and weaknesses of the BRICS national economies allowed the authors to identify their points of growth in the implementation of the outperformance strategy. It was determined that the most appropriate development strategy for the BRICS countries under conditions of uncertainty is an ambivalent adaptation strategy that allows them to increase their influence in the global economy.

Keywords: BRICS; emerging economies; G7; socio-economic uncertainty; turbulence; crisis; adaptation and development strategy; economic potential; scientific and educational potential; digital potential; global leadership

JEL: F01; F02; F62; F63

*Borislav Nikolov*

### **MAIN PILLARS BUILDING UP THE RISK FRAME OF INDUSTRY 4.0 IMPLEMENTATION IN THE ENTERPRISES IN BULGARIA**

Development of the technologies is a part of the modern world and modern business.

The realization of extended changes, that have been imposed by Industry 4.0, is a very serious challenge for enterprises and in most cases have a high-risk ratio.

The goal of this article is to define the main risk components forming the risk frame of Industry 4.0 implementation in enterprises in Bulgaria. In this relation, research has been made, giving the opportunity for a definition of the already mentioned components of the risk frame.

The research has been made on the basis of a questionnaire survey, covering 91 enterprises in Bulgaria. On this basis, eight main components are defined, which mainly determine the risk framework for the implementation of Industry 4.0 in enterprises in Bulgaria. A number of weaknesses and omissions have been outlined, which confront the realization of Industry 4.0 in Bulgarian enterprises. The risk variation in these components has also been studied, covering six risk areas identified as key risks in the researched enterprises. All this determines the current level of a significant part of enterprises in Bulgaria in the field of implementation of Industry 4.0 and also provides guidelines for taking measures to limit the impact of risk.

Keywords: Industry 4.0; Risk; Risk frame; Enterprises in Bulgaria

JEL: M15; O14; O33; O38

*Irena Mladenova, Tsvetan Davidkov*

## **LEADERSHIP, ADAPTABILITY AND PERFORMANCE OF BULGARIAN ORGANIZATIONS – CULTURAL REFLECTIONS ON EMPIRICAL DATA**

This article interprets data from several empirical studies in Bulgaria in three areas of research interest – transformational leadership, adaptability, and organizational performance. The first study examines transformational leadership's influence on adaptability and organizational performance. It formulates two hypotheses and tests them by using data from a broader study on organizational capacity for change among employees and managers in organizations in Bulgaria. Two hierarchical regression analyses confirm the direct and positive influence of transformational leadership on adaptability and organizational performance. Results from an additional set of research studies are used to expand the context for understanding and exploring the three areas of interest. The empirical data for these were collected through five observations on the national and organizational cultures according to Hofstede's methodology. Thus, the article's combined approach of looking at the data from unrelated studies is believed to strengthen the cognitive possibilities in the interpretation of the researched areas and established regularities. The main results point at high values observed for all three variables in Bulgaria. Cultural interpretation of some of the indicators through the years confirm these results and point at unidirectional and stable trends for some (such as growing care for employee development as part of the transformational leadership scale and weakening uncritical following of rules as part of the adaptability scale). There is reason to argue that training is more valuable to employees than job security (both part of the organizational performance scale).

Keywords: transformational leadership; organizational ambidexterity; adaptability; organizational performance; behavioural and cultural reflection

JEL: L10; L29; M10; M14

*Dimitar Nenkov, Yanko Hristozov*

## **DCF VALUATION: THE INTERRELATION BETWEEN THE DYNAMICS OF OPERATING REVENUE AND GROSS INVESTMENTS**

The current research paper explores some key aspects of the application of the DCF enterprise valuation. This paper presents the second part of a broader study by the authors, which is focused on the analysis of key input variables, predetermining the amount of free operating cash flows as an important part of the application of DCF valuation models. Here are the most serious prerequisites for deviation of forecasts from reality, which often leads to a significant distortion of the final valuations of enterprises. This provokes the research on the interdependence between the five main input variables and especially between operating revenue on the one hand, and the different expenditure groups, on the other hand, is required. In the first part of this research, the relationship between operating revenue and operating expenditures was investigated. In the present research paper, the relationship between operating revenue and gross investment expenditures is investigated, including the increase in net operating working capital and capital expenditures. The research was again carried out on the basis of aggregated data for all non-financial enterprises in Bulgaria for the period 2008-2020. The results are generally ambiguous, but in the medium and long term, at least for some of the largest sectors explored, relatively representative and sustainable averages are established for the relative share of net operating working capital and capital expenditures to revenues. There are no strong arguments against forecasting gross investment costs based on their historical averages as a percentage of operating revenue.

Keywords: company valuation; DCF enterprise valuation model; net operating working capital; capital expenditures; operating free cash flows

JEL: G30; G32

*Muh. Sabir Mustafa, Ubud Salim, Nur Khusniyah Indrawati, Siti Aisjah*

### **IMPLEMENTATION OF HULONTALO ETHNIC VALUES IN SMALL AND MEDIUM BUSINESSES (SMEs) FINANCIAL DECISION-MAKING**

This study aims to explore and understand the implementation of Hulontalo ethnic values in SME's financial decision-making. The determination of informants begins with the decision of the key informant; then, the appointment of informants is developed during field searches using the Snowballing Sampling technique. The informants in this study were as many as nine people. An entrepreneur must have skills in managing his business, expertise in making quality products and implementing the values of Adati Hula-hula'a to Sara'a, Sara'a Hulahula'a to Kuran, which support the theory. There are three implementations of Hulontalo ethnic traditional values in financial decision-making: piyohu, Dilapottitilandingo, and payango. This research was hoped to support the pecking order theory and obtained a new indicator that can be considered for an individual in making financial decisions, namely Daadata Tilapulo (productivity).

Keywords: Culture; Ethnic; the value of entrepreneurship; Capital structure; Financial behavior; Financial Decisions; Decision-making

JEL: G4; G40; G418

*Ilian Minkov, Denka Zlateva*

### **PRIMARY ELEMENTS OF THE PUBLICIZED ORGANIZATIONAL CULTURE OF HIGHER EDUCATION INSTITUTIONS IN BULGARIA**

The visualization of the strategic priorities of the universities in the digital space is a key task of academic management in the conditions of a dynamic educational environment and globalization. Proclaiming the official organizational culture on the Internet is essential for improving the image of educational institutions. The purpose of this study is to explore and identify the main priorities when publishing online the organizational culture of higher education institutions, with an emphasis on its primary elements and to reveal their general features, specifics and purpose. It was established that the primary element of utmost importance for universities is the mission and that the least important is the organizational vision. It is concluded that universities should more actively proclaim vision and values in addition to the mission, in order to create a complete portfolio of key elements of the organizational culture and thus build the desired image.

Keywords: higher education institutions; publicized organizational culture; mission; vision; values/principles

JEL: A23; I23

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### **THE EFFECT OF FINANCIAL RISK MANAGEMENT ON THE FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN WESTERN BALKAN BEFORE AND DURING COVID-19**

Financial management crises all over the world have demonstrated the need for risk management techniques for businesses seeking to maintain shareholder and consumer support. The purpose of this study is to assess the impact of risk management on the financial performance of commercial banks in the Western Balkans (WB) before and following COVID-19 for the years 2016-2021, with 40 commercial banks selected to represent all WB countries' commercial banks as a whole. The study revealed that risk management has a significant impact on the financial performance of WB commercial banks as assessed by Return on Assets (ROA) and Return on Equity (ROE). The research was done through the panel regression using fixed and random effect, whereas a dependent variable we have ROE and ROA and as independent variables, we have Solvency risk, Liquidity Risk and



Credit Risk and COVID-19 as a dummy variable. Based on the panel regression model, it is found that the four independent variables have a significant impact, in the dependent variable. The results of this study lead us to recommend that central banks maintain strict rules about the minimum amount of equity required or the requisite ratios for deposits and loans. Since credit risk has a detrimental effect on the profitability of commercial banks, keeping a tight eye on lending activities and paying special attention to non-performing loans is also crucial.

Keywords: Banking Sector; credit risk; liquidity risk; solvency risk; financial performance

JEL: G21; G32

*Annie Dimitrova*

### **TRENDS IN THE DEVELOPMENT OF THE STRUCTURE OF THE AGRICULTURAL HOLDINGS IN BULGARIA**

Bulgarian agriculture has to correspond with the goals for sustainable growth of food production in order to create and develop more productive, economically efficient and ecological agricultural holdings. Tracking the trends in the development of the structure of the agricultural holdings outlines the current state, the problems and the opportunities in the sector. The aim of the paper is to present the main trends in the structure of the agricultural holdings in Bulgaria in the sector for the period 2000-2020. The paper uses data from the agrarian reports of the Ministry of Agriculture and the last three national censuses of the agricultural holdings of the National Statistics Institute.

Keywords: agriculture; production; trends

JEL: Q10; O13; Q18