

# Economics and Business Review

Volume 9 (4) 2023

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# What drives the savings rate in middle-income countries?

 Wiktor Błoch<sup>1</sup>

## Abstract

The aim of this study is to examine the factors that influence the savings rate in middle-income countries and to compare the results with other studies devoted to different subgroups of countries. Among the potential determinants of savings the study considers: demography, income level, financial sector, international trade, inflation and the structure of the economy. The research sample is confined to 44 middle-income countries and covers the period between 2000 and 2019. Six model specifications are constructed using three different estimators: FE, FGLS and PCSE. In the next step, the same models are estimated using alternative dependent variables. Results suggest that industrial share in GDP has a positive impact on the savings rate. On the other hand, a negative relationship was diagnosed between the savings and unemployment rates, the share of labour compensation in GDP, military expenditure, inflation and the young dependency ratio.

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## Introduction

Savings are usually considered to be the difference between disposable income and consumption expenditure (Adelakun, 2015). Saving constitutes an important household economic activity and its significance may be perceived both from microeconomic and macroeconomic points of view. At the microeconomic level savings let households stabilize their consumption in the case of a decrease in income due to disability or job loss for example. At the macroeconomic level aggregated savings may be used as a source for investments (Zhuk, 2015).

Savings are closely related to investments. The positive role of savings and investments in boosting and maintaining economic growth is laid out in economic theory. Domar (1946) stated that savings and investments are the two main variables that determine equilibrium in the economy. This theory concentrates on how economic growth depends on the rate of savings and investments and also on the capital-output ratio. Solow (1956) indicated savings and investments as determinants of economic growth. According to this theory, a higher savings rate can facilitate higher growth of income and capital per capita during the transition to a steady state. They can also contribute to achieving a higher level of income and capital per capita. However an increase in savings does not influence economic growth in the long run. On the other hand endogenous growth models suggest that an increase in the savings rate and an increase in population positively affect the long-term growth rate (Samantaraya & Patra, 2014).

Apart from theoretical models, various studies have investigated the role of savings in the economy and their determinants. Most are devoted to Asian and developing countries (e.g., Aric, 2015; Horioka & Hagiwara, 2011; Jongwanich, 2010; Ma & Liu, 2022). Some also focus on developed countries (e.g., Cohn & Kolluri, 2003; Kandil, 2015).

This study is devoted to middle income countries. The World Bank distinguishes four income groups: low, lower middle, upper middle, and high. According to this classification, there are 108 middle income countries (including lower and upper middle income) out of 217. Felipe et al. (2012) classified 48 countries as middle income, 32 as low income and 40 as high income. Both classifications suggest that the group of middle-income countries is the biggest. These countries account for about five billion people (two-thirds of the world's population) and represent about one-third of global GDP. They are crucial for global stability and economic growth. The World Bank suggests positive spillovers of the development of middle income countries to the rest of the world such as poverty reduction, international financial stability, trade, food and water security, and sustainable energy development (World Bank, 2022).

Gill and Kharas (2007) observed the development paths of middle-income countries and concluded that only a few reached the high income level. Based on these observations they created the concept of the middle-income trap, i.e. the transition from middle-income to high income is not automatic. In order to reach high income it is necessary to implement an appropriate strategy that involves specializing and diversifying production or innovations. Ohno (2009) suggests that in order to reach high income level middle income economies have to transform their economic model. It is necessary to internalize skill and knowledge by accumulating industrial human capital. Local units are replaced by foreigners in all areas of production including management, technology, design, factory operation, logistics, quality control, and marketing. The theory of the middle-income trap suggests the existence of crucial differences between middle income countries and low and high income countries when it comes to engines of growth which justifies confining the analysis to these groups of countries. Joyasooriya (2017) and Aiyar et al. (2013) found a negative impact of investment share on the probability of being trapped. Building savings is the factor that makes investment expansion possible which is one of the key determinants of success for middle-income countries.

Many of the empirical studies that investigated the determinants of savings rate are devoted to low-income countries (mostly African) (Adelakun, 2015; Kapingura et al., 2015; Kudaisi, 2013). Middle income countries are analysed less frequently. Some middle income countries were included by Cansin Doker et al. (2016). However, their research sample included also low-income ones. Bhandari et al. (2007) investigated the determinants of private savings in five South Asian countries while Horioka and Hagiwara (2011) concentrated on those in developing Asia. Other studies on middle income countries are usually based on a narrow database. Therefore, there is a gap in terms of studies that analyze the determinants of savings rates in middle income countries. This article aims to find the determinants of the savings rate in middle income countries and compare the results with other studies that investigate different sub-groups of countries.

The structure of the article is as follows. Section 1 is a literature review devoted to determinants of savings. In Section 2 data, methodology and form expectations referring to savings of estimated parameters on the basis of review of theoretical and empirical literature are presented. Section 3 is devoted to presenting and discussing results. Concluding remarks are provided in the last Section.

## 1. Conceptual underpinnings

An important strand of economic literature investigates the role of demographic factors in shaping the savings rate in the economy (Samantaraya & Patra, 2014). The basic concept that tries to explain the link between demographic factors and individuals' savings and consumption is the Life Cycle Income Hypothesis developed by Modigliani and Brumberg (1954). It is based on the assumption that individuals allocate their lifetime income to consumption in several periods in their life to maximize lifetime utility. The aim is to equalize the discounted marginal utility of consumption in each period. People seek to smooth their consumption throughout their life, borrowing when they have low income and saving when they have high income. The life cycle model was modified by adding childhood and retirement (Coale & Hoover, 1958).

The early life-cycle stage has a negative impact on public and private savings. The demographic transition of declining fertility and mortality affects savings patterns. The savings rate grows quickly in the first period after the transition and after a few decades it starts to decline because more and more people retire (Mason, 2001). This model was also extended by including microeconomic behaviour. Tobin (1967) added variables to the model such as a positive interest rate, probable life span, income profiles for men and women, two periods of dependency and profiles for men and women. Coale and Hoover (1958) assumed that mortality and fertility occur independently of life cycle savings behaviour. The life cycle income hypothesis implies that savings' behaviour depends on the growth rate of the national income, pension plans and the age structure of the population (Colak & Ozturkler, 2012).

An empirical study conducted by Tobing (2012) shows that demographic factors explain up to 68% of the differences in savings rates between countries. According to the Life Cycle Income Hypothesis, a high dependency ratio (young dependency as well as old dependency) means that there are more individuals who are at the stage of their life when they reduce much more than accumulate savings. So a high dependency ratio is supposed to have a negative impact on national savings. Using data for 14 north African countries and four middle eastern countries over the period 1960–2001. Yasin (2007) distinguished three groups of people: children (under 14), working group (15–65) and retired (over 65). He also showed that there are negative savings among children and retirees and positive savings among the working group.

Several studies indicate the negative impact of the dependency ratio (both young and old) on savings. Some are devoted to particular countries (e.g., Ahmed & Cruz, 2018; Jongwanich, 2010; Samantaraya & Patra, 2014) and others are conducted based on panel data for groups of countries (e.g., Kudaisi, 2013; Loayza & Shankar, 2000). Bosworth and Chodorow-Reich (2006) found that aging negatively impacts the savings ratio and that demographic factors

have no influence on savings in industrial countries. In contrast, Horioka and Wan (2007) found no evidence of the link between variables connected with the age structure and savings rate in China. Bloom et al. (2002) showed that higher life expectancy positively affects savings at every age. Doshi (1994) also found a positive link between life expectancy and savings, but only for less-developed countries. For developed countries the results obtained by Doshi (1994) suggested the opposite relationship. Empirical studies also suggest the negative impact of population growth on savings (Ogbokor & Samahiya, 2014).

The absolute Income Hypothesis suggests that the savings ratio is connected with income level. Consumption and savings depend on disposable income. However, if income increases consumption also increases but less than income. Rich people save relatively more and consume proportionally less than poor people which is why the increase in savings caused by an increase in income is proportionally higher than the increase in consumption. A positive link between income and savings rate has been confirmed by various empirical studies (e.g., Agrawal, 2001). According to Friedman's (1957) Permanent Income Hypothesis, consumption is a continuous function of income. Consumption and savings depend on the expected long-term average income. People save when their current income exceeds their anticipated level of permanent income.

According to the concept of Ricardian Equivalence, savings also depend on fiscal policy. Expectations also play a major role in this theory. An expansionary fiscal policy that results in an increase in public debt causes an increase in savings. The reason is that households expect that taxes will increase in the future because it will be necessary to pay off debt. Consumers are rational and decide to save more now in order to be able to pay higher taxes in the future. This theory implies that the fiscal stimulation of the economy by fiscal policy is ineffective. Larbi (2013) confirmed the positive link between government deficit and private savings. According to Nasir and Khalid (2004), a fiscal deficit negatively impacts private savings. These results are contrary to the implications of the Ricardian Equivalence Theory.

The intensive development of the financial sector in recent decades has drawn researchers' attention to its implications for other macroeconomic indicators including savings rates. The relationship between financial development and savings was investigated by McKinnon (1973) who concluded that the development of the financial sector has a positive impact on savings because it raises the efficiency of financial intermediation. A developed financial sector can provide alternative savings' instruments that are more suitable for individual preferences (Schmidt-Hebbel & Serven, 2002). Quartey (2005) found a positive relationship between financial development and savings in Ghana between 1970 and 2001. Meanwhile Ang (2009) investigated the link between the financial system and savings in Malaysia between 1960 and 2007. He found a positive relationship between financial deepening and sav-

ings although the development of insurance markets and the liberalization of the financial system had a negative impact on savings. It implies that the consequence of financial development which may increase borrowing patterns will increase consumption at the expense of savings (Kapingura et al., 2015).

The results of studies in this area are mixed. Analysing Pakistan, Khan and Hye (2010) found a positive relationship between financial development and savings. Similarly, Granville and Mallick (2004) employed the same model for the UK and found that financial sector development has a positive impact on savings and growth. Studies do not provide a clear explanation of the link between financial liberalization and savings. Reinhart and Tokatlidis (2001) stated that financial liberalization had positive effects mostly in developed countries. However, in low-income countries they did not identify any benefits. Loayza et al.'s (2000) empirical results suggest that financial liberalization does not boost private savings. Morgan and Long (2020) study example of Laos and prove the positive attitude of financial literacy on savings. While Cohn and Kolluri (2003) confirmed the positive impact of the interest rate on savings other studies suggest the opposite (e.g., Thanoon and Baharumshah, 2005) or find no significant impact of interest rates on savings (e.g., Kudaisi 2013).

Because of the liberalization of international trade external shocks are more easily distributed, causing fluctuations in small, open economies. The consequences of a deterioration in the terms of trade in small, open economies have drawn much attention. The Harberger-Laursen-Metzler effect suggests that a decrease in current income arising from an adverse shock in the terms of trade leads to a decrease in total savings and a deterioration of the current account balance (Wang et al., 2016). The effects of changes in the terms of trade on savings behaviour are affected by expectations formed by private agents. If they expect that the deterioration is temporary they may decrease their savings to compensate for a decrease in their purchasing power and keep expenditures constant. If the change is expected to be permanent, it could influence current and future income but have no effect on the savings rate (Jongwanich, 2010).

Empirical evidence on the link between inflation and savings rate is mixed. Several studies have found that inflation has a positive impact on savings (e.g., Ang, 2009; Loayza & Shankar, 2000). It is based on the assumption that inflation proxies for economic instability. The precautionary motive concept suggests that greater macroeconomic instability encourages people to save more of their income (Kapingura et al., 2015). On the other hand, high inflation may depress the value of real wealth and erode consumer income which ultimately discourages savings. Samantaraya and Patra (2014) suggest that inflation negatively impacts savings.

The structure of the economy is also expected to influence the savings rate. Samantaraya and Patra (2014) stated that the share of the agriculture sector in GDP may negatively influence household savings. They indicated a link be-



tween a significant decline in the share of the agricultural sector in India after the 1970s and an increase in savings. According to Abid and Afridi (2010), households in rural areas record a higher saving ratio than those in urban areas. A positive link between the percentage of the rural population and savings was also suggested by Niculescu-Aron and Mihaescu (2012). Cardenas and Escobar (1998) found that private savings significantly decrease with urbanization although the opposite was suggested by Yasin (2007). He found that increased urbanization leads to an increase in the savings rate.

Studies devoted to determinants of savings rate are mixed. Researchers look for determinants of savings in many different areas such as demography, the financial sector, etc. Many studies are devoted to analysis of particular countries (Samantaraya & Patra, 2014). In the case of a panel analysis of groups of countries the criterion of selecting them is geographical proximity (Kudaisi, 2013) or membership in an international organization (Aric, 2015). It is observed that there is shortage of studies devoted to groups of countries representing the same level of income and especially middle-income.

## **2. Data, methods and hypotheses**

The data used for this study is from the period 2000 to 2019. The research sample contains middle-income countries.<sup>2</sup> The first step was to choose criteria to distinguish particular income groups. There are classifications based on absolute income levels (Felipe et al., 2012; World Bank, 2022) and classifications based on the relative income level compared to a technological leader which is usually the USA (e.g., Bulman et al., 2017; Im & Rosenblatt, 2013). This study applies the criteria proposed by Im and Rosenblatt (2013) whereby middle-income is between 15% and 60% of the GDP per capita of the USA. Small economies with populations not exceeding one million were excluded. Thus, the final sample comprised 44 middle-income countries with populations greater than 1 million. Table 1 contains the variables used in this study, their description and source of data. Table 2 presents descriptive statistics including the number of observations, mean value, standard deviation, minimal and maximal value.

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<sup>2</sup> Research sample includes: Algeria, Argentina, Belarus, Botswana, Brazil, Bulgaria, Chile, Columbia, Costa Rica, Croatia, Czech Republic, Dominican Republic, Estonia, Eswatini, Gabon, Greece, Hungary, Iran, Iraq, Latvia, Lithuania, Malaysia, Mauritius, Mexico, New Zealand, North Macedonia, Oman, Panama, Poland, Portugal, Romania, Russia, Saudi Arabia, Serbia, Slovakia, Slovenia, South Africa, South Korea, Spain, Thailand, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uruguay, Venezuela.

**Table 1. Variables descriptions**

Variables	Description	Source of data
Gross_domestic_savings	gross domestic savings calculated as GDP less final consumption expenditure (total consumption)	World Development Indicators
Gross_savings	gross savings (% of GDP) calculated as GDP less final consumption expenditure (total consumption)	World Development Indicators
Young_dependency	ratio of people younger than 15 to working age population between 15 and 64 age	World Development Indicators
Old_dependency	ratio of people older than 64 to working age population	World Development Indicators
Labour_compensation	total compensation of employees given as a percent of GDP	World Development Indicators
Military_expenditure	ratio of military spending in country to GDP	World Development Indicators
Industry_share	share of industrial sector in GDP	World Development Indicators
Unemployment	unemployment rate based on nationally representative labour force surveys	World Development Indicators
Inflation	inflation measured on the basis of the consumer price index	World Development Indicators
Terms_of_trade	ratio between the index of export prices and the index of import prices	World Development Indicators

Source: (World Development Indicators, n.d.).

In order to find determinants of the savings rate the following regression model was used that includes nine explanatory variables and gross domestic savings (% of GDP) as the dependent variable:

$$\text{Gross\_domestic\_savings} = \beta_0 + \beta_1 \text{Young\_dependency} + \beta_2 \text{Old\_dependency} + \beta_3 \text{Labour\_compensation} + \beta_4 \text{Military\_expenditure} + \beta_5 \text{Industry\_share} + \beta_6 \text{Unemployment} + \beta_7 \text{Inflation} + \beta_8 \text{Terms\_of\_trade} + \text{StateFixedEffect} + \text{TimeFixedEffect} + e$$

The baseline model was estimated using a Fixed Effect (FE) model with time effects. Here there exists a choice between a fixed effect model and a random effect model. In order to make a decision estimation was preceded by performing the Hausman test. The  $p$ -value obtained in this test equals 0.02 and allows the rejection of the null hypothesis according to which the difference in coefficients is not systematic at the level of 0.05 which suggests

**Table 2. Descriptive statistics**

Variable	Observations	Mean	Standard deviation	Min	Max
Gross_domestic_savings	887	26.03466	12.08013	1.584125	87.8268
Gross_savings	827	23.53766	8.541504	3.850888	57.41379
Young_dependency	920	35.58203	14.36083	17.65597	80.10817
Old_dependency	920	15.60766	8.01826	3.003785	34.72009
Labour_compensation	880	0.4840763	0.1146993	0.0896572	0.7062411
Military_expenditure	890	2.05129	1.846562	0	13.32567
Industry_share	909	5.569747	11.52382	0	66.56408
Unemployment	920	10.41883	6.86341	0.25	37.25
Inflation	867	6.330244	13.75285	-10.06749	254.9485
Terms_of_trade	920	118.9575	43.80566	50.19474	458.5745

Source: own elaboration.

the use of a fixed effect model. In order to check the robustness of the results two alternative estimators were used: FGLS and PCSE. FGLS is a useful method because it deals with OLS disturbances such as heteroskedasticity, autocorrelation and cross-panel correlation. According to Beck and Katz (1995), FGLS produces coefficient standard errors that are underestimated. They carried out Monte Carlo experiments suggesting that the PCSE estimator produces accurate standard error estimates with little, or no loss in efficiency comparing to FGLS.

The same three estimators were used in a model with an alternative dependent variable: gross savings:

$$\text{Gross\_savings} = \beta_0 + \beta_1 \text{Young\_dependency} + \beta_2 \text{Old\_dependency} + \beta_3 \text{Labour\_compensation} + \beta_4 \text{Military\_expenditure} + \beta_5 \text{Industry\_share} + \beta_6 \text{Unemployment} + \beta_7 \text{Inflation} + \beta_8 \text{Terms\_of\_trade} + \text{StateFixedEffect} + \text{TimeFixedEffect} + e$$

The Penn World Table 10.0 database was used to calculate GDP per capita for all countries which was necessary to be able to classify them into particular income groups and ultimately to create the research sample. This database was also the source of data on the share of labour compensation in GDP. The source of all other variables used is the World Bank database.

Models include eight independent variables. The first two variables refer to demography. In the case of the dependency ratio expectations were based on Life Cycle Theory, which suggests that the biggest savings are generated

when people are of working age. Children and pensioners tend to have negative savings so a higher share of young and old people in the population negatively affects the overall savings rate. The literature provides evidence for a negative relationship between the dependency ratio and savings. The results for low-, middle-, and high income countries do not vary significantly. This link was confirmed by panel estimations for poor African countries (Kudaisi, 2013; Yasin, 2007). The same conclusions are suggested by Agrawal (2001) who included seven developing Asian countries (Singapore, South Korea, Taiwan, Thailand, Malaysia, India and Indonesia) and Horioka and Hagiwara (2011) who analyzed developing countries in Asia. Thanoon and Baharumshah (2012) drew similar conclusions and found no difference between Asian and Latin America Economies.

The next variable is labour compensation which constitutes the share of national income received by workers. On the other hand, there is capital income which goes to the owners of assets. A negative impact of the labour share on savings rate is expected because of the positive correlation between this variable and inequalities. This relationship is confirmed by several studies. For example, Daudey and Garcia-Penalosa (2007) found that a higher labour share is connected with lower Gini in 39 developed and developing countries. Checchi and Garcia-Penalosa (2008) obtained the same results when analysing 16 OECD countries. Wolff (2010) observed that capital ownership is mostly concentrated at the top of the income distribution and increasing the capital share increases income inequalities. The hypothesis that deeper income inequalities increase savings was confirmed by several studies (e.g., Bunting, 1991; Dynan et al., 1996). It is based on the assumption that people with a higher income have a higher propensity to save so the concentration of income is expected to positively affect savings.

Unemployment negatively affects personal income so the negative correlation between income and savings rate proposed by the absolute income theory suggests that it should have a negative influence on savings. Military spending is expected to have a negative impact on savings for three reasons. Firstly, the reallocating of public funds to the army causes a reduction in public services. Households need to reduce savings and increase consumption in order to compensate. Secondly, an increase in public spending diminishes public savings if it is not connected with an increase in taxation. Finally, armament imports lead to increased foreign debt reducing foreign savings (Deger, 1986). The literature review showed that results that refer to the link between GDP structure, inflation and savings are mixed. In the case of terms of trade a positive impact on the savings rate is expected which is based on the Harberger-Laursen-Metzler effect.

### 3. Results and discussion

Table 3 presents the results of three regression equations using the three alternative estimation methods. In all these specifications, the dependent variable is gross domestic savings. Table 4 presents the results of three estimations using the same methods as in Table 3 but with gross savings as the dependent variable.

**Table 3. Results of estimations with gross domestic savings**

Variables	FE	FGLS	PCSE
Young_dependency	0.0741637 (0.1349713)	-0.1307574*** (0.0201414)	-0.1867151*** (0.0479971)
Old_dependency	0.3272396 (0.34592)	-0.1595099*** (0.0342667)	-0.2454011*** (0.0976595)
Labour_compensation	-45.42193*** (11.43854)	-25.7801*** (2.233605)	-38.86476*** (4.792349)
Military_expenditure	-0.9287919** (0.4252179)	-0.7814734*** (0.1384219)	-0.6036719*** (0.1630324)
Industry_share	0.5286666*** (0.0844803)	0.2610368*** (0.0311571)	0.2937169*** (0.044588)
Unemployment	-0.3958109*** (0.0705206)	-0.4049658*** (0.0246136)	-0.2665871*** (0.0415516)
Inflation	-0.0556894*** (0.0180001)	-0.0476124*** (0.01957)	0.0091707 (0.131842)
Terms_of_Trade	0.0510722*** (0.0191073)	0.0055612 (0.0054968)	0.0577791*** (0.0103644)
$R^2$	0.64	-	0.9
Observations	785	785	785
Number of countries	42	42	42

Source: own elaboration.

Most model specifications suggest that both dependency ratios (young and old) have a negative impact on the savings rate but the results of the FE estimations are different. The young dependency ratios are significant at the level of 1% in four out of the six specifications and the old dependency ratio is significant in only two out of the six specifications. The dependency ratios are insignificant in both specifications where the FE model was applied. The results suggested by most model specifications that refer to links between these demographic variables are in line with expectations but not robust. The

**Table 4. Results of estimations with gross savings**

Variables	FE	FGLS	PCSE
Young_dependency	-0.0077072 (0.1038917)	-0.1047146*** (0.0226948)	-0.1324977*** (0.0422051)
Old_dependency	0.3082833 (0.2284177)	-0.0487773 (0.0375636)	-0.0121408 (0.1373445)
Labour_compensation	-35.23657*** (10.9188)	-24.37252*** (2.383591)	-24.41311*** (5.537424)
Military_expenditure	-1.47092*** (0.6082281)	-0.7152676*** (0.138579)	-0.9804139*** (0.207084)
Industry_share	0.4380464*** (0.1109569)	0.4553124*** (0.0259308)	0.4006672*** (0.0432615)
Unemployment	-0.226569*** (0.0793033)	-0.1238151*** (0.0243332)	0.0344441 (0.057358)
Inflation	-0.0493095*** (0.022284)	.003455 (0.0172889)	-0.0068487 (0.0164232)
Terms_of_Trade	0.0312775* (0.0182315)	-0.0228699*** (0.0042285)	0.0091622 (0.0123862)
R <sup>2</sup>	0.53	–	0.91
Observations	779	779	779
Number of countries	42	42	42

Source: own elaboration.

labour\_compensation variable which represents the share of labour compensation in GDP is significant at the level of 1% in all specifications. The conclusions arising from the estimation are in line with the results obtained in this study. The unemployment rate and military spending have both negative and significant impact on the savings rate which is also in line with expectations. In the case of unemployment, this relationship is significant at the level of 1% in five out of the six model specifications and in the case of military spending the relationship is significant in all estimated equations. The share of industry in GDP has a positive and statistically significant impact on the savings rate. This study provides evidence for an adverse relationship in middle-income countries. The results of this study also do not shed new light on the relationship between inflation and savings rate. The coefficient for inflation is not significant in three out of the six regression equations. The sign of the coefficient also varies when a different estimator is applied. In the case of the terms of trade the situation is similar. In most regression equations the sign of the coefficient for the terms of trade is positive. These results are in

line with the Harberger-Laursen-Metzler effect. However, the results of the regression equations are not robust.

Results suggest that a high unemployment rate has a significant and negative impact on savings so it should be a crucial field of interest for policymakers in middle-income countries. The unemployment rate in middle income countries does not differ significantly from low- and high- income countries. In 2022 it was slightly higher: 6,1 vs 4,5 in high income countries and 5,4 in low income countries. The group of middle income countries is not uniform in this field. Unemployment constitutes big problem especially in African countries. In 2022 among the middle income countries included in the research sample the highest unemployment rate was recorded in South Africa (almost 30%). The unemployment rate exceeded 20% in other African countries such as Gabon, Eswatini and Botswana. A positive phenomenon is that the unemployment rate in middle income countries is quite low and stable. The negative effect of the pandemic in 2020 almost disappeared and in 2022 the unemployment rate was higher than in 2019 only by 0,4 percentage point (World Bank, 2022).

Military spending as a share of GDP in middle income countries are lower than in high income countries but significantly higher than in low income countries. On average they constitute 1,8%–1,9% of GDP. This value has remained quite stable in last decade. Military spending is determined mostly by non-economic factors such as the political and geopolitical situation. Military spending is high in the countries which face problems of civil war (e.g., Columbia) or are at risk of conflicts with neighboring countries. From the economic point of view military spending may be considered as an external factor which causes difficulty for policymakers. The necessity to invest large funds into the army caused by non-economic conditions reduces the possibilities of potential investments in different sectors contributing to an increase in national welfare.

The role of the industrial sector in the economy is much greater than in high and low income countries. Su and Yao (2017) advocate that the industrial sector is especially important at middle-income level because it constitutes a key engine for economic growth. Apart from the size of the industrial sector it is important as to how technologically advanced it is especially when it comes to the potential to reach a high income level. In this context an important fact is that in the research sample countries where the size of the industrial sector is the biggest are oil-exporting countries. So in these cases the main reason for the large size of the industrial sector is the contribution of the oil production sector instead of advanced industries. Results of these study suggest that in the case of middle income countries economic policy which prioritizes the industrial sector is favourable for savings accumulation.

A negative relationship between the share of labour compensation in GDP and the savings rate is problematic for policymakers because higher wages are

usually favourable and supported by the majority of people. A policy which is aimed at keeping wages on a low level is difficult to implement especially under a democratic regime. There is a conflict of interest between short run goals to improve the standard of living of people and long run goals to increase production capacity. For sure a policy aimed at reducing inequalities including a fast increase of the minimum wage and social benefits is not favourable for the generation of savings.

## Conclusions

This study provides evidence for the statistically significant influence of four explanatory variables (Labour\_compensation, Military\_expenditure, Unemployment and Industry\_share) on the savings rate in middle income countries. In the case of the other variables the results are not clear and robust. Robustness of the aforementioned variables, is confirmed by estimations using alternative methods of estimation and alternative dependent variables. Results referring to the relationship between the first three variables and the savings rate are in line with expectations. They are not controversial and strongly justified by theory. An important conclusion arising from the study is the positive impact of the size of the industrial sector on the savings rate which was diagnosed. Strong robust results in this field constitute important contribution to the discussion. The problem is lack of a clear answer about the relationship between inflation and terms of trade and the savings rate. This study does not provide robust results. The conclusion drawn based on the literature review of both theoretical and empirical evidence and also from this study is that the impact of a few factors on the savings rate is still not clearly justified. It means that there still exists a gap which may be filled by future studies. This study is confined to middle income countries but of course there is space for studies devoted to different group countries and a comparison of the results.

The limitation of the study was the lack of data or an incomplete dataset. This is why any variables that refer to the financial sector, which was widely discussed in the theoretical part, were not included in the model. Otherwise, the effect would be loss of many observations.



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