Macroeconomic, Political and Institutional Factors of Economic Growth

Olzhas Zhorayev[1*], Haoyue He[2]

[1] M.Narikbayev KAZGUU University, 8 Qorghalzhyn Hwy, 020000, Nur-Sultan, Kazakhstan
[2] King's College London, Strand, WC2R 2LS, London, United Kingdom

Abstract

Broad theoretical and empirical literature discusses how economic development is affected by different economic, political, institutional, social, and other factors. The classic macroeconomic growth theory argues that poorer states must have higher rates of economic growth compared to more prosperous states due to the so-called 'catch-up effect'. The concept of 'institutional sclerosis', suggested by Olson, claims that economic performance is worse in countries that have powerful interest groups. Some scholars suggest that economic growth is conditioned by 'institutional coherence' when one institution in a country promotes the efficiency of another. In this research, using regression analysis we estimate the effect of different factors on economic growth in 187 countries from 2001 to 2018. Our findings do not fully support Olson's argument that economic decline in some countries was conditioned by the influence of interest groups. Our econometric results do not confirm the importance of the effectiveness of state governance and the quality of public policy. At the same time, the most robust result of our analysis is a statistically significant negative relationship between the level of a country's initial economic development and its following medium- and long-term economic growth. This research contributes to the existing literature by testing Olson's institutional sclerosis effect for the last two decade,; estimating the combined effect of interacted variables that explains predictions of both 'interest groups' and 'varieties of capitalism' theories; considering various macroeconomic and social factors along with political ones in one multivariate model.

Keywords: Economic Growth, Interest Groups, Varieties of Capitalism, Institutional Coherence, Macroeconomic Convergence

*Corresponding author: Zhorayev O. - MS in Applied Economics, MA in Public Policy, M.Narikbayev KAZGUU University, 8 Qorghalzhyn Hwy, 020000, Nur-Sultan, Kazakhstan, 8 7172750120, e-mail: o_zhorayev@kazguu.kz

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Экономикалық өсудің макроэкономикалық, саяси және институционалдық факторлары

Жораев О.Ж.[1*], Хе Х.[2]

[1] М.Нәрікбаев атындағы КАЗГЮУ университеті, Қорғалжын 8, 020000, Нұр-Сұлтан, Қазақстан
[2] Лондондағы корольдік колледжі, Странд, WC2R 2LS, Лондон, Ұлыбритания

Түйін

Ауқымды теориялық және эмпирикалық әдебиеттерде экономикалық дамуға әр түрлі экономикалық, саяси, институционалдық, әлеуметтік және басқа факторлар қалай әсер ететіні талқыланады. Макроэкономикалық өсудің классикалық теориясы кедейленген мемлекеттер «қуып жету әсері» деп аталатындықтан бай мемлекеттерге қарағанда жоғары экономикалық өсу қарқынына ие болуы керек деп тұжырымдайды. Олсонның «институционалдық склероз» тұжырымдамасы мүдделі топтар күшті елдерде экономикалық көрсеткіштер нашар екенін дәлелдейді. Кейбір ғалымдар экономикалық өсім «институционалдық үйлесімділікке» сүйенеді, осылайша елдегі бір институт екіншісінің тиімділігін арттырады. Бұл зерттеуде регрессиялық талдауды қолдана отырып, біз 2001-2018 жылдар аралығында 187 елдің экономикалық өсуіне әр түрлі факторлардың әсерін бағалаймыз. Біздің нәтижелеріміз Олсонның кейбір елдердің экономикалық құлдырауына мүдделер тобы әсер етті деген уәжін толықтай қолдамайды. Біздің эконометрикалық нәтижелер мемлекеттік басқарудың тиімділігі мен мемлекеттік саясаттың сапасының маңыздылығын қолдамайды. Сонымен қатар, біздің талдаудың ең сенімді нәтижесі – бұл елдің бастапқы экономикалық даму деңгейі мен оның кейінгі орта және ұзақ мерзімді экономикалық өсімі арасындағы статистикалық маңызды теріс байланыс. Бұл зерттеудің бар әдебиеттерге қосқан үлесі келесі талдауда жатыр: Олсонның «институционалдық склерозының» соңғы екі онжылдықтағы экономикалық дамуға әсерін тексеру; өзара әрекеттесетін айнымалылардың біріккен әсерін бағалау, бұл екі теорияның да – «мүдделік топтар» және «капитализм сорттары» болжамдарын түсіндіреді; экономикалық өсудің бір көп өлшемді моделінде саяси факторлармен қатар әртүрлі макроэкономикалық және әлеуметтік факторларды есепке алу.

Түйін сөздер: экономикалық өсу, қызығушылық топтары, капитализмнің сорттары, институционалдық келісімділік, макроэкономикалық конвергенция

*Хат-хабаршы авторы: Жораев О.Ж. - MS, MPP, М.Нәрікбаев атындағы КАЗГЮУ университеті, Қорғалжын 8, 020000, Нұр-Сұлтан, Қазақстан, 87172750120, e-mail: o_zhorayev@kazguu.kz

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Макроэкономические, политические и институциональные факторы экономического роста

Жораев О.Ж.[1]*, Хе Х.[2]

[1] Университет КАЗГЮУ им. М.Нарикбаева, Кургальжинское шоссе 8, 020000, Нур-Султан, Казахстан

[2] Королевский колледж Лондона, Странд, WC2R 2LS, Лондон, Великобритания

Аннотация

В обширной теоретической и эмпирической литературе обсуждается, как на экономическое развитие влияют различные экономические, политические, институциональные, социальные и другие факторы. Классическая теория макроэкономического роста утверждает, что более бедные государства должны иметь более высокие темпы экономического роста по сравнению с более богатыми государствами из-за так называемого «эффекта догоняющего развития». Концепция «институционального склероза», предложенная Олсоном, утверждает, что экономические показатели хуже в странах, имеющих влиятельные группы интересов. Некоторые исследователи предполагают, что экономический рост обусловлен «институциональной согласованностью», когда одно учреждение в стране способствует повышению эффективности другого. В данной статье с помощью регрессионного анализа мы оцениваем влияние различных факторов на экономический рост в 187 странах за период 2001-2018 гг. Наши результаты не полностью подтверждают аргумент Олсона о том, что экономический спад в некоторых странах был обусловлен влиянием групп интересов. Наши эконометрические результаты не подтверждают важность эффективности государственного управления и качества государственной политики. В то же время, наиболее надежным результатом нашего анализа является статистически значимая отрицательная взаимосвязь между уровнем первоначального экономического развития страны и ее последующим средне- и долгосрочным экономическим ростом. Вклад данного исследования в существующую литературу заключается в следующем анализе: тестировании эффекта «институционального склероза», предложенного Олсоном, на экономическое развитие за последние два десятилетия; оценке комбинированного эффекта взаимодействующих переменных, который объясняет предсказания обоих теорий – «групп интересов» и «разновидностей капитализма»; учете различных макроэкономических и социальных факторов наряду с политическими в одной многомерной модели экономического роста.

Ключевые слова: экономический рост, группы интересов, разновидности капитализма, институциональная согласованность, макроэкономическая конвергенция

Introduction

After decades of post-war economic growth and even 'miracles' some rich countries faced a slowdown in their development path in the 1970s. This induced an interest among scholars in understanding why some states perform better or worse compared to others and what factors push or restrain economic progress in the long run.

This research discusses two influential conceptual frameworks in public policy and political economy – interest groups and varieties of capitalism – which have provided explanations for variations in economic performance among nations. The concept of institutional sclerosis in the theory of interest groups describes how groups' collective behavior can create inefficiencies in the economy and restrict economic development [1]. The concept of institutional coherence from the theory of varieties of capitalism (VOC) describes different types of capitalist economies and how congruent institutions stipulate better economic outcomes among them [2].

Our study is aimed at empirically testing these two theories' predictions and the influence of other factors on economic growth for the last two decades, using data compiled from 180 countries.

This article proceeds as follows. In the next section, we discuss related theories and empirical literature. After that, we develop our theoretical argument and hypotheses. We link the two concepts mentioned above by arguing that the idea of the influence of interest groups on economic development is valid for democracies but conditional on political-economic settings and certain other characteristics in a particular country. To test our argument, we use econometric analysis. In doing so, we consider countries with different types of market economies – liberal, coordinated, and others. In subsequent sections, we present the results of our empirical analysis. And finally, we conclude and discuss our research limitations.

Literature review

Among the most path-breaking theories explaining nations' economic performance are the theory of interest groups and the varieties of capitalist approaches.

The theory of interest groups

In his seminal book, Olson argued that due to the presence of a 'free-riding' problem and a negligible net benefit from participating in a large interest group, rational individuals would be more likely to organize for collective action in smaller groups [3]. With lower transaction costs, small groups are more able to mobilize and lobby governments to get privileges, monitor politicians, and eventually exploit the other organized part of the population (e.g., all taxpayers). Using US data, the scholar found empirical support for his theoretical predictions.

This concept has far-reaching macro implications: further developing his micro-behavioral theory, Olson used the logic of collective action to explain why some developed countries find themselves in a state of economic decline [1]. Since most interest groups (or 'distributional coalitions' as they are called by Olson) have rent-seeking objectives, their lobbying or monopolistic activities lead to inefficiencies in the economy. Unlike previous studies (e.g., [4]), Olson demonstrated that socio-economic losses from coalitions' activities could be very costly for society.

Moreover, in socially and politically stable countries, interest groups (cartels, farm associations, labour unions, lobbyists, etc.) over time become so powerful that it leads to a so-called 'institutional sclerosis' in society which restrains its ability to adapt to external economic and technological trends and ultimately slows down its economic activity. On the contrary, in countries that somehow destroyed interest groups (for instance, because of a war) or at least limited their power, economic growth would be comparatively higher.

At the same time, Olson claims that so-called 'encompassing' organizations representing a significant part of the population are more interested in lobbying for better public policy, as they get more benefits at the end of the day. Thus, their activity can benefit a country compared to small interest groups until encompassing groups start overusing their monopolistic power for an inefficient allocation of resources [1].

In the empirical literature that tested Olson's theory, the authors analyzed variations in economic outcomes:
- between countries;
- within one case country;
- between economic sectors;
- between various regions within one country.

In general, empirical studies have shown that the theory of interest groups better works for democratic societies [5,6], even in some developing countries [7], and across countries rather than within one country [8–10]. However, variations in economic performance may be conditional on the periods considered [11].

The theory of varieties of capitalism

According to varieties of capitalism theory (VOC), suggested by [12], developed economies are divided into two ideal models of capitalism – coordinated market economies (CMEs) and liberal market economies (LMEs). CMEs are characterized by a strategic interaction of firms

with other economic agents predominantly through non-market institutional mechanisms, while in LMEs, the effective interaction of firms and other actors occurs in a competitive market environment [2].

The authors of VOC hence build upon the previous studies of typologies of capitalist economies [13,14]. However, in contrast to them, Hall & Soskice use their concept not only for descriptive but also for explanatory purposes. In particular, their theory argues that both CMEs and LMEs can demonstrate comparatively high and stable long-run economic growth [2], and due to institutional complementarities, when one available institution raises the efficiency of another (and vice versa) CMEs and LMEs will outpace countries with less effectively coordinated or market-coherent institutions [12].

By empirically testing their theoretical predictions based on OECD data, the advocates of VOC found that the two ideal types of economies have indeed grown with steady positive rates during the 1960s–1990s [2], and performed comparatively better than states with less complementary institutions [15].

Other explanations

It should be mentioned that there is a broader debate in the literature on the reasons for economic development. Not describing all theories in detail, we nevertheless briefly mention a few of the most influential of them, which complement the interest groups and VOC approaches and can be grouped as follows:

- *macroeconomic:* poor countries should grow faster than rich countries to achieve an optimal growth path and eventually converge (catch-up) with the level of development of rich countries [16,17];
- *political:* economic outcomes can be adversely affected by such forms of political instability as political assassinations [18], terrorism and violence [19] through a disinvestment channel;[1]
- *regulative:* economic development depends on effective state governance and institutions, which can effectively secure property rights, law and contract enforcement, provide qualitative public services, including infrastructure [20];
- *social:* education is another strong factor of GDP growth [21], and economic prosperity can be dependent on ethnic diversity as well [22].

Literature also discusses economic cycles that have different timescales. For instance, Kondratieff waves, related to technological changes, are hypothesized to occur in 45-60-year period [23,24]. Since the long Kondratieff cycles do not fit into our empirical analysis of GDP growth rates for 20 years and are not of primary interest to us, they are outside the scope of this paper.

We will consider some of the above factors in our empirical model below.

Theoretical argument and hypotheses

We have seen how economic progress can be conditioned by powerful coalitions' activity and complementary institutions' presence. Interest groups theory focuses on the behavior of private interests (small groups or to some degree encompassing groups), which have an adverse influence on economic development through sclerotic processes. VOC, by contrast, considers sub-institutional domains and explains how economic agents effectively interact with each other in a particular politico-economic structure and how this translates into economic prosperity. The key actor in VOC theory is a firm, compared to coalitions in the theory of interest groups.

Both theories consider democratic societies, mainly comparing Anglo-Saxon countries with continental Europe. Both take countries as units of observation, although in the empirical literature, the theory of interest groups was applied to sub-governmental and sectoral levels as well.

We argue that the degree of institutional efficiency strengthens or moderates the final effect of coalitions' activity on economic growth. Notably, we put forward the following main hypotheses:

1) Countries with weak interest groups and coherent institutions (A) would *ceteris paribus* have higher economic growth than countries with powerful interest groups and less coherent institutions (B).

2) Countries with strong interest groups and coherent institutions (C) and countries with weak interest groups and incoherent institutions (D) would *ceteris paribus* have modest economic growth compared to states with other combinations of interest group/institutional systems (A & B).

To see it more clearly, we demonstrate these hypotheses in the matrix below:

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[1] These forms of political instability, in our view, should be set apart from the one described by Olson [1], as long as they are not associated with the destruction of interest groups.

Institutions

		Coherent	**Incoherent**
Interest Groups	**Weak**	(A) HIGH economic growth	(D) MODEST economic growth
	Strong	(C) MODEST economic growth	(B) LOW economic growth

Methodology

To test our argument and theoretical hypotheses we apply regression analysis. First, using cross-sectional data for 31 various countries, we test both above-mentioned frameworks – the interests group theory and VOC. Second, we exclude the institutional coherence factor and run a regression to evaluate our modified econometric model, using data on 187 countries. Lastly, we conduct sensitivity analysis by including the pandemic year of 2020 into estimations to see the robustness of our results.

In the first stage, as data are available not for all variables, and after excluding an outlier, the final number of countries included in estimates is reduced to 16 (Table 1).

Our econometric model is specified as follows (all variables and data source are described in details in Table 2):

$$GDP\ growth = \alpha + \beta1\ X1 + \beta2\ X2 + \beta3\ Interaction + \Sigma\ \beta i\ Zi + ui \qquad (1)$$

where:

GDP growth is our dependent variable, measured as an average percentage growth in GDP per capita for the period 2000–2018. We take this period range, as all our independent variables are for the periods up to 2000, and we assume that they affected the dependent variable after 2000 (the cause precedes the effect). Taking these different periods also allows us to minimize the problem of endogeneity in our model;

X1 is our first key independent variable to test the theory of interest groups. We use two proxies for this variable: *Age of democracy* (age of democracy in a country in 1970) and *All years of democracy* (all democratic years in a country during the period of 1950–2000);

X2 is our second key independent variable to test the theory of varieties of capitalism. Following previous empirical approaches [15; 25], we use *HG Index* as a proxy for this independent variable, which shows the strength of institutional coherence in market economies;

Interaction is a variable for the interaction between the two key independent variables, i.e. *X1*X2*;

Zi is a vector of other (control) variables. These variables are included in the model to control for some of the factors described above (macroeconomic, political, social);

ui is the error term.

Table 1 – List of countries with codes and their classification[2]

#	Country code	Country name	Type of capitalism	Countries included in estimates
1	2	3	4	5
1.	ARG	Argentina	Hierarchical	
2.	AUS	Australia	Liberal	✓
3.	AUT	Austria	Coordinated	✓
4.	BEL	Belgium	Coordinated	✓
5.	BRA	Brazil	Hierarchical	

[2] 26 countries are representing the three types of capitalism well explored in the literature (liberal markets, coordinated markets, and hierarchical markets). Additional 5 countries are other types of market economies, for which we have data on one of the key variables of our interest – *Age of democracy* (from [26]).

1	2	3	4	5
6.	CAN	Canada	Liberal	✓
7.	CHE	Switzerland	Coordinated	✓
8.	CHL	Chile	Hierarchical	
9.	COL	Colombia	Hierarchical	
10.	DEU	Germany	Coordinated	✓
11.	DNK	Denmark	Coordinated	✓
12.	ESP	Spain	Other	
13.	FIN	Finland	Coordinated	✓
14.	FRA	France	Coordinated	✓
15.	GBR	United Kingdom	Liberal	✓
16.	GRC	Greece	Other	
17.	IRL	Ireland	Liberal	
18.	ISL	Iceland	Coordinated	
19.	ITA	Italy	Other	
20.	JPN	Japan	Coordinated	✓
21.	LUX	Luxembourg	Other	
22.	MEX	Mexico	Hierarchical	
23.	NLD	Netherlands	Coordinated	✓
24.	NOR	Norway	Coordinated	✓
25.	NZL	New Zealand	Liberal	✓
26.	PER	Peru	Hierarchical	
27.	PRT	Portugal	Other	
28.	SWE	Sweden	Coordinated	
29.	TUR	Turkey	Hierarchical	✓
30.	USA	United States	Liberal	✓
	ZAF	South Africa	Hierarchical	

Sources: World Bank's World Development Indicators, as well as [27–29]

Table 2 – Variables and data description

Variable	Description	Data source
1	2	3
GDP growth	GDP per capita growth, average % for the period 2000–2018	Own calculations using the World Bank's *World Development Indicators,* available at: http://wdi.worldbank.org/
Age of democracy	Age of democracy in 1970, the number of years a country has lived under democracy since the last transition (some countries may have a negative sign, indicating the future transition)	[26]
All years of democracy	A dummy variable: 1 = all democratic years in a country for the period 1950– 2000, 0 = otherwise	Daniel Treisman, *Decentralization Dataset,* 2008, available at: http://www.sscnet.ucla.edu/polisci/f acul-ty/treisman/
HG Index	Hall-Gingerich institutional coherence index for the period 1990–1995: from 0 (lowest coherence) to 1 (highest coherence)	[25]

1	2	3
Log GDP	The natural logarithm of GDP per capita in 2000, PPP (in constant 2011 international dollars).	Own calculations using the World Bank's *World Development Indicators*, available at: http://wdi.worldbank.org/
Political instability	Perceptions of the likelihood of political instability, politically-motivated violence, including terrorism, percentile rank from 0 (lowest) to 100 (highest) index	*Worldwide Governance Indicators*, available at:http://info.worldbank.org/governan ce/wgi/
Education	The difference between the percentage of population in higher education in 1970 and the corresponding percentage in 1965 in a country	[26]

Empirical results
The results of cross-sectional data analysis on 16 countries
Summary statistics on all variables are provided in Table 3.

Table 3 – Summary statistics of variables (full sample = 31 countries)

Variables	Number of observations	Mean	S.D.	Min.	Max.
GDP growth	31	1.44	0.90	0.10	3.79
Age of democracy	23	51.65	35.57	-7	101
All years of democracy	31	0.65	0.49	0	1
HG Index	17	0.54	0.31	0.02	1.00
Log GDP	31	10.23	0.59	8.77	11.31
Political instability	31	74.42	26.33	8.47	100
Education	23	2.95	1.80	0.59	6.73

Source: authors' own estimations

To analyze statistical relationships between these variables we run six regression specifications. To account for a possible heteroscedasticity issue, robust standard errors were used. We identified Ireland as an outlier and excluded it from our regression analysis.[3] Due to high correlations between *the Age of democracy* and some other independent variables, to avoid the problem of multicollinearity and its consequences we focused on *All years of democracy* in our analysis.

Our econometric results are presented in Table 4. Specifications in columns 1–2 demonstrate the results of our univariate regressions with the key independent variables – *All years of democracy* and *HG Index*, respectively. Specification 3 includes both independent variables and also shows their combined effect on GDP growth. Specifications 4 to 6 additionally include control variables – Log GDP[4], Political violence index, and Education as possible drivers of economic progress.

We see that the two variables of our interest separately have no significant effect on GDP growth. However, when they are included in multivariate regression models, they became

statistically significant with a better fit of models into the data (much higher R-squared), and this result is robust to different specifications (columns 4–6). Unexpectedly, the coefficient on the *'All years of democracy'* variable has a positive sign, i.e., a country with stable democracy during 1950–2000 and, hypothetically, stronger coalitions *ceteris paribus* had on the average higher GDP per capita growth (by 0.30–0.66 percentages points) over the subsequent two decades, which contradicts the theory of interest groups. The coefficient on the *'HG Index'* variable has a positive sign as well. This supports our hypothesis and predictions from VOC theory that a country with more coherent institutions has *ceteris paribus* better economic performance. Remarkably, the magnitudes of the effects of both variables on per capita GDP growth are almost the same.

A more interesting result comes from the *'Interaction (All years of democracy * HG Index)'* variable: the combined effect is negative, although statistically significant only in two specifications (4 and 5) out of four. Our interpretation of this result would be that only in an efficient institutional environment private interests become powerful

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[3] We identified the outlier using graphical and formal analyses (IQR, DFbeta test, and Cook's distance test).

[4] Log GDP reflects the level of economic development in the considered countries in 2000.

enough to restrain the economic development of their country through the sclerotic effect. In other words, without coherent institutions interest groups are unable to capture the government for rent-seeking activities.

Among control variables, only *Log GDP* is statistically significant at the 99 percent level across specifications 4 to 6. Its effect on *GDP growth* is negative, supporting the hypothesis of macroeconomic convergence of 16 analyzed countries in their long-term economic development.

However, the above analysis suffered from a low number of observations, which was the case due to a lack of data on institutional coherence (HG Index).

Table 4 – Econometric results on 16 countries, OLS

	Sclerotic process (interest group theory)	Institutional coherence (VOC theory)	Combined effect	+ Other factors (macroeconomic, political, social)		
All years of	0.12		0.30*	0.57**	0.58**	0.66*
democracy	(0.09)		(0.14)	(0.20)	(0.19)	(0.35)
HG Index		0.14	0.36***	0.57***	0.71***	0.69**
		(0.15)	(9.56e-08)	(0.06)	(0.21)	(0.31)
Interaction			-0.19	-0.51*	-0.52*	-0.67
(All years of			(0.17)	(0.25)	(0.26)	(0.54)
democracy * HG						
Index)						
Log GDP				-0.81***	-0.86***	-
				(0.24)	(0.22)	0.81**
						*
Political instability					0.005	(0.25)
					(0.008)	
Education						0.02
						(0.04)
Constant	1.03***	1.06***	0.77***	9.16***	9.12***	9.00**
	(0.07)	(0.13)	(8.30e-08)	(2.49)	(2.43)	*
						(2.46)
F-test	1.55	0.88	6.5e+12**	5.52**	10.17***	7.12**
			*			*
P-value for F-test	0.23	0.36	0.0000	0.0147	0.0015	0.0056
R-squared	0.03	0.03	0.08	0.40	0.43	0.41
Number of	16	16	16	16	16	16
observations						

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$
Source: authors' own estimations

The results of cross-sectional and panel data analysis on 187 countries

To boost the number of observations we modify our econometric model into the following form, excluding the institutional coherence factor:

$$Economic\ growth = \alpha + \delta 1\ All\ years\ of\ democracy + \delta 2\ Log\ GDP$$
$$+ \delta 3\ Political\ instability + \delta 4\ Government\ effectiveness + ui \quad (2)$$

Here *Economic growth* is a dependent variable – GDP per capita % growth, on average for the years 2001-2018, 2001-2005, 2006-2010, 2011-2015;[5]

All years of democracy is an independent, dummy variable, proxy for interest groups' influence (1 – a country had been democratic during all years since 1950 till 2000, and 0 – otherwise). It is assumed that countries with stable democracy during a long period of time have stronger interest groups, which negatively affects their economic development. So, we expect $\delta1$ to have a negative sign;[6]

Log GDP is a variable to test a macroeconomic convergence effect (the natural logarithm of per capita GDP, on PPP (in constant 2011 international dollars) for the years 2000, 2005, and 2010). It is in PPP for comparability between countries and in log values to minimize the problem of possible non-stationarity in times series. We suppose that the coefficient $\delta2$ would be negative;[7]

Political instability is an explanatory variable for the impact of political instability, violence and terrorism on economic growth (perceptions of the chances of instability according to surveys, measured from 0 to 100). The relationship between this variable and dependent variable is presumably negative;[8]

Government effectiveness is a variable to test the effect of state institutions on economic development (perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies, measured from 0 to 100). We expect $\delta4$ to have a positive sign.[9]

Most importantly, to remove the effect of other unobserved time-invariant factors, specific to each country, and time-varying shocks, similar in all countries, we also apply fixed effects estimations (across countries and across years) as separate specifications.

We used different sources to compile data on 196 countries for our variables. To address the problem of causality partially, the data for all the independent variables are for the periods preceding the period of the dependent variable (for example, the index of political instability in 2000 and subsequent economic growth in 2001-2005). Table 5 reports summary statistics. To analyze the relationship between these variables, we run a few regression models. The Breusch Pagan and White tests showed that we have heteroscedasticity, therefore, we use robust standard errors.

Table 5 – Summary statistics of variables (full sample = 196 countries)

VARIABLES	(1) N	(2) Mean	(3) S.D.	(4) Min	(5) Max
GDP per capita % growth (2001-2018)	196	2.306	1.973	-2.492	9.062
GDP per capita % growth (2001-2005)	195	2.864	3.377	-6.839	22.99
GDP per capita % growth (2006-2010)	195	2.581	2.862	-9.093	17.11
GDP per capita % growth (2011-2015)	194	2.070	2.397	-5.376	8.410
All years of democracy (1950-2000)	161	0.149	0.357	0	1
Log GDP per capita (2000)	187	8.944	1.252	6.351	11.59
Log GDP per capita (2005)	189	9.062	1.253	6.386	11.61
Log GDP per capita (2010)	189	9.174	1.206	6.492	11.70
Political instability index (2000)	183	50.08	29.06	0	100
Political instability index (2005)	193	49.09	29.03	0.485	100
Political instability index (2010)	195	48.62	28.60	0.474	99.53
Government effectiveness index (2000)	187	50.24	28.79	0	100
Government effectiveness index (2005)	191	49.39	28.66	0.980	100
Government effectiveness index (2010)	193	49.68	28.65	0.957	100

Source: authors' estimations

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[5] Source: calculated using World Bank data, wdi.world-bank.org

[6] Source: sscnet.ucla.edu/polisci/faculty/treisman

[7] Source: calculated using World Bank data, wdi.worldbank.org

[8] Source: worldbank.org/governance/wgi

[9] Source: worldbank.org/governance/wgi

The empirical results for cross-sectional data, presented in Table 6, demonstrate which factors best explain long-term economic performance (2001-2018). Specifications 1 and 2 show regression results with, respectively, *All years of democracy* and *Log GDP* as explanatory variables. Specification 3 contains both of these variables and the other two variables of our interest – *Political instability* and *Government effectiveness*.

Table 6 – Econometric results on 187 countries, OLS, cross-sectional data

Dependent variable: *GDP per capita % growth (2001-2018)*	(1)	(2)	(3)
All years of democracy 1950-2000	-1.021***		-0.513
	(0.296)		(0.364)
Log GDP 2000		-0.493***	-0.441**
		(0.114)	(0.182)
Political instability 2000			-0.0150*
			(0.00811)
Government effectiveness 2000			0.0166
			(0.0114)
Constant	2.639***	6.713***	6.345***
	(0.174)	(1.086)	(1.385)
Observations	161	187	157
R-squared	0.034	0.097	0.106

Robust standard errors in parentheses, *** $p<0.01$, ** $p<0.05$, * $p<0.1$
Source: authors' own estimations

The two variables – *All years of democracy* and *Log GDP* – have a statistically significant influence on long-term economic growth. A country with a stable democratic regime had on average 1% lower GDP per capita growth for the period 2001-2018, which is consistent with Olson's predictions [1]. However, the statistical significance of '*All years of democracy*' variable disappears when we add more explanatory variables into the model (column 3).

Specification 2 demonstrates that a more developed, more prosperous country (in terms of the level of GDP per capita) had on average lower economic growth for the analyzed period, supporting the macroeconomic convergence hypothesis, and this result is robust after including more variables.

Our multivariate regression (column 3) better fits into the data compared to the univariate regressions with slightly higher R-squared. As expected, the coefficients on all variables, except *Government effectiveness* have negative signs. In addition to *Log GDP*, only *Political instability* is statistically significant but with a low magnitude of effect on economic performance: a one point increase in the Political instability index *ceteris*

paribus leads to a 0.02% decrease in the average long-term GDP per capita growth. Overall, these results support previous empirical findings [18, 19, 31].

Next, we identify potential outliers in our dataset using DFbeta and Cook's distance tests (UAE, Burundi, Eritrea, Ethiopia, Liberia, Myanmar, Niger, and San Marino). Table 7 presents regression models after excluding the outliers with specifications, similar to columns 1-3 of Table 6. As we can see, the results are almost the same, except the coefficient on *Political instability* is not statistically significant anymore.

Table 7 – Econometric results after excluding outliers, OLS, cross-sectional data

Dependent variable: GDP per capita % growth (2001-2018)	(4)	(5)	(6)
All years of democracy 1950-2000	-1.075***		-0.536
	(0.291)		(0.357)
Log GDP 2000		-0.482***	-0.392**
		(0.105)	(0.177)
Political instability 2000			-0.0132
			(0.00817)
Government effectiveness 2000			0.0122
			(0.0112)
Constant	2.693*** (0.164)	6.685*** (1.001)	6.106*** (1.328)
Observations	154	179	150
R-squared	0.046	0.098	0.116

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Source: authors' own estimations

Lastly, we analyze panel data using fixed-effects estimates to see how changes in the level of economic development, political situations, and governance over time affect subsequent medium-term (five-year) economic growth across countries. Table 8 compares the results of simple OLS and fixed effects estimations. Removing the influence of unobserved time-invariant country characteristics and time-varying shocks substantially improves the model in terms of R-squared (specifications 8 and 9 vs specification 7). The macroeconomic convergence hypothesis is still supported, but according to the FE estimations, the level of a country's development has a much higher effect on its economic growth than specifications 2, 3, 5 and 6. An unexpected but interesting result is that the regression coefficient on the *'Political instability'* variable has changed its sign, contradicting our hypothesis and intuition: a more politically unstable country had a higher GDP growth. *Government effectiveness* has a positive relationship with economic performance; however, its coefficient is insignificant both in magnitude and statistically.

Table 8 – Comparison of different linear models, OLS vs. FE, panel data

Dependent variable: GDP per capita % growth for five years after relevant year (2000, 2005 or 2010)	(7) OLS	(8) FE	(9) FE
Log GDP (2000, 2005, and 2010)	-0.251	-6.444***	-9.931***
	(0.186)	(1.263)	(1.679)
Political instability (2000, 2005, and 2010)	-0.0113*	0.000556	0.0209*
	(0.00612)	(0.0130)	(0.0124)
Government effectiveness	-0.00271	-0.00692	0.00699
(2000, 2005, and 2010)	(0.0109)	(0.0195)	(0.0188)
Constant	5.490*** (1.325)	61.14*** (11.23)	89.96*** (14.61)
Observations	546	546	546
R-squared	0.049	0.259	0.336
Number of country	187	187	187
Country FE Year FE		YES	YES YES

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Source: authors' own estimations

Sensitivity analysis

At the time of conducting this research, data on our dependent variable, *Economic growth* for 2019 and 2020, were not available. As of 23 November 2021, the World Bank updated its data on GDP per capita growth (annual %) for 2019 and 2020. However, since 2020 was an unusual year due to the COVID-19 pandemic, we run separate regressions using GDP per capita % growth, on average for the years 2001-2020. It allows us to examine the robustness of our previous results.

Our sensitivity analysis (Tables 9 and 10) shows that our results are robust to including the pandemic year of 2020 into estimations. Thus, despite the unprecedented period of lockdowns in many countries and a consequent fall in world economic activity during the corona crisis, our estimates confirm a statistically significant negative relationship between the level of economic development and long-run economic growth.

Table 9 – Sensitivity of estimates to the pandemic year 2020

Dependent variables:	GDP per capita % growth (2001-2018)			GDP per capita % growth (2001-2020)		
All years of democracy 1950-2000	-1.021*** (0.296)		-0.513 (0.364)	-0.944*** (0.285)		-0.394 (0.351)
Log GDP 2000		-0.493*** (0.114)	-0.441** (0.182)		-0.502*** (0.105)	-0.500*** (0.164)
Political instability 2000			-0.0150* (0.00811)			-0.0127 (0.00786)
Government effectiveness 2000			0.0166 (0.0114)			0.0161 (0.0109)
Constant	2.639*** (0.174)	6.713*** (1.086)	6.345*** (1.385)	2.225*** (0.169)	6.391*** (1.001)	6.362*** (1.247)
Observations	161	187	157	161	187	157
R-squared	0.034	0.097	0.106	0.031	0.109	0.114

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Source: authors' own estimations

Table 10 – Sensitivity of estimates to the pandemic year 2020, after excluding outliers, OLS, cross-sectional data

Dependent variables:	GDP per capita % growth (2001-2018)			GDP per capita % growth (2001-2020)		
All years of democracy 1950-2000	-1.021*** (0.291)		-0.536 (0.357)	-1.021*** (0.280)		-0.338 (0.340)
Log GDP 2000		-0.482*** (0.105)	-0.392** (0.177)		-0.544*** (0.0944)	-0.465*** (0.158)
Political instability 2000			-0.0132 (0.00817)			-0.0113 (0.00782)
Government effectiveness 2000			0.0122 (0.0112)			0.00988 (0.0106)
Constant	2.693*** (0.164)	6.685*** (1.001)	6.106*** (1.328)	2.303*** (0.161)	6.844*** (0.903)	6.371*** (1.176)
Observations	154	179	150	154	179	150
R-squared	0.046	0.098	0.116	0.044	0.134	0.139

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1
Source: authors' own estimations

Conclusion and discussion

The existing literature shows that economic growth and decline are affected by several factors. According to key theoretical frameworks – the theory of interest groups and varieties of capitalism – differences in economic performance among countries are dependent not only on private interests but also on an institutional structure in a country.

We have shown that data for 16 OECD countries partially supported our theoretical predictions. Based on our empirical analysis, we can conclude that the economic slowdown in recent decades in some countries is not directly associated with the capture of the government by powerful interests. However, the sclerotic effect of interest groups on economic progress is conditional on politico-economic as well as macroeconomic settings in the considered countries. In particular, we have found that the existence of institutional coherence (efficiency) makes interest groups more powerful and able to confine economic growth measured in terms of GDP per capita.

Our empirical analysis of 187 countries demonstrated somewhat mixed results. The 'sclerotic effect' on long-term GDP growth is negative, although not statistically strong in all specifications. Therefore, our findings do not fully support the argument that economic decline in some states for the last twenty years was conditioned by the influence of interest groups. The impact of political stability, i.e., the absence of political violence and terrorism, subsists but is not consistent. Surprisingly, our econometric results do not indicate the importance of the effectiveness of state governance and the quality of public policy. At the same time, the most robust result of our analysis is a statistically significant negative relationship between the level of a country's initial economic development and its following medium- (five-year) and long-term (~twenty-year) economic growth.

In general, this study contributes to the existing literature by:

– testing the institutional sclerosis effect for the last two decades;

– estimating the combined effect of interacted variables that explains predictions of both 'interest groups' and 'varieties of capitalism' theories;

– considering various macroeconomic and social factors along with political ones in one multivariate model.

However, our research has two limitations. Firstly, despite using different data periods for our dependent and independent variables, there still might be reverse causality between the dependent and some of the independent variables. For instance, it is likely that the more developed the country, the higher chance there is of it sticking to a democratic path. Secondly, the lack of data constrained us in testing the "institutional coherence" hypothesis from VOC theory as well as limited our ability to find better proxy variables for assessing the interest group hypothesis. Therefore, these issues could be addressed by future research.

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Information about the authors

* Olzhas Zhorayev - Master of Science in Applied Economics, Master of Arts in Public Policy, M. Narikbayev KAZGUU University, Kazakhstan, e-mail: o_zhorayev@kazguu.kz, ORCID ID: https://orcid.org/0000-0002-8972-4552

Haoyue He - Master of Arts in Public Policy, King's College London, United Kingdom, e-mail: haoyue.he@kcl.ac.uk, ORCID ID: https://orcid.org/0000-0002-4047-6391

Авторлар туралы мәліметтер

* Жораев О.Ж. - қолданбалы экономика магистрі, мемлекеттік саясат магистрі, М. Нәрікбаев атындағы КАЗГЮУ университеті, Қазақстан, e-mail: o_zhorayev@kazguu.kz, ORCID ID: https://orcid.org/0000-0002-8972-4552

Хе Х. - Мемлекеттік саясат магистрі, Лондондағы корольдік колледжі, Ұлыбритания, e-mail: haoyue.he@kcl.ac.uk, ORCID ID: https://orcid.org/0000-0002-4047-6391

Сведения об авторах

* Жораев О.Ж. - магистр прикладной экономики, магистр государственной политики, университет КАЗГЮУ им. М. Нарикбаева, Казахстан, e-mail: o_zhorayev@kazguu.kz, ORCID ID: https://orcid.org/0000-0002-8972-4552

Хе Х. - Магистр государственной политики, Королевский колледж Лондона, Великобритания, e-mail: haoyue.he@kcl.ac.uk, ORCID ID: https://orcid.org/0000-0002-4047-6391