

MASTERARBEIT | MASTER'S THESIS

Titel | Title

Divergent development outcomes in oil-rich developing countries
A comparative multi-case study

verfasst von | submitted by

Mátyás Kohán BA BA

angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of
Master of Arts (MA)

Wien | Vienna, 2026

Studienkennzahl lt. Studienblatt |
Degree programme code as it appears on the
student record sheet:

UA 066 589

Studienrichtung lt. Studienblatt | Degree pro-
gramme as it appears on the student record
sheet:

Masterstudium Internationale Entwicklung

Betreut von | Supervisor:

Univ.-Prof. Alejandro Cunat PhD

Abstract (English)

Why do oil-producing countries exposed to the same global commodity markets achieve markedly different development outcomes? This thesis examines development outcomes, as well as the divergent governance structures and policy architectures they have coexisted with, in six hydrocarbon-rich middle-income countries between 1991 and 2025: Azerbaijan, Kazakhstan and Turkmenistan as post-Soviet cases, and Algeria, Angola and Gabon as postcolonial African cases. Drawing on resource curse theory, New Institutional Economics, and state-led development approaches, the study employs a most similar systems design (MSSD) and comparative multi-case methodology to identify policy architectures associated with more favorable outcomes in economic growth, economic diversification and social development. The analysis combines indicators of macroeconomic performance, export diversification and social development with the examination of governance structures, resource revenue management systems and industrial development strategies.

The study finds that diversification and structural upgrading do not necessarily coincide. Several countries diversified exports away from hydrocarbons, but only Kazakhstan developed a sufficiently diversified and upgraded export structure capable of meaningfully cushioning hydrocarbon price volatility. The findings further suggest that strong resource governance alone does not guarantee favorable development outcomes, as countries with comparatively strong resource governance indicators did not necessarily outperform peers in broader development terms. Instead, more favorable outcomes appear to be associated with long-term and countercyclical resource revenue management, sustained investment in human capital, the ability to attract foreign direct investment, and a developmental state role that extends beyond the distribution of resource rents.

The thesis argues that neither resource curse theory, institutional explanations nor state-led development approaches alone adequately explain variation in outcomes among hydrocarbon producers. Rather, development trajectories appear to be shaped by the interaction of resource governance, institutional configurations, human capital policies and state developmental capacity. Given its comparative case-study design, the study does not claim formal causality but generates hypotheses for future research on the political economy of development in resource-rich states.

Abstract (German)

Warum erzielen erdölproduzierende Länder, die denselben globalen Rohstoffmärkten ausgesetzt sind, deutlich unterschiedliche Entwicklungsergebnisse? Diese Arbeit untersucht Entwicklungsergebnisse sowie die unterschiedlichen Governance-Strukturen und politikökonomischen Entwicklungsarchitekturen, mit denen sie koexistierten, in sechs ölreichen Ländern mittleren Einkommens im Zeitraum von 1991 bis 2025: Aserbaidschan, Kasachstan und Turkmenistan als postsowjetische Fälle sowie Algerien, Angola und Gabun als postkoloniale afrikanische Fälle. Aufbauend auf der Theorie des Ressourcenfluchs, der Neuen Institutionenökonomik sowie staatlich gelenkten Entwicklungsansätzen verwendet die Studie ein Most Similar Systems Design (MSSD) und eine vergleichende Mehrfallstudie, um Politikarchitekturen zu identifizieren, die mit erwünschenswerteren Ergebnissen hinsichtlich des Wirtschaftswachstums, der wirtschaftlichen Diversifizierung und der sozialen Entwicklung verbunden sind. Die Analyse kombiniert Indikatoren makroökonomischer Leistung, der Exportdiversifizierung und der sozialen Entwicklung mit einer Untersuchung von Governance-Strukturen, Systemen des Ressourcenrentenmanagements und industriepolitischen Entwicklungsstrategien.

Die Studie kommt zu dem Ergebnis, dass Diversifizierung und strukturelles Upgrading nicht notwendigerweise zusammenfallen. Mehrere Länder diversifizierte ihre Exporte weg von Kohlenwasserstoffen, doch nur Kasachstan entwickelte eine hinreichend diversifizierte und qualitativ aufgewertete Exportstruktur, die in der Lage war, die Volatilität der Kohlenwasserstoffpreise in nennenswertem Maße abzufedern. Die Ergebnisse legen ferner nahe, dass gute Ressourcen-Governance allein keine guten Entwicklungsergebnisse garantiert, da Länder mit vergleichsweise starken Indikatoren der Ressourcen-Governance ihre Vergleichsfälle nicht zwangsläufig auch hinsichtlich umfassenderer Entwicklungsindikatoren übertrafen. Stattdessen scheinen günstigere Ergebnisse mit einem langfristig orientierten und antizyklischen Management von Ressourcenrenten, nachhaltigen Investitionen in Humankapital, der Fähigkeit zur Anziehung ausländischer Direktinvestitionen sowie einer entwicklungsorientierten Rolle des Staates verbunden zu sein, die über die bloße Verteilung von Ressourcenrenten hinausgeht.

Die Arbeit beteuert, dass weder die Theorie des Ressourcenfluchs noch institutionelle Erklärungsansätze oder Theorien staatlich gelenkter Entwicklung an sich die Unterschiede in den Entwicklungsergebnissen von Kohlenwasserstoffproduzenten hinreichend erklären können. Vielmehr scheinen Entwicklungspfade durch das Zusammenspiel von Ressourcen-Governance, institutionellen Konfigurationen, Humankapitalpolitik und staatlicher Entwicklungskapazität geprägt zu werden. Aufgrund ihres vergleichenden Fallstudiendesigns erhebt die Studie keinen Anspruch auf den Nachweis formaler Kausalität, sondern formuliert Hypothesen für zukünftige Forschung zur politischen Ökonomie der Entwicklung ressourcenreicher Staaten.

1. Introduction

If oil producers are exposed to broadly similar global commodity cycles and work as cogs in one of the most standardized global production networks, why do their development outcomes differ so sharply? And what were the policies that those who attained the best outcomes used? This is the fundamental question this present work sets out to answer.

This question, however, is as complicated as it looks simple because both ‘development’ and ‘a country’ are large and multifaceted objects of study. While many theories exist and much empirical research has been done, causal connections between policies and development outcomes are difficult to establish because development trajectories sit at the confluence of a range of endogenous and exogenous factors, intended or accidental effects of political decisions and systems, and mere drift in the face of global events.

The key strands of theory at work on this issue – resource curse theory, New Institutional Economics, and state-led development approaches like the Beijing Consensus or petro-developmental state theory – explain a lot but also too little. Resource curse theory, one of the theoretical keystones of this work, deals with the reasons why and the circumstances under which oil wealth is risky. But it does not by itself explain the divergences between development outcomes in oil-producing countries in a broader sense: why does Gabon get high scores for the revenue management aspect of resource governance yet post weak outcomes, and why can Turkmenistan provide basic public services while maintaining an essentially unreformed economy? What explains the world of difference between the outcomes of post-war Angola and post-Soviet Kazakhstan? One of the answers of resource curse theory, and the key answer of New Institutional Economics to all of those questions reads ‘institutional quality’ – but institutional quality is not one thing but a range of different aspects from the governance model and fiscal capacity to resource governance and human capital policy, or the capacity to deliver public goods. Which institutions matter most? And in the context of state-led development, what kind of state intervention, directed toward which sectors, pays off in terms of development outcomes?

This comparative multi-case study spans the development of six middle-income oil-producing countries – three post-Soviet: Azerbaijan, Kazakhstan, Turkmenistan; three postcolonial: Algeria, Angola, Gabon – over the time period from 1991 to 2025, in an attempt to

generate hypotheses in response to its central research question. Its design draws on a research gap identified by the resource curse literature itself: it employs most similar systems design (MSSD) to compare systems in two historically meaningful country groups that are as similar as possible in terms of as many aspects as possible, with the goal of formulating credible cross-group and intra-group hypotheses to its research questions – but falling short of establishing formal causality.

Chapter 2 explores the three theoretical keystones of this present study: the theory of the resource curse, including the hitherto identified symptoms, causes and remedies thereof; the Acemoglu-Johnson-Robinson (AJR) approach to New Institutional Economics; and state-led development approaches, especially the Beijing Consensus and Jesse Salah Ovidia's petro-developmental state theory.

Chapter 3 delves into the selection criteria for the sample and briefly presents the six selected countries. It further introduces the indicators used to trace outcomes in economic development, economic diversification, and social development. Chapter 4 summarizes, details and systematizes these outcomes.

Chapter 5 is the heart of this study: it details the policy architectures that were at work in the countries of this study during the period of interest – both the measurable aspects thereof and the conditions in which these countries found themselves at the beginning of the 1990s, the governance choices they made, the way they managed their resource revenues, and the approaches they took in terms of industrial and diversification strategy. This allows for the drawing of conclusions on the policy architectures associated with more favorable development outcomes in Chapter 6, as well as for taking stock of theoretical implications.

The appendices provide the data tables and visualizations used to ensure the traceability of the empirical analysis.

2. Theoretical framework

This study is a work on development economics as it impacts a clearly defined locus: oil-rich developing countries. Specifically, it deals with countries in which the petroleum industry represents a large enough segment of the national economy to be a major factor in the country's economic life, but not an absolute majority thereof. A serious inquiry into this

sample – as described and justified in more detail in chapter 3 on methodology – requires a theoretical framework composed of both 1) theoretical approaches directly relevant to resource-rich (or, in a narrower sense, oil-rich) economies, and 2) general theoretical approaches of development economics.

Consequently, this theoretical framework consists of three keystones: various manifestations of resource curse theory; New Institutional Economics (NIE) as exemplified by the work of Daron Acemoglu, Simon Johnson and James A. Robinson; and models of state-led development, especially Beijing Consensus approaches and Jesse Salah Ovadia’s petro-developmental state. These three interlinked theoretical keystones are explained at length presently.

2.1. Resource curse theory

The umbrella term ‘resource curse theory’ denotes a lively field of quantitative research comprised of various theses on the nexus between resource abundance and economic growth. Its genesis dates to the late 20th century; a brief and by no means complete review of its origins is now in order.

Surveys of resource curse literature, like the one conducted in 2023 by Marwan Alssadek and James Benhin (Alssadek, Benhin 2023: 2), usually begin with Alan H. Gelb’s seminal 1988 monograph, *Oil Windfalls: Blessing or Curse*, which is a statistical work that shows a deterioration in the effectiveness of domestic investment during periods of booming oil prices in oil-rich economies (Gelb 1988). It is important to note, however, that a key concept used by resource curse theory thereafter, the so-called ‘Dutch disease’, a mechanism that crowds out the non-extractive tradables sectors in resource-rich economies, was already introduced some years prior by W. Max Corden and J. Peter Neary (Corden, Neary 1982). Similarly, a notion that predates resource curse theory but wound up as one of its important concepts is the ‘rentier state,’ introduced by Hazem Beblawi in 1987 (Beblawi 1987).

The earliest and most general form of resource curse theory was formulated by Jeffrey M. Sachs and Andrew M. Warner in 1995; it stipulates that “[o]n average, countries with a high value of resource-based exports to GDP tend to have a lower growth rate” (Sachs, Warner 1995: 2). Within the bounds of social sciences, it was this basic thesis that has been evaluated, corroborated, disproved, qualified, detailed and expounded on in the vast body of resource

course scholarship that has been accumulated since the turn of the millennium. This body of scholarship consists mainly of statistical analyses aiming to establish formal causality between resource abundance and some symptoms of the resource curse. The resource curse thesis has been examined so thoroughly by so many researchers that it is impossible to list all pertinent works here. For a good overview of the most relevant papers, I refer again to Alssadek and Benhin's recent literature survey (Alssadek, Benhin 2023: 3-15). Many of these works will be drawn upon in the remainder of this subchapter.

One more general point needs to be made on resource curse theory. Resource curse theory is a fundamentally quantitative approach: it measures formal causality between a quantifiable independent variable (usually some proxy for natural resource abundance or dependence) and various quantifiable dependent variables (economic growth, fiscal capacity, institutional quality, corruption, welfare spending etc.). The overwhelming majority of research conducted in this field fits this scheme. Yet, there is significant critical reflection within the field on the limits of statistical analysis in establishing causal links. Distinguished resource curse scholars like Michael L. Ross, for example, warn that “[w]hen investigating causal mechanisms empirically, even the best statistical analysis can only take us so far”, especially when observing units of analysis “as large and opaque as a country” (Ross 2012: 24). Others like Kristopher W. Ramsay point to potential fallacies that might lead resource curse researchers to establish distorted causal links, like the difficulty in determining whether “changes in resource income produce changes in political institutions” or “shifts in governments’ policies explain variations in resource revenues” (Ramsay 2011: 507). Ross also mentions two more fallacies that might lead researchers astray when establishing causality: the ‘Beverly Hillbillies fallacy’, which means that oil wealth catapults oil-rich countries into “a new peer group of middle- and high-income states, whose institutions have developed over many years”, possibly leading researchers to conclude that oil wealth causes institutional deficiencies; and the ‘fallacy of unobserved burdens’, which may make researchers deem governments of oil-rich countries institutionally weak due to their poor handling of resource revenues, when in reality “perhaps they already have normal institutions, but need exceptionally strong ones” to handle the exceptional burden of resource revenue volatility (Ross 2012: 212-215). Ramsay also mentions that no matter how carefully one picks their variables and control variables for

quantitative analysis, “it is not possible to control for unmeasurable or unmeasured covariates that affect political institution” (Ramsay 2011: 508).

All of the above is to say that resource curse theory is a field of quantitative research that is wrestling with the notion of causality. This thesis, which is essentially a contribution to that field of research, is not free of the causality-related challenges that trouble the entire field. At the same time, the phenomenon that resource curse theory tries to explain is real and obvious. As Farouk Al-Kasim et al. point out, the wildly divergent development outcomes of oil-producing countries “underline that human practices and relations have a decisive impact on the welfare gains derived from oil production” (Al-Kasim et al. 2013: 137). There are causal links between oil wealth, the way countries deal with this wealth, and these countries’ development outcomes; and resource curse theory offers a toolkit, however imperfect, to trace this causality. One possible way out of resource curse theory’s causality problem could be the comparative analysis of case studies, used by Ross to complement statistical analysis (Ross 2012: 24) and suggested by Alssadek and Benhin as a way to control for exogenous variables and arrive at more precise findings (Alssadek, Benhin 2023: 13). This paper, which examines a total of six case studies across two regions to control for the hard-to-measure impact of geography and history on development outcomes in oil-rich developing countries, follows their approach in trying to overcome the causality challenge inherent in resource curse theory. Jonathan Isham et al. identified the impact of history on countries’ institutions as a “weak link in determining the chain of causation” (Isham et al. 2005: 151). It follows that a case-study method that compares countries with similar historical trajectories improves a researcher’s chances to accurately trace causal links between resource abundance and development outcomes.

2.1.1. Symptoms of the resource curse

Some authors, including Ross, describe the resource curse as a holistic phenomenon. Ross holds that “since 1980, good geology has led to bad politics”, with oil states more likely to be autocracies, have civil wars, suffer from financial volatility, and sport a poor women’s rights record (Ross 2012: 1-2). Another holistic resource curse theory, Thad Dunning’s concept of the resource-democracy nexus, distinguishes between resource-abundant countries in which resource revenues represent a low share of total government revenue and those in

which they represent a high share thereof, with the latter classified as ‘rentier states’; rentier states, then, might be resource-dependent, e.g. characterized by a high resource-to-GDP ratio, or not resource-dependent, e.g. characterized by a low resource-to-GDP ratio. The degree of resource dependence, combined with some institutional characteristics of the private sector in oil-producing countries, determines whether the country’s development outcomes suffer from negative ‘authoritarian effects of resources’ or positive ‘democratic effects of resources’ (Dunning 2008: 19).

Most authors, however, concentrate on one or a few symptoms of the resource curse. A survey of the symptoms discussed by resource curse theorists is now in order.

2.1.1.1. Dutch disease

The concept of the ‘Dutch disease’ predates that of the resource curse but has since become a core element of resource curse theory. Corden and Neary introduced it as a phenomenon that impacts non-extractive sectors in small economies in the case of an extractive-sector boom. Dutch disease, as defined by Corden and Neary, is a combination of two concomitant processes. A boom in the extractive sector sets in motion the ‘resource movement effect’, which “raises the marginal products of the mobile factors employed there and so draws resources out of other sectors”, leading to one set of adjustments in the national economy, with another set of adjustments arising as the consequence of the ‘spending effect’: “higher real income resulting from the boom leads to extra spending on services which raises their price (i.e. causes a real appreciation)” (Corden, Neary 1982: 827). The causal mechanism implicit in Corden and Neary’s original Dutch disease thesis, then, could be summarized as follows:

- 1) During a resource boom, the extractive sector produces a windfall of export revenues in foreign currency. The real exchange rate thus appreciates.
- 2) The abundance of (foreign currency) revenue allows the extractive sector to offer more attractive salaries, putting it at an advantage against all other sectors in competing for labor, leaving all other sectors labor strapped.
- 3) The non-tradables segment of the services sector adjusts by raising wages to compete with the extractive sector, and by raising prices, which it can do as the demand for

non-tradables is both captive and price elastic. The former is a universal characteristic of demand for non-tradables, the latter is due to abundant foreign currency revenues.

- 4) Real exchange rate appreciation prevents the manufacturing sector from adjusting its prices and thereby its wages, as the demand for tradable manufactured goods is not captive: real exchange rate appreciation incentivizes imports. The manufacturing sector becomes uncompetitive for labor (or for demand, if it does raise wages) and adjusts by shrinking.

Corden and Neary's Dutch disease model is not all-encompassing. It doesn't factor in, for example, the flipside of resource revenue volatility (resource busts) and other complexities of a national economy that might interfere with the two Dutch disease effects. Yet, this is the model that forms the basis of later conceptualizations of the Dutch disease within resource curse theory.

Sachs and Warner, for example, make a point similar to that of Corden and Neary when they state that "the greater the natural resource endowment, the higher is the demand for non-tradeable goods, and consequently, the smaller will be the allocation of labor and capital to the manufacturing sector", leading to the expansion of the non-tradables sector and the shrinkage of the manufacturing sector (Sachs, Warner 1995: 6). They do, however, note that under the conditions of the neoclassical model of the market, this automatic reallocation of the factors of production should not in and of itself lead to slower growth and thus deserve to be termed a 'disease' – unless there is "something special about the sources of growth in manufacturing", something that makes a higher share of manufacturing conducive to faster overall growth, an idea they think "remains speculative and unproven" (Sachs, Warner 1995: 6). On this matter, Sachs and Warner fail to observe the logical corollary of this point: it is also possible that it is not a higher share of manufacturing that leads to faster overall growth, but the higher share of the natural resource sector that leads to slower overall growth. This point – that the nature of natural resource revenues is such that they often fail to translate into economic growth – has since been taken up by many scholars of resource curse theory and will be dealt with in this paper as well.

One important addition to Corden and Neary's Dutch disease model was made by Ricardo Hausmann and Roberto Rigobon, who argue that the 'disease' is not the mechanism

described by Corden and Neary in and of itself. As Sachs and Warner correctly point out, this mechanism describes a perfectly normal efficiency-maximizing adjustment of the economy as foreseen under the neoclassical model of the market. Rather, the ‘disease’ is that Corden and Neary’s mechanism pushes resource-rich economies toward a structure that is more exposed to the volatility of resource revenues. Hausmann and Rigobon claim that the specialization of the economy in natural resources might appear efficiency-maximizing during a resource boom, but instantly become inefficient during a resource bust, leading to slower growth over a longer period of time. They add that once the specialization happens, “financial frictions interact with this volatility, further specializing the economy as the stock of capital will respond to greater macroeconomic volatility” (Hausmann, Rigobon 2003: 35).

As regards the empirical basis of the Dutch disease, Alssadek and Benhin show on a sample of 36 oil-rich countries that Corden and Neary’s mechanism does indeed work, appreciating the real exchange rate and diminishing outputs not just in manufacturing, but also in agriculture and services. They do, however, observe regional variation, with the Dutch disease impacting oil-rich countries in the MENA, Latin America and Sub-Saharan Africa as expected, but not applying as expected to Asia and North America (Alssadek, Benhin 2021: 2). This latter observation proves two points: that region-level analysis could yield important discoveries in the context of resource curse theory, and that policy matters, as some countries were clearly able to mitigate the effects of the Dutch disease mechanism better than others.

2.1.1.2. Fiscal resource curse, rentier state and excessive government

In his 1987 anthology, Beblawi defined the ‘rentier state’ as exhibiting the following four traits: 1) It has an economy in which “rent situations predominate”; 2) it relies on substantial external rent, which allows it to sustain its economy “without the existence of a vigorous domestic productive sector”; 3) it employs few of its citizens in rent generation and involves most in its distribution or use; 4) the government is the “principal recipient of the external rent in the economy”. He adds that rentier states foster ‘rentier mentality’, in which “[r]eward – income or wealth – is not related to work and risk bearing, rather to chance or situation” (Beblawi 1987: 51-52).

Resource curse theory has adapted Beblawi’s rentier state model into the notion of the ‘fiscal resource curse’, the gist of which is that oil wealth creates large governments that are at

the same time inept at collecting taxes. Ross points out that countries with significant oil income (defined as at least a hundred constant 2000 US dollars per capita per year) have, on average, 45 percent larger governments than those that earn less oil income (Ross 2012: 29). Although no universally valid causal link can be established, it should be noted that the size of government (government expenditure as a share of GDP) is a metric of the freedom or dynamism of the private sector as well. Assuming that the state allocates resources less efficiently than the market could, excessive state control of the economy may lead to inefficient allocation and thus suboptimal growth or welfare outcomes. Excessive government can therefore be thought of as a resource curse symptom in and of itself.

Compounding this aspect of the fiscal resource curse is that the – on average, rather large – states in oil-producing countries collect little taxes. Ross shows that oil-producing countries are about 30 percent less dependent on taxes than countries that don't produce oil (Ross 2012: 31). Resource curse theory explains this from a political perspective: Temitope J. Laniran and Damilola Adeleke point out that “increasing resource rents provides higher incentives for leaders to remain in power, through a deliberate refusal to improve taxation capacity”, mitigating both the tax burden on their citizens and citizens' demand for the accountable use of public funds (Laniran, Adeleke 2024: 511-512). Tania Masi et al. assert that the fiscal resource curse, however, is conditional: it only emerges in countries endowed with point-source natural resources, not in ones with diffuse resources – and it can be neutralized by political institutions that provide adequate control of executive power (Masi et al. 2024: 10).

Even though resource revenue can be used to finance the state just as well as tax revenue, there are two aspects to the lack of fiscal revenues that make the fiscal resource curse a 'curse'. One is that resource revenues don't accrue to the state from its citizens and thus don't create the sense of citizen entitlement and ownership that makes societies conscious about the quality of their public services and eager to see public funds used effectively. Laniran and Adeleke show that countries that don't tax adequately are “plagued by inadequate provision of public goods” (Laniran, Adeleke 2024: 512). This is even more so in case the stream of resource revenue abates, e.g. during a resource bust. Governments that don't tax don't have a reason to develop the capacity to tax, which deprives them of a valuable tool for economic adjustment in case resource revenue volatility strikes. Thus, low fiscal capacity makes oil producers even

more prone to the inadequate provision of public goods during periods of low oil prices, which weakens their overall development prospects.

2.1.1.3. Political resource curse

A phenomenon less directly related to economic growth but thoroughly examined by resource curse theory is the ‘political resource curse,’ the notion that oil wealth leads to authoritarian tendencies. Part of this concept arguably rests on the Eurocentric normative assumption that liberal democracy in the Western tradition is superior to every other form of government for a variety of moral reasons and that authoritarianism is thus *ab ovo* undesirable. Although this anomaly deprives the political resource curse from the quantitative clout of other resource curse symptoms, this dimension of resource curse theory is still relevant to the extent that the form of government influences development (economic, welfare, etc.) outcomes.

The idea that oil wealth might impact forms of government occurred already to rentier state theorists like Giacomo Luciani in the late 1980s. Luciani devised some political tenets specific to rentier states, such as the notion that unequal distribution of oil rents in rentier states is not a sufficiently strong driver of coalitions for political change or democratization; rather, it sparks individual strategies of “manoeuvring for personal advantage within the existing setup” (Luciani 1987: 74). Luciani posits that substantial opposition to the rulers of such states only develops if “an allocation state fails, or is widely believed to fail, to take full advantage of the possibility of receiving income from the rest of the world” (Luciani 1987: 75).

Ross’ ‘fiscal theory of democracy’ is a similar concept within the bounds of resource curse theory. His theory suggests that there is a structural condition that puts authoritarian rulers at an advantage in oil-producing countries. In Ross’ view, the key criterion of whether a ruler remains in power is whether “citizens believe that their governments are delivering a lot of benefits relative to their revenues.” This applies to democratic and authoritarian rules alike, irrespective of their country’s status as an oil producer (Ross 2012: 71). In this context, the authoritarians’ advantage in oil-producing countries is that oil revenues can be handled intransparently, so that citizens won’t know how large the government revenue is that they measure their benefits against. It is only in the case of increased oil revenue transparency that significant opposition develops, as citizens realize how much of it gets squandered on expenses that bring little benefit to them; but even then, authoritarian rulers of oil-producing

countries are better positioned than their counterparts elsewhere as oil revenues allow them to increase the loyalty of the military that may see them through a popular revolution (Ross 2012: 71).

Rabah Arezki and Markus Brückner's quantitative study partly substantiates the political resource curse. They find that increases in oil rents significantly increase corruption and deteriorate political rights, but also significantly improve civil liberties. They explain this apparent contradiction arguing that the extension of civil liberties presents a way to quell popular discontent without risking the loss of control over oil rents that the political empowerment of the population could entail (Arezki, Brückner 2011: 956).

Within resource curse theory, some research has been conducted into whether oil-producing countries' authoritarian tendencies are *eo ipso* conducive to poor growth performance. This is where research into the economic impact of oil wealth intersects with the larger discussion of the nexus between democracy and development. To accurately contextualize results of resource curse research, findings of this body of research will be examined in subchapter 2.2.1. on the connections between resource curse theory and New Institutional Economics.

2.1.2. Causes of the resource curse

As mentioned above, causality is one of the key challenges of resource curse theory. The abundance of research into the resource curse has provided substantial insights into the possible causal mechanisms behind the symptoms described in the previous subchapter. Most of these causal mechanisms have been discerned using statistical methods that are capable of establishing formal causality. Yet, it is a testament to the shortcomings of formal causality in the context of the resource curse that there is no widespread agreement about what the decisive factor in bringing about the resource curse is. Presented below are the main causes as discerned by the most authoritative resource curse scholars.

2.1.2.1. The nature of oil revenues

Ross argues that the resource curse is inherent in the nature of oil revenues; specifically, in four distinctive qualities thereof: "their scale, source, stability, and secrecy" (Ross 2012: 5). He posits that the massive scale of oil revenues makes governments in oil-producing countries

large; their source (that is, their non-tax nature) makes governments less prone to public pressure and thereby less democratic; their lack of stability leads to ineffective overspending during booms and financial crises during busts; and their secrecy breeds corruption (Ross 2012: 5-6). The four causal mechanisms Ross attaches to the four qualities of oil revenues are not unique to him, many scholars have made similar points. The crucial moment in his theory is that he sees the root cause of the resource curse in the resource revenues themselves. He considers inefficiencies of government in oil-producing countries that are, for many resource curse researchers, the causes of the curse, *effects* stemming from the qualities of resource revenues.

Ross' explanation of the causes of the resource curse allows for the conclusion that the resource curse occurs rather naturally but is still conditional. If Ross' resource curse model is to be given credit, then the curse can be remedied using 1) stabilization mechanisms, e.g. wealth funds; 2) fiscal capacity development; 3) measures that improve the transparency of oil revenues.

2.1.2.2. Institutional quality

Among researchers who, unlike Ross, do not believe the resource curse to be inherent in the nature of oil revenues, poor institutional quality is one of the most widespread explanations of the resource curse. It should be noted that resource curse theory and the Acemoglu-Johnson-Robinson approach intersect at this point; further exploration of this interplay will be conducted in subchapter 2.2.1.

The seminal study in regard to the institutional causes of the resource curse was carried out by Halvor Mehlum et al. in 2006. They distinguish between 'producer-friendly institutions,' "where rent-seeking and production are complementary activities," and 'grabber-friendly institutions,' "where rent-seeking and production are competing activities" (Mehlum et al. 2006: 3). The essence of the Mehlum et al. thesis on institutions is that under the condition of "a weak rule of law, malfunctioning bureaucracy, and corruption", entrepreneurs are incentivized to specialize in unproductive activities aimed at appropriating some of the resource rent, while a producer-friendly set of institutions incentivizes entrepreneurs to engage in productive entrepreneurial behavior that then produces growth for the economy (Mehlum et al. 2006: 3). On the basis of this argument, Mehlum et al. provide a new definition of the

resource curse: they define it as a “dangerous mix of weak institutions and resource abundance” (Mehlum et al. 2006: 16).

Commodity frontier theory offers another perspective on the role of poor institutional quality in causing the resource curse. Commodity frontier theory deals with the tendency of global capitalism to incorporate into its system of production peripheral spaces that were hitherto noncommodified, known as ‘external commodity frontiers’; or intensifying the incorporation of peripheral spaces that are already commodified, known as ‘internal commodity frontiers’ (Langthaler 2021: 125). Ross applies a commodity-frontier framework to state that since the turn of the millennium, booming oil prices have transformed much of the developing world into external oil frontiers. Dozens of less-developed countries, he states, became oil producers as “companies found that the risks of working in poor, remote, and often badly governed countries were increasingly outweighed by the benefits of finding new reserves” (Ross 2012: 10). This thesis contrasts slightly with the Mehlum et al. approach as it implies a slightly amended chain of causality. The Ross approach means that it is not the combination of grabber-friendly institutions and resource abundance that creates the resource curse; it is, in fact, the rise of oil prices that expands the oil frontier into countries plagued by weak institutions, subjecting them to the resource curse.

It is important to note a missing causal link. Neither Mehlum et al. nor Ross explicitly state that oil production creates weak institutions, although Ross’ causal mechanisms that stem from the nature of oil revenues does not exclude such a conclusion. Although they both deal with institutional quality as a factor of development outcomes, a key difference between resource curse theory and NIE is that resource curse theory does not provide specific explanations of how weak institutions arise.

Considering institutional quality as a major determinant of resource curse outcomes implies that the resource curse is conditional and can be remedied by gearing the institutional framework towards producer-friendliness.

2.1.2.3. Weak control of international oil corporations

International oil corporations (IOCs) are a key factor in the oil production process in developing countries as they provide the technical expertise necessary for extracting, processing and marketing hydrocarbon resources. The necessary technology and the capital to finance

its deployment is often not present in developing countries, which provides IOCs with leverage over the oil production process and the distribution of oil rents. This role of IOCs has led some researchers to believe that countries which control and regulate them inadequately lose growth to these companies.

The most basic of such arguments is provided by Dawda Adams et al. who posit that oil and gas sector IOCs “use their competitive advantage to seek excessive rents” and “influence the market actors to gain and reassert their market position at the expense of CSR obligations”, with this “rent-seeking behavior and long-term license lobbying” being one of the causes of the resource curse (Adams et al. 2019: 134). Ross offers a similar assessment, but adds that the most important IOC practice that put governments at a disadvantage, which was IOCs refusing to bid against each other for licenses and thereby coercing governments into signing unfavorable contracts, was mostly a feature of the postwar period and changed around the 1960s and 1970s (Ross 2012: 36).

While Adams et al. and Ross all but shift the responsibility for part of the resource curse on corporate greed, Al-Kasim et al. describe a similar phenomenon but point to suboptimal regulatory environments (essentially, poor institutional quality) as its root cause. They argue that corruption or incompetence on the government’s part or loopholes in the regulatory framework allows IOCs “deviation from optimal depletion of a resource” (Al-Kasim et al. 2013: 141). ‘Optimal depletion’ is used in this context to describe a set of decisions in the realm of exploration, planning, depletion and technology that allows for the country to retrieve and utilize as much as possible of its oil resources in the longer term, which is the optimal outcome for the country. A deviation from ‘optimal depletion’ should be understood as decisions that allow IOCs to ramp up production early on and minimize production costs to recoup their initial investment and generate profits as quickly as possible, at the expense of the longer-term viability of the countries’ oil production.

As Al-Kasim et al. have raised the issue of corruption in the context of weak control of IOCs, it seems appropriate to discuss the otherwise highly vague phenomenon of corruption in this subchapter. Al-Kasim et al. posit that three kinds of corruption are especially relevant in the context of IOC regulation as a potential contributor to the resource curse: 1) awarding better licensing conditions in exchange for a bribe; 2) granting access to oil fields in exchange for a bribe; 3) collusion between the company and the regulatory authority to share the profits

of weak regulation; all three forms of corruption might occur at the regulatory or the political level (Al-Kasim et al. 2013: 143). As regards these and other forms of corruption, Ivar Kolstad et al. make the point that “many of the corruption issues faced by oil-rich countries are the same as those of other developing countries, but their incidence and impact may be heightened by the presence of large resource rents” (Kolstad et al. 2009: 957). In other words: although some forms of corruption are detrimental to development in any context, the same forms of corruption might take even more of a toll on development in oil-rich countries than elsewhere.

Research conducted by James Ferguson also seems to corroborate the idea that at least part of the resource curse is attributable to IOC decisions. Ferguson argues that, especially in Africa, global capitalism revived the French colonial concept of ‘l’Afrique utile’ and ‘l’Afrique inutile’ (‘usable’ and ‘unusable’ Africa): IOCs have created “mineral-rich enclaves that are starkly disconnected from their national societies”, which has allowed “countries with raging civil wars and spectacularly illiberal governments”, deemed “most risky” in terms of their investment climate by the OECD, to “be surprisingly strong performers in the area of economic growth” and attract foreign capital (Ferguson 2005: 380). In Ferguson’s view, thus, IOCs have purposely sought out poorly governed countries as investment sites for oil production projects, as weak governance has allowed them to extract value from insular oil production sites without the costly corporate social responsibility (CSR) duties levied on them by better-governed countries.

Those who perceive weak control of IOCs as one of the causes of the resource curse thus essentially argue that some of the growth that is missing from oil-rich developing countries can be found on the balance sheets of international oil corporations; the growth of oil-producing economies has morphed into the growth of private companies. This thesis, again, implies a conditional resource curse that can be mitigated by the expansion of governmental capabilities to regulate IOCs so that they provide optimal results not for themselves but for their host countries.

2.1.2.4. Certain forms of democracy and autocracy

The nexus between democracy and development is, again, a topic that will be explored further in the context of NIE, leaving only a couple of points to be discussed in the resource curse context.

It should be remembered that within Ross' framework, authoritarian forms of government arise as a function of the nature of oil revenues. There are, however, resource curse scholars who consider autocracy as a cause and not as an effect of the resource curse. Chief among them is Benn Eifert et al., who divide oil-exporting countries into five groups based on the traits of their political economy: they are either democracies, bisected into 'mature' or 'factional' types, or autocracies, which are either 'paternalistic', 'reformist', or 'predatory' (Eifert et al. 2003: 89). Eifert et al. see optimal development outcomes as only achievable either in mature democracies or reformist autocracies, where savings are likely, stabilization mechanisms work, and rents are put to development-relevant use through public services, direct transfers or state investment. The resource curse is, according to Eifert et al., inherent in the other three types of political economy: savings, stabilization and inclusive rent distribution are hard to achieve in factional democracies; paternalistic autocracies also have mixed success with stabilization, are prone to a lack of economic diversification and often spend rents unsustainably; with predatory autocracies representing a framework in which savings are almost non-existent, expenditure is extremely procyclical, and rent is extracted exclusively by elites through corruption and patronage, with capital flight exacerbating poor development outcomes (Eifert et al. 2003: 89).

Eifert et al.'s classification suggests that the resource curse is conditional and can be remedied by political (as opposed to policy) means: by switching to a form of political economy that is conducive to more positive development outcomes.

2.1.2.5. Point-source resources

The crucial study that established the geographical distribution of natural resources as a resource curse factor was that of Isham et al. conducted in 2005. Isham et al. claim that a resource that is 'point-source', as in "easily extracted from a few easily controlled sources", allows the state to 1) rely less on taxation and thereby defuse citizens' wish for transparency; 2) buy off dissenters directly, through benefits, patronage, or infrastructure projects; and 3) finance mechanisms of repression (Isham et al. 2005: 147). This thesis evokes Ross' 'fiscal

theory of democracy' but puts a different factor, the point-source nature of oil revenues, at the beginning of the chain of causation that ultimately produces the resource curse. Isham et al. also claim that point-source natural resources are detrimental to industrialization and modernization as in countries that possess such resources, "budget revenues are derived from a small workforce that deploys sophisticated technical skills that can be acquired only abroad", reducing economic incentives to modernize through "urbanization, education, and occupational specialization" (Isham et al. 2005: 148). They also claim that apart from the direct negative consequences of dependence on point-source resources, there are also secondary effects: the "heightened social divisions" and "weakened institutional capacity" caused by point-source resources also "impedes [countries'] ability to respond effectively to shocks, which previous studies have shown to be essential for sustaining rising levels of prosperity" (Isham et al. 2005: 150).

The unique trait of Isham et al.'s work is that they show that diffuse natural resources do not cause similarly sluggish economic growth as point-source resources do (Isham et al. 2005: 144). The Isham et al. study suggests that the resource curse is more of a natural function of an exogenous condition (point-source natural resources) and less of a conditional phenomenon. The avenues towards combatting the resource curse seem to be, as evident from Isham et al.'s research, political – and blocked by the very political mechanisms that dependence on point-source natural resources seems to set in motion.

2.1.2.6. Volatility

The aspect of volatility was already broached in subchapter 2.1.1.1. on the Dutch disease, as that key symptom of the resource curse arises as a result of an oil price boom. Booms constitute, however, only one part of the story; the other key part is that there are also oil price busts. The relevant phenomenon in the context of the resource curse is, thus, not boom or bust, but revenue volatility.

Mohsen Mehrara defines oil price volatility as one of the key causes of the resource curse: during oil booms, oil revenue finances investment "so that the effect of oil revenues could be positive until a certain level", at which "the effect turns to be negative, fueling unsustainable consumption booms" as well as bringing about the Dutch disease (Mehrara 2009: 1166). However, during busts, low or negative growth in the oil industry pulls oil-dependent economies

down along with them, increasing the risk of cancelled investment projects, import restrictions, and constrained access to capital (Mehra 2009: 1166). On this latter point, Jeffrey M. Davis et al. note that “[i]nternational lending to developing countries and primary commodity producers with heavy reliance on volatile resources [...] tends to be procyclical”, which means that capital is the most expensive for oil-rich developing countries when it is most needed (Davis et al. 2003: 279).

Volatility, thus, creates conditions in which revenues – sources of growth – hit oil-rich economies in a concentrated manner during revenue booms, leading to unsustainable consumption, ineffective investment, and Dutch disease. Some of the growth potential is thus squandered. Then, during busts, revenues – sources of growth – dry up and the cost of international borrowing increases, leaving oil-rich countries unable to counteract the corollary economic contraction. This, combined, is a natural recipe for slow economic growth over time. The effects of volatility, however, can be minimized using stabilization mechanisms that set revenue aside during booms to cushion the effects of busts.

2.1.2.7. Nationalization of oil companies

The last major possible cause of the resource curse is, again, proposed by Ross. He argues that the four special traits of oil revenues – scale, source, stability, secrecy –, described in more detail in subchapter 2.1.2.1., only started to impact the development of countries after a wave of oil industry nationalizations in the 1960s and 1970s throughout the developing world (Ross 2012: 7). Until then, the special qualities of oil revenues impacted the development of companies, not countries, with the major factor impacting country-level development being the collusion of IOCs to secure arrangements that were beneficial to them but detrimental to host countries (Ross 2012: 7). Ross argues that under contracts in the pre-nationalization era, “while companies gained most of the benefits from oil extraction, they also incurred most of the risks, including that of price fluctuations” as described in subchapter 2.1.2.6. on volatility; nationalizations “largely reversed” these terms, with governments receiving most of the benefits but also running most of the risks (Ross 2012: 57).

Similarly, Pauline Jones Luong and Erika Weinthal contend that ownership and control of oil resources determine the quality of institutions – especially that of fiscal regimes –, and by that token development outcomes as well (Jones Luong, Weinthal 2010: 4). They establish

that four possible ownership models exist, each of which create path dependencies for the development of countries choosing them: state ownership with control (which Jones Luong and Weinthal, concurring with Ross, consider the politically most expedient but least augurious option), state ownership without control, private domestic ownership and private foreign ownership (Jones Luong, Weinthal 2010: 7).

If one considers oil industry nationalization a key cause of the resource curse, the curse again appears conditional, this time on oil industry ownership. Privatization of the oil industry appears as the obvious remedy, although Ross' line of argumentation implies that this would at best change the symptoms of the resource curse, not mitigate them. This is because, as described in subchapter 2.1.2.3., weak control and regulation of IOCs has also already been identified as one of the possible causes of the resource curse.

2.1.3. Policy recommendations advanced by resource curse theory

Resource curse theory is a field of research that goes beyond describing its crucial problem and tries to solve it as well. Some researchers, like Isham et al., admit that the resource curse is nigh unsolvable (Isham et al. 2005: 162). Ross offers four holistic approaches to low-income oil-producing countries to optimize their development outcomes (cf. Ross 2012: 235-239):

- 1) Extracting only so much oil that the resulting oil revenue doesn't exceed the government's ability to spend it effectively;
- 2) Bartering oil, so that the country receives infrastructure or public services in exchange for petroleum – instead of hard currency that a possibly corrupt state might spend ineffectively;
- 3) Direct distribution of oil revenues to citizens;
- 4) Assigning oil revenues to regional or local governments on the basis of subsidiarity.

Others present a slate of possible solutions that crystallize around some key policies, the most important of which are described below.

2.1.3.1. Countercyclical policies: stabilization and wealth funds

By far the most widespread policy recommendation in resource curse literature relates to the smoothing or stabilization of volatile oil revenues. The idea behind stabilization is that setting aside some of the oil revenue generated during booms precludes its inefficient spending and ensures that there are resources available to ward off the effect of busts. Different stabilization mechanisms were recommended by a plethora of researchers (Alssadek, Benhin 2021: 10; Davis et al. 2003: 276; Eifert et al. 2003: 84; Ross 2012: 242), although Eifert et al. and Ross rightly caution that these mechanisms are politically burdensome to implement, especially in poor oil-exporting countries where the benefits of increased immediate spending are hard to resist (Eifert et al. 2003: 115; Ross 2012: 230).

Davis et al. propose different types of nonrenewable resource funds: ‘stabilization funds’ that stabilize budget revenues by channeling away some oil revenue when oil prices are high, and pay into the budget when oil prices are low; ‘savings funds’ that serve as the financial foundation for diversification or a post-oil future of oil-rich countries; as well as hard currency-denominated funds that to counter real exchange rate volatility and the Dutch disease; and funds that serve purposes of transparency (Davis et al. 2003: 274). John Wakeman-Linn et al. argue for the “insulation” of oil revenues through a fund in order to incentivize the establishment of a sound tax system (Wakeman-Linn et al. 2003: 349). Davis et al. also put forward the Norwegian example in which the Norwegian State Petroleum Fund receives all of Norway’s net oil revenues and then finances the budget’s non-oil deficit or receives the budget’s surplus (Davis et al. 2003: 286).

It should be noted, however, that even if such funds are created, their effectiveness is subject to the prudence of political actors in any given oil-producing country in setting the right oil price thresholds for paying into and paying out of the fund, as well as maintaining a prudent overall fiscal policy if using mechanisms like that of the Norwegian State Petroleum Fund. This is why Wakeman-Linn et al. propose four criteria for the optimal design of such wealth funds: 1) having the oil fund serve as a financing mechanism for the state budget, like in Norway; 2) managing the fund transparently and accountably to the public and the legislature; 3) managing the fund’s assets soundly, investing them in safe assets abroad and never domestically (not even in economic diversification); and 4) keeping the regulation around the fund consistent over the long term, avoiding both “an excessive buildup” of funds and its “raiding” outside of agreed procedures (Wakeman-Linn et al. 2003: 352).

Another innovative idea proposed by Ross should be noted. He argues for a solution that could to some extent externalize the political costs of operating stabilization funds in low-income oil-producing economies: a special credit facility provided by the World Bank or other international financial institutions that could encourage countercyclical borrowing, providing low-interest loans when global oil prices fall below a given benchmark, to be repaid when oil prices rebound (Ross 2012: 243).

Both Eifert et al. and Davis et al. caution that in calculating the optimal share of oil revenue to be saved during booms, one should err on the side of safety (Eifert et al. 2003: 85), considering negative shocks permanent and positive shocks temporary until proven otherwise (Davis et al. 2003: 276).

2.1.3.2. Oil revenue transparency

Although stabilization funds are widely recommended by resource curse theorists as a mechanism to fend off especially the Dutch disease but also other resource symptoms, some researchers are cognizant of the political challenges inherent in, essentially, mandating savings in low-income countries. Ross goes so far as to say that such funds depend on “politically altruistic – even suicidal – behavior by politicians who must cut spending during booms, when the economy is strong, and citizens often believe they should not make sacrifices” (Ross 2012: 242). His ‘fiscal theory of democracy,’ however, allows for the possibility that greater oil revenue transparency – “lifting the secrecy of petroleum revenues” – could also mitigate some of the resource curse symptoms (Ross 2012: 244). This view is seconded by Al-Kasim et al. who believe that information about oil production performance allows citizens of oil-rich countries “to hold their leaders accountable” with the help of international organizations, potentially leading to better development outcomes (Al-Kasim et al. 2013: 146).

2.1.3.3. Best practices in fiscal policy

If one is to believe that weak control and regulation of IOCs, as described in subchapter 2.1.2.3., is a crucial cause of the resource curse and the fiscal resource curse, as described in subchapter 2.1.1.2., is a key symptom, then it follows that good fiscal policies are effective tools in countering the resource curse. Emil M. Sunley et al. have conducted significant research examining the best uses of different fiscal levers available to oil-producing countries,

ranging from royalties to resource rent taxes (RRT), production sharing agreements (PSA), and fiscal stability causes (for details, see Sunley et al. 2003: 155-162). Their key conclusion is that an ideal tax regime for oil-producing countries “should combine some up-front revenue with sufficient progressivity to provide the government with an adequate share of economic rent under variable conditions of profitability”, at best by combining corporate income tax with RRTs or by enshrining progressive government shares in PSAs, while at the same building out fiscal capacity, keeping the administrative burden as low as possible, and combating tax evasion (Sunley et al. 2003: 176).

2.1.3.4. Better regulation of oil companies

Another policy recommendation that aims to remedy the IOC-related causes of the resource curse is better regulation of oil companies. This applies both to national oil companies (NOCs) owned by the governments of oil-producing countries, and to the regulatory environment around IOCs.

In terms of the NOCs, Charles McPherson calls attention to the necessity of improving their efficiency by freeing them of “inefficient noncommercial objectives”, like maintaining an unnecessarily large labor force, developing local capacity in the oil services sector, supporting social infrastructure and regional development, or selling petroleum products locally below market prices. He argues that “NOCs cannot discharge these obligations and at the same time develop commercially” (McPherson 2003: 189-190). For this reason, he argues that NOCs should be benchmarked against IOCs, engage in competition either with each other or with IOCs, divest from non-performing assets, enter joint ventures with IOCs, or potentially privatized in part or in full (McPherson 2003: 195-196). It is crucial to add an essential point to this argument: McPherson’s research does not say that the aforementioned noncommercial objectives are illegitimate or should not be pursued – he only argues that they should not be pursued *by* NOCs.

On this latter point regarding privatization, Arpita Asha Khanna weighs in with research suggesting that private oil ownership – e.g. the absence of a strong government-owned NOC that is involved in oil production – improves welfare outcomes in countries with weak institutions, but “countries with strong institutions do better by adopting state ownership” (Khanna 2021: 9).

As regards IOCs, to make sure of optimal outcomes for the country as a whole and not just for the IOCs, Al-Kasim et al. recommend competitive bidding in the licensing phase, with licenses awarded to more than one company so that more technical resources are available for meeting the challenges of the oil field for which the license was issued (Al-Kasim et al. 2013: 140). In the exploration phase, governments should see to it that all potential commercial resources are investigated, and in the production phase, the government should be involved in monitoring performance and checking for deviations from the field development plan so that remedial action can be taken without delay in case it becomes necessary (Al-Kasim et al. 2013: 140).

2.1.3.5. Better institutions

As noted in subchapter 2.1.2.2., low institutional quality has been identified in the literature as one of the causes of the resource curse, allowing for the obvious conclusion that policies aimed at improving institutional quality are remedies to the resource curse.

Research conducted by Anne D. Boschini et al., while confirming Isham et al.'s hypothesis on the correlation between point-source resources and the resource curse, suggests that "a sufficient improvement in institutional quality turns resource abundance into an asset rather than a curse", especially in countries endowed with point-source resources (Boschini et al. 2007: 614). Karim Eslamloueyan and Mahbubeh Jafari, too, assert that "oil-rich countries with good institutions, measured by less corruption, better bureaucracy quality, high investment profile, government stability, and [...] good rule of law experience a higher growth rate" (Eslamloueyan, Jafari 2021: 11).

Kolstad et al. specify what kind of institutions make the largest difference: "higher order" (e.g. not sector- or role-specific) institutions that promote "private sector efficiency" and "public sector accountability", restrict capture by both private special interests and government officials, "support private contracts and provide checks against expropriation" (Kolstad et al. 2009: 957). The authors, however, call attention to the key problem of attempting to combat the resource curse through improved institutional quality: there is no universal blueprint, institutions that work in donor countries like Norway might even be counterproductive when applied in low- or middle-income countries, which makes experiences from countries at a similar developmental stage more valuable (Kolstad et al. 2009: 957).

2.1.3.6. Incentivizing the production of tradables

In keeping with the fact that the Dutch disease is the most widely researched and well-proven symptom of the resource curse, some research suggests that incentivizing the production of tradables can effectively mitigate the two Dutch disease effects and thereby the resource curse.

Hausmann and Rigobon mention as a first-best financial policy that oil-rich countries should facilitate foreign direct investment (FDI) specifically in the non-resource sector; as a second-best financial policy, they recommend direct support to the tradables sector without distorting its prices, for example financial guarantees that reduce the risk of bankruptcy and thereby drive down interest rates (Hausmann, Rigobon 2003: 39-41). Alssadek and Benhin also point to the need to “attract foreign investment in the competitive tradable sector,” especially manufacturing, by “reducing the cost of doing business” (Alssadek, Benhin 2023: 19). They also mention investing oil income in the tradable sector through credits (Alssadek, Benhin 2023: 19). It is important to note that Wakeman-Linn et al. dispute this latter point, claiming that investing oil income into stabilization funds yields better outcomes than investing it domestically (Wakeman-Linn et al. 2003: 352).

Attracting foreign investment is a policy recommendation that is directly connected to institutional quality, as the institutions that incentivize entrepreneurial activity and protect it against governmental capture are the same institutions that define the investment climate in a given country. An attractive tax regime, tax exemptions or direct government subventions can also be mentioned as measures that may attract FDI.

Alssadek and Benhin also mention that “augmenting skills in labour”, e.g. human capital development, is a crucial factor in attracting FDI (Alssadek, Benhin 2023: 19). Eslamloueyan and Jafari second this assertion, claiming that there is a threshold level in the quality of human capital – as measured by government investment in higher education or school enrollment, indicators they used as proxies – “above which the oil curse vanishes” (Eslamloueyan, Jafari 2021: 11).

2.1.4. Criticism of resource curse theory

Subchapters 2.1.1., 2.1.2. and 2.1.3. described the main tenets and findings of resource curse theory. These findings are rather complimentary than contrasting, and in any case compatible with each other save for minor bones of contention. There is, however, substantial criticism of resource curse theory on the part of established researchers. This includes holistic critiques of the entire field or of specific concepts or applications thereof.

Jesse Salah Ovidia, a prominent proponent of state-led development approaches, questions the resource curse by pointing to the fact that in the 2001-2010 period, the oil exporters of Sub-Saharan Africa outperformed the rest of the region (Ovidia 2016: 3). He also cautions that resource curse thinking “can at times be overly deterministic” (Ovidia 2016: 8). Alexander James makes a similar point, claiming that the entire concept of the resource curse is a “statistical mirage”: he concludes that the fact that resource-dependent countries experience slow growth in some periods is “largely explained by average sector-growth heterogeneity”, and all in all, “[f]or all growth periods considered, the relationship between resource dependence and growth in non-resource production is non-negative” (James 2015: 62).

Hausmann and Rigobon, who are resource curse theorists themselves, take issue only with the concept of the Dutch disease, claiming that the Dutch disease should have caused greater (non-oil) growth in oil-producing countries when oil revenues declined in the 1980s, which did not occur; hence, the Dutch disease “does not fit the facts”, and “it is not obvious that learning by doing or technological development is slower in resource-based industries relative to others” (Hausmann, Rigobon 2003: 17).

2.2. New Institutional Economics

The Acemoglu-Johnson-Robinson (AJR) approach to New Institutional Economics claims universal validity as a theory of development economics; it is not specific to oil-producing countries. It is based on three fundamental arguments:

- 1) Differences in development outcomes are attributable to differences in institutions, defined as “the rules influencing how the economy works, and the incentives that motivate people” (Acemoglu, Robinson 2012: 73).
- 2) Better development outcomes stem from ‘inclusive economic institutions’ (as opposed to ‘extractive’ ones) that “allow and encourage participation by the great mass

of people in economic activities that make best use of their talents and skills and that enable individuals to make the choices they wish” (Acemoglu, Robinson 2012: 74). Inclusive economic institutions must ensure the following (based on Acemoglu, Robinson 2012: 74):

- a. the security of private property;
 - b. equality before the law;
 - c. public services that provide “a level playing field in which people can exchange and contract”;
 - d. new businesses can enter the market;
 - e. people can choose their careers freely.
- 3) Inclusive economic institutions depend on ‘inclusive political institutions’ (as opposed to ‘extractive’ ones), which “make power broadly distributed in society and constrain its arbitrary exercise”, precluding the establishment of extractive economic institutions (Acemoglu, Robinson 2012: 82).

Several strands of this argument are immediately relevant to this present work. Firstly, AJR claims that economic institutions are the defining source of differences between countries in terms of economic growth and prosperity (Acemoglu et al. 2004: 3). As economic institutions are defined as endogenous products of political decisions in any given country, this means that the crucial factor in explaining differences in development outcomes is endogenous (Acemoglu et al. 2004: 3).

Secondly, the only major exception they allow for in terms of the endogeneity of the sources of prosperity is colonialism: they argue that different colonization policies created different sets of institutions in colonies, which then lived on after independence, leading to the emergence of poor ‘extractive states’ in Africa and prosperous ‘Neo-Europes’ in North America, Australia and Oceania (Acemoglu et al. 2000: 2). This is directly relevant to the topic at hand as the African group is composed entirely of former colonies. Whether or not the post-Soviet group also consists of former colonies is a subject of discussion in the relevant literature (see Laruelle 2022: 199, and Kalinovsky 2022: 56, for two opposing views). It is, however, certain that the set of economic and political institutions that the post-Soviet group inherited is markedly different from that inherited by the African group.

Thirdly, the dependence of inclusive economic institutions on inclusive political institutions essentially means that economic development depends on democracy. The AJR approach does not entirely exclude the possibility of economic growth under conditions of authoritarianism (t.i. ‘extractive political institutions’), but it allows for this possibility only in two cases: 1) when elites “directly allocate resources to high-productivity activities that they themselves control”, or 2) when “institutions permit the development of somewhat [...] inclusive economic institutions” (Acemoglu, Robinson 2012: 91-92). Importantly, with regard to China, the most important growth story that emerged under conditions of extractive political institutions, they wagered the prediction that the Chinese model “will not bring sustained growth, and is likely to run out of steam” (Acemoglu, Robinson 2012: 435). As extractive political institutions of various kinds are, as explained by both Ross’ fiscal theory of democracy and the political resource curse, in place in all of the countries examined in this study, this latter argument – especially if put forward in a way that claims validity for China – is of crucial importance and merits inclusion of New Institutional Economics in the theoretical framework. However, as of the time of writing in May 2025, the continued growth of China casts doubt on the validity of this entire third argument. These doubts constitute the main reason for the inclusion of state-led development approaches, especially the Beijing Consensus, in the theoretical framework, as explained in further detail in subchapter 2.3.

2.2.1. Connections between NIE and resource curse theory

As mentioned on multiple counts in subchapter 2.1. above, the topic of institutions sits at the intersection of New Institutional Economics and resource curse theory, with the latter examining institutional quality both as a cause of and in the context of possible solutions to the resource curse.

Mehlum et al., for example, define ‘grabber-friendly institutions’ as the factor that, when combined with resource abundance, turns resource-rich countries into growth losers (Mehlum et al. 2006: 16). Their definition of ‘grabber-friendly’ and ‘producer-friendly’ institutions mirror the ‘extractive’ and ‘inclusive’ institutions theorized by Acemoglu and Robinson. In a similar vein, Boschini et al. assert that “a sufficient improvement in institutional quality turns resource abundance into an asset rather than a curse” (Boschini et al. 2007: 614). Kolstad et al.’s list of institutions that matter in determining whether or not a country falls

prey to the resource curse are the very same institutions that AJR theory calls for to ensure the security of private property, equality before the law, and a level playing field for exchange and contracts between people (cf. Kolstad et al. 2009: 957).

Ross' 'fiscal theory of democracy' even integrates the political aspect: the device by which, he argues, authoritarian rulers can remain in power, amounts to extractive economic institutions reproducing extractive political institutions (cf. Ross 2012: 71). Cocx and Francken, who examined governments' healthcare spending in oil-rich countries, found evidence to the effect that the volatility of oil revenues and the unaccountability of governments (t.i. extractive political institutions) leads to lower public health spending as a share of GDP in natural resource-dependent countries (Cocx, Francken 2014: 140-141). This is consistent with the AJR framework in which the quality of public services is also an economic institution contingent on inclusive political institutions.

Apart from these authors, however, resource curse theorists are generally less convinced that inclusive economic institutions depend on inclusive political institutions, even though the causal link between high-quality economic institutions and better development outcomes is considered mainstream in resource curse theory. Isham et al. assert that "poor institutions are deeply rooted," in keeping with their rather defeatist conclusion that the resource curse is almost inevitable (Isham et al. 2005: 162). Al-Kasim et al. and Eifert et al., the authors who have dealt in detail with the typology of political environments and the bearing these environments can have on the resource curse, draw the line less clearly between inclusive and extractive political institutions. In the Al-Kasim et al. framework, the key determinants of whether better institutions that lead to better development outcomes can be established are the intention and the capacity of government. They posit that "welfare-focused" and "honest" governments, which are both honest themselves and able to contain corruption in regulatory structures, are able to build effective institutions, such as a good investment climate, competitive bidding for oil production licenses, maximized total oil recovery, effective regulatory control of oil production, and tail-end production (Al-Kasim et al. 2013: 142). In their framework, it's not a requirement for any of this that the political institutions be inclusive, e.g. democratic. Eifert et al., in their political economy classification of oil exporters discussed above, sees democracy as a boon to good institutions only if it's 'mature', and they prefer 'reformist autocracy' over 'factional democracy' as a form of government that can establish the right

institutions, like stabilization, expenditure smoothing, a competitive private sector, and exchange rate management to counteract the Dutch disease (Eifert et al. 2003: 89). It should be noted, however, that Eifert et al.'s threefold classification of autocracies ('reformist,' 'paternalistic' and 'predatory') comprises different sources of legitimacy and methods of consensus-building, which can be correlated to varying degrees of inclusivity in their political institutions. The Eifert et al. model is thus compatible with the AJR framework if one allows for the possibility that 'inclusive' and 'extractive' political institutions constitute not a mutually exclusive binary but two extremes of a spectrum.

2.2.2. Criticism of the AJR approach

One key criticism of AJR is inherent in the fact that it has been – depending on one's perspective – proven wrong or at least not yet proven right on the crucial question of China. This is the key reason for the inclusion of the third element of state-led development, described in subchapter 2.3., in this theoretical framework.

Ha-Joon Chang presents, perhaps, the most comprehensive critique of the AJR approach, claiming that most of the good institutions championed by AJR were actually not a precondition to economic development in now-developed countries, as their elevation to high-income status preceded the establishment of these institutions. He makes this argument with regard to universal suffrage, a key inclusive political institution (Chang 2002: 77); and crucial inclusive economic institutions like an independent judiciary (Chang 2002: 81); a strong property rights regime, which he even depicts as a possible impediment to economic development (Chang 2002: 82); efficient tax collection (Chang 2002: 100); and advanced welfare institutions (Chang 2002: 103). Chang's ultimate argument is that on average, current developing countries are at a higher level of institutional development than now-developed countries were at a comparable stage in their development (Chang 2002: 120).

2.3. State-led development

State-led development approaches, again, are – apart from Ovidia's 'petro-developmental state' – not specific to oil-rich developing countries. They are rooted in the assumption that in order to guarantee positive development outcomes, the state has to do more than just unleash the forces of the market and build high-quality institutions: it has to be the driving

force of development. They also question the close link between democracy and development, which increases their relevance in analyzing the development outcomes of more or less authoritarian countries. The following subchapters are dedicated to the two strands of research on state-led development that are most relevant to this work at hand: the Beijing Consensus and the petro-developmental state. A general introduction of state-led developmental thinking is now in order.

Chang, a prominent theorist of state-led development, has already been cited in subchapter 2.2.2. in regard to his arguments against the AJR framework. His positive agenda can be summarized as follows to illustrate the basic approach of state-led development theories:

- 1) ‘Good governance’ might not actually be a good development strategy; the policies that are being endorsed nowadays by international financial institutions as attributes of ‘good governance’ were not the policies that now-developed countries used to develop (Chang 2002: 2).
- 2) The key factor in development is whether a given country can shift to higher value-added activities. This shift does not happen naturally, and it is the task of the state to make it happen (Chang 2002: 126).
- 3) High-quality institutions are not preconditions or drivers of economic development, but outcomes thereof (Chang 2002: 10-11). Improving institutional quality is an important task for developing countries, but there is no universal blueprint for the right institutional framework (Chang 2002: 130-132).
- 4) High-quality institutions yield economic growth only if combined with good development policies (Chang 2002: 133). There is reason to believe that some forms of state intervention and infant industry protection are good policies (Chang 2002: 126).
- 5) Historical precedent does not lend credence to the claim that economic development is contingent on democracy (Chang 2002: 76).

In arguing for stronger state engagement in development, Peter B. Evans goes even further than Chang and claims that “[l]eft to themselves markets will not deliver an optimal supply” of the human capital development services that are the backbone of development in the 21st century, rendering “aggressive and efficient entrepreneurial engagement by public

institutions” necessary (Evans 2008: 13). Evans’ path towards economic growth – “expanding access to the existing stock of ideas, increasing effective utilization of this stock and generating of new ideas suited to a country’s specific circumstances” – resonates with the tenets of the Beijing Consensus, to be discussed further in the following subchapter.

2.3.1. The Beijing Consensus

The term ‘Beijing Consensus’ is an allusion to the Washington Consensus, the neoliberal standard of ‘good governance’ that is widely considered to have failed its objective of spurring economic growth and elevating living standards in the 1980s (see Neubert 2023: 385). It is widely used in literature but lacks a universal definition. Joshua Cooper Ramo, who coined the term in his 2004 book *Beijing Consensus*, defines it in the following terms: “China is marking a path for other nations around the world who are trying to figure out not simply how to develop their countries, but also how to fit into the international order in a way that allows them to be truly independent, to protect their way of life and political choices in a world with a single massively powerful centre of gravity. I call this new physics of power and development the Beijing Consensus” (Cooper Ramo 2004: 3-4). For the purposes of this present work, the Beijing Consensus is the sum of more or less universally applicable insights gleaned from China’s economic development.

Bell points out that apart from the visible shortcomings of the Washington Consensus, there is another factor that legitimizes looking to China for insights on development: it turned out that democratic practices are not just difficult to export outside the Western world but also “no longer [...] a clear-cut positive model for other countries” due to the rise of populist leaders (Bell 2015: 3). He calls the Chinese alternative to liberal democracy ‘political meritocracy’ and defines it as “a sophisticated and comprehensive system for selecting and promoting political talent that seems to have underpinned China’s economic success”, which at the same time liberates meritocratically selected bureaucrats from the shackles of answering to elected politicians (Bell 2015: 3-4).

The absence of a consensus behind the Beijing Consensus becomes apparent in the divergent ways different Beijing Consensus theorists summarize its core tenets. The Beijing Consensus according to Cooper Ramo is comprised of three theorems (cf. Cooper Ramo 2004: 11-12):

- 1) Developing countries need to concentrate on bleeding-edge and not trailing-edge technology so as to “create change that moves faster than the problems change creates”.
- 2) Development is chaos management in the interest of improving the quality of life, sustainability, and equality. Elsewhere Cooper Ramo points to the importance of testing and failure in the Beijing Consensus (Cooper Ramo 2004: 30).
- 3) Self-determination, as in using leverage to influence hegemony that could hurt a developing country, is key.

In contrast, Bell establishes the three planks of the ‘China model’ as the following:

- 1) Democracy at the bottom: village committees are designated self-governing elected bodies since the 1982 constitution, where elections are free and fair, candidates are nominated by registered voters, and elections must be competitive (Bell 2015: 181).
- 2) Experimentation in the middle: “the central government checks which policies work at the subcentral level before spreading them throughout the country” (Bell 2015: 182). This ensures adaptability and is, according to Bell, a major contributor to China’s success (Bell 2015: 185).
- 3) Meritocracy at the top: party cadres are selected based on expertise after having engaged in fierce competition to get into university, then to be admitted to the party, and then at the nationwide public service examination (Bell 2015: 185).

As regards specific, lower-order institutional arrangements, there has been ample research into the Chinese model. Frank K. Upham, for example, writes with regard to property rights that China has achieved massive and sustained economic growth despite the courts’ record of looking away when “important social or government actors” threatened property rights; “the economic interests of foreign and domestic investors in China have not been so violated that growth has stopped”, however (Upham 2017: 141). Essentially, he makes a similar point to that of Chang that a strong property rights regime might even be an impediment to economic development under some circumstances. He does, however, caution that the

development of the Chinese property rights regime bears some resemblance to the English Enclosure Movement, in that “informality, illegality, and ad hoc institutional innovation have been followed by movement toward formality including legal formality” (Upham 2017: 142). The Chinese example, thus, seems to underpin the general Chang thesis that property rights may impede development at earlier stages but emerge as an outcome of development.

With regard to the rule of law, Benjamin L. Liebman notes that China’s modern-day judiciary draws mostly on China’s experience but integrates selected elements from Western judiciary designs and the experience of other socialist countries as well to create “a precedent for rule of law without democracy” (Liebman 2017: 233). In China, however, courts are “not the only vehicle for delivering justice” and “not the central mechanism for dispute resolution”; only a part of cases are left to be resolved by the courts while the Party-state steps in to resolve most disputes to ensure quicker settlement of cases (Liebman 2017: 234). Liebman deems the Chinese courts to be “over-responsive” in solving cases of popular or individual discontent, no matter how much of a legal footing these cases have (Liebman 2017: 245); yet, courts usually refrain from deciding cases “touching on policy or political issues” (Liebman 2017: 243). Liebman concludes that the overall institutional design of the Chinese judiciary is unique, with Western borrowings limited to substantive law and technical matters (Liebman 2017: 239).

In terms of the fight against corruption, Hualing Fu offers the insight that it is an intra-party affair, handled politically through party institutions like jiwei, Central Inspection Groups or shuanggui (Fu 2017: 258). The obvious objection that a political body cannot be expected to go after corruption within its own ranks is somewhat mitigated by Cooper Ramo’s observation that corruption (and pollution) are considered to be “toxic political forces” that undermine the regime’s highly valued stability (Cooper Ramo 2004: 23). This echoes Schmoll and Swenson’s conclusion that a goal that could be served by the institutions proposed by AJR may also be reached through ideological commitment.

Furthermore, Fu calls attention to the three layers of law that make up the Chinese legal system: formal law based on the constitution, extra-law as “quasi-formal law with questionable legality and constitutionality”, and extra-extra law as “government measures that exist in some dark space, seemingly unrelated to any legal framework and devoid of any legal authority [...] an informal political institution characterized by a total lack of legality” (Fu 2017: 263-

264). While extra-extra law is used to underpin “predatory and repressive government policies which cannot be justified by any law or policies” (Fu 2017: 264), anticorruption is typically an extra-law affair driven by political expediency: it is the Party’s leading position that is constitutionally embedded, which elevates the Party’s internal rules to quasi-legal status even though they are outside the constitutional framework (Fu 2017: 268).

Finally, a word about economic development in particular. Curtis J. Milhaupt concludes his study of Chinese corporate capitalism by stating that “China’s experience confirms that »economically benevolent dictators« can achieve development even in the absence of strong formal institutions” (Milhaupt 2017: 295). This chimes with Eifert et al.’s definition of a ‘reformist autocracy’ but sharply contradicts AJR’s insistence on inclusive political institutions as a prerequisite to inclusive economic institutions on which, again, economic growth is predicated. Milhaupt also asserts that the preponderance of the corporate form is common to all successful national development stories, and it is the right adaptation of the corporate form – “shareholder-centric, board-centric, employee-centric, or state-centric” that should be chosen depending on the “institutional setting and political economy” of any given country (Milhaupt 2017: 295). The corporate form is also important because it is the nature of corporations that they are “not simply passive takers of rules and norms; they actively shape the institutional setting which they operate” (Milhaupt 2017: 297). Milhaupt underlines, echoing Bell’s views, that in China, “corporate values and performance have been fitted into a complementary system for political advancement that generates incentives compatible with economic growth” (Milhaupt 2017: 296). The Beijing Consensus seems to prove, thus, that the right incentives that are conducive to economic growth, to innovation, and to tolerably low corruption levels can be set by political institutions that are not inclusive in the Western sense – but perhaps inclusive in their own way, as evidenced by Bell’s three planks.

2.3.2. The petro-developmental state

More specific to oil-rich developing countries than the abstract debate on the democracy vs. development nexus is Ovadia’s concept of the petro-developmental state, a theory of leveraging oil wealth for development. Ovadia defines the petro-developmental state as a “combination of sound investment of revenues and local content policies”, coupled with “good

governance, redistribution of the benefit from resource-based development, and the active participation of citizens and civil society organizations” (Ovadia 2016: xii).

The key concept of Ovadia’s petro-developmental state is ‘local content’, defined as “indigenous participation in economies otherwise geared for the export of raw materials”, which spawns “local manufacturing and service provision through backward, forward and sideways linkages along the petroleum value chain” (Ovadia 2016: xi). Reflecting Chang’s assertion that the core task of developmental states is to steward the shift in their economies towards higher value-added activities, Ovadia proposes using sound local content policies to appropriate as much of the value-added in the petroleum value chain to the national economies of oil-producing countries as possible.

Local content is, crucially, also the vehicle through which Ovadia deals with the issue of corruption, or the resource curse symptoms described in more detail in subchapter X.1.1.2. He argues that local content is two-faced: it is both a mechanism “for promoting development” and a mechanism “that can allow a local elite to prosper with only minor benefits reaching the majority of citizens” (Ovadia 2016: xiv). It is, therefore, a device that can be used both to perpetuate and to dismantle the rentier state (Ovadia 2016: 95). In their ideal form, sound local content policies work to the effect that “the surplus created by the application of capital can promote further capitalist accumulation,” strengthening the national bourgeoisie and preserving more oil wealth for the oil-producing developing countries (Ovadia 2016: 198-199). This concept bears resemblance to the notion of ‘developmental patrimonialism’ put forward by David Booth and Fredrick Golooba-Mutebi, also in an African context. They speak of developmental patrimonialism when “the ruling elite acquires an interest in, and a capability for, managing economic rents in a centralized way with a view to enhancing their own and others’ incomes in the long run rather than maximizing them in the short run” (Booth, Golooba-Mutebi 2012: 381). Both concepts are compatible with Eifert et al.’s ‘reformist autocracy’ and antithetical to AJR’s strict requirement that inclusive economic institutions be based on inclusive political institutions.

Some researchers caution that governments should not be overly dependent on NOCs which are often selected as the primary vehicles of local content promotion. McPherson warns that this practice might lead to cronyism both in terms of the employment process and in terms of the distortion of the procurement process of goods and services for the oil industry

operating in the country, bereaving not just IOCs but also the government of resources (McPherson 2003: 194). Similarly, Al-Kasim et al. emphasize that in order to minimize corruption while promoting local content, NOCs should not be entrusted with the task of regulatory supervision of oil production in the country when they also participate in it commercially (Al-Kasim et al. 2013: 145).

2.4. Conclusion

The theoretical framework of this present work consists of three cornerstones. First and chief among them is the diverse and productive field of quantitative research termed ‘resource curse theory.’ Main findings and core assertions of resource curse theory include that oil wealth might, under certain conditions, be detrimental rather than beneficial to the economic development of oil-rich countries. The curse occurs most often in the shape of the Dutch disease, but other symptoms like the fiscal resource curse, excessive government, and the political resource curse – a tendency towards authoritarianism – might also occur. The literature is divided on the possible causes of the resource curse, with some authors deriving it from the nature of oil revenues, especially the fact that they are volatile, or point-source resources. Others emphasize that political decisions taken in oil-producing countries regarding the quality of institutions, regulation around national and international oil companies, forms of government or oil ownership are more important determinants of the resource curse. Policy recommendations advanced by resource curse theorists include, first and foremost, countercyclical stabilization policies, with wealth funds playing a special role. Other recommendations include the transparent handling of oil revenues, sound fiscal policies and fiscal capacity-building, improved institutional quality, best practices in the regulation of oil companies, and measures to support manufacturing.

The second cornerstone is New Institutional Economics, specifically the Acemoglu-Johnson-Robinson approach. This approach posits with a claim to universal validity that the inclusivity of economic institutions is the key determinant of development outcomes, with inclusive (as opposed to extractive) economic institutions being contingent on similarly inclusive political institutions. Many resource curse theorists have found evidence supporting the link between development outcomes and inclusive economic institutions. The causal link between inclusive economic institutions and inclusive political institutions is less obvious and

somewhat called into question by the sustained economic development of China, which AJR theory predicted to run out of steam.

This explains the necessity for a third cornerstone, state-led development approaches. These posit that historical precedent does not substantiate claims that inclusive political institutions are necessary for inclusive economic institutions and thereby growth. Rather, they identify the shift from lower value-added to higher value-added activities as the key step in development, one which does not happen automatically by the sheer force of the market, and one through which the state has to steward the national economy. In the context of state-led development, two specific approaches are used. One is the Beijing Consensus as the sum of insights gleaned from the sustained growth of China on the nexus between political institutions, economic institutions and development. Another is the petro-developmental state as a concept of state-led development geared specifically towards oil-rich developing countries, which posits that the appropriation of value-added to the national economy in the form of local content policies is a sound strategy of development if the risks inherent in such policies are adequately managed.

3. Sample and methodology

3.1. Methodology

This present work is a comparative multi-case study based on analysis of trends in wide range of development indicators. It follows Adam Przeworski and Henry Teune's 'most similar systems' design (MSSD): its sample consists of "systems as similar as possible with respect to as many features as possible" with the aim of optimizing for comparative inquiry, the logic being that when important differences are found in otherwise similar countries, "the number of factors attributable to these differences will be sufficiently small to warrant explanation in terms of those differences alone" (Przeworski, Teune 1970: 32). In this context, common systemic characteristics are considered controlled for, while differences between systems are regarded as explanatory variables; the number of intersystemic commonalities is maximalized, while the number of differences minimalized (Przeworski, Teune 1970: 33).

This case study is 'hypothesis-generating' in Arend Lijphart's sense: it commences with a "vague notion of possible hypotheses to be tested subsequently among a larger number of

cases”, with the aim of developing “theoretical generalizations in areas where no theory exists yet” (Lijphart 1970: 692). It follows Alexander L. George and Andrew Bennett’s method of ‘structured, focused comparison’: each case is examined under the same aspects and those aspects only – development outcomes as measured by indicators – “to guide and standardize data collection” (George, Bennett 2005: 67). Structured, focused comparison requires a “specific research objective” and a “theoretical focus appropriate for that objective” (George, Bennett 2005: 70); the former will be laid out presently, the latter is amply described in chapter 2 on the theoretical framework. The study also involves limited process tracing as an attempt at solving resource curse theory’s causality problem. While formal statistical causality cannot and will not be established in this paper as it does not employ the appropriate quantitative methodology for reasons described in subchapter 2.1., “tracing the processes that may have led to an outcome helps narrow the list of potential causes”, and analyzing multiple cases under the same aspects helps establish what George and Bennett call “the repertoire of causal paths that lead to a given outcome and the conditions under which they occur” (George, Bennett 2005: 207).

Research conducted for this present work concerns countries currently classified by the World Bank as ‘middle-income countries’ which have attained their sovereignty in the 20th century and share a largely but not exclusively oil-based economy in which oil and natural gas rents make up 15-30 percent of GDP combined. These criteria serve the overarching goal of comparability. The requirement that countries of concern be classified as ‘middle-income’ is meant to ensure that they are still developing countries at comparable stages of development. The requirement that these countries be established as sovereigns in the 20th century guarantees the comparability of the time horizon these countries had to pursue development in a manner of their choosing, as it is assumed that changes in the global economy have made different development paths available to sovereigns in different periods of time. Lastly, the criterion on the share of the oil and gas sectors in the analyzed countries’ GDP serves as another guarantor of comparability. The GDP share of these sectors should be high enough to expose the countries of concern to the phenomena described at length in subchapter 2.1.1. on the symptoms of the resource curse, but low enough so that the country cannot reach high-income status by functioning in a rentier-state model as defined by Beblawi (Beblawi 1987: 51-52). Furthermore, sanctioned countries cannot be analyzed in this context as sanctions distort

oil suppliers' access to the global oil market to an extent that alters their development paths beyond comparability with those of non-sanctioned countries.

To pursue the above research objective, two sub-groups of three oil-rich countries each were chosen to be analyzed: a group of post-Soviet states (Azerbaijan, Kazakhstan, Turkmenistan) and a group of postcolonial African countries (Algeria, Angola, Gabon). The choice of six countries rooted in two distinct geographical and historical realities aims to balance analytical depth with cross-case comparability. These countries all conform to the criteria set out above: they are classified as middle-income countries, have attained their sovereignty in the 20th century, and possess economies in which oil and gas rents represent 15-30 percent of GDP. However, due to their different systems of governance, development strategies and development outcomes, they lend themselves to comparison with their peers in the same sub-group. The existence of two sub-groups also serves the overarching objective of comparability, as it is assumed that the nature of pre-independence regimes have an impact on countries' state of development at independence, as well as their development trajectories. The point of contrasting a post-Soviet sub-group with an African one is to filter out differences between the Soviet and the Western colonial pre-independence regimes, which result in different baseline levels of development at independence regarding, for example, human capital and industrialization. These different baselines can then reasonably be expected to influence the development trajectory of the countries at hand in several indicators of economic and social development. The two sub-groups will be described in more detail in subchapter 3.2. on the sample.

The time horizon of this comparative multi-case study encompasses the period from 1991 to the present day (t.i. the most recent data available, which varies by indicator). The choice of this time window takes into consideration, again, the basic tenet of comparability: it is this period in which all of the analyzed countries had the opportunity to pursue their own sovereign development policy. It also accounts for the fact that the collapse of the Soviet Union had a major impact on both the global oil market and the global landscape of development cooperation: Russia at that point lost control over the resources of the oil-rich former Soviet republics, the Comecon trading area was dissolved, and the USSR disappeared as the source of massive development aid that it had been during the Cold War (Unger 2018: 79). It also merits

consideration that the availability of data for the post-1991 period is much better than for the period before.

Development outcomes are analyzed for these two sub-groups of countries in this time horizon using a broad slate of indicators of economic and social development. These indicators will be listed and briefly justified in subchapter 3.1.1. After available data has been compiled for all six countries, conclusions can be made on what development outcomes these countries have achieved in the time period in question. After these outcomes have been established, the (resource) governance indicators described in subchapter 3.1.2. will be drawn upon to establish what (resource) governance models were employed in the analyzed countries in the time period in question. This data, coupled with a close reading of national development strategies, will allow for conclusions on what forms of governance and what national development policies were in place in the analyzed countries, whether these policies conform to the policy recommendations set out by resource curse theorists, the AJR approach or one of the state-led development approaches, and to what extent the countries were able to mitigate the symptoms of the resource curse.

The research objective is to arrive at correlations of certain governance models and development policies with more or less favorable development outcomes, consistently with the overall MSSD design of this comparative multi-case study, conducted within the methodological framework of structured, focused comparison and limited process tracing.

3.1.1. Indicators of development outcomes

3.1.1.1. Headline economic indicators

There is ample discussion on the flaws of GDP as an indicator of economic development. Crucially, Cressida Gaukroger lists ‘social failure’, ‘economic failure’ and ‘environmental failure’ as the key flaws of GDP in this regard: GDP is unable, she argues, to represent the value of non-productive time and non-financial activities; to account for the distribution of economic wealth within an economy and thereby accurately portray the lived economic experience of the population; and to factor in the sustainability of growth that draws on a country’s natural resources or comes with health or social costs (Gaukroger 2023: 21-23). Still, due to the absence of a single better economic indicator, no assessment of development outcomes can be complete without changes in GDP per capita, calculated in PPP terms to serve as a

better proxy for welfare than nominal GDP. Other indicators will be drawn on to compensate for the social and environmental deficiencies of GDP.

Apart from **PPP GDP per capita**, in which faster growth is considered a more favorable development outcome, multiple other headline economic indicators will be included in the analysis of development outcomes. **Changes in unemployment** will be used to assess the capacity of the six analyzed economies to make efficient use of their human capital pool, with a lower level and a downward trend considered a more favorable development outcome. **Changes in the government debt-to-GDP ratio** will be used to stand for prudent economic governance, the presence of a debt spiral, and the role of debt spending in growth, with lower levels and stable or decreasing trends considered favorable development outcomes in accordance with the policy recommendations set out in subchapters 2.1.3.1. and 2.1.3.3. Including the **balance of payments (BoP) as a share of annual GDP** serves similar objectives while providing a more holistic picture of the financial sustainability of the analyzed countries' development paths. Lastly, the **level of inward FDI as a share of annual GDP** will be used to determine if the analyzed countries have succeeded at establishing investor-friendly institutional frameworks, a key tenet of inclusive economic institutions in the AJR paradigm – even if, as William Milberg warns, more inward FDI does not necessarily imply more successful economic development (Milberg 2004: 46). Data on these headline economic indicators will be sourced from the World Bank and the IMF.

3.1.1.2. Indicators of economic diversification

Economic diversification is essential for future-proofing oil-rich economies. By that token, it is a development outcome that needs to be monitored. Measuring economic diversification has its challenges, however. In the context of resource curse scholarship, Ross cautions against using hydrocarbon exports as a share of GDP to assess the role of the oil & gas industry in a country's economy, listing a host of possible spurious correlations that could be inferred when using this metric, especially for poorer oil-producing countries (Ross 2012: 15). It is partly in deference to Ross' warning that that specific metric is not used in this present work. Instead, economic diversification is gauged using **changes in the share of the oil & gas rents in GDP** to factor the domestic economic footprint of hydrocarbons into the assessment. A consistent downward trend, e.g. one that isn't merely a function of price fluctuations, is

considered a more favorable development outcome. Additionally, **changes in the share of oil & gas exports in total exports** will be drawn on to measure whether the analyzed economies have made progress in terms incentivizing the production of non-hydrocarbon tradables, a policy recommendation of resource curse theory described in detail in subchapter 2.1.3.6. Thirdly, the **Economic Complexity Index** will also be used as a metric of economic diversification. Higher economic complexity and a lower share of oil & gas exports in total exports are considered more positive development outcomes.

The share of oil & gas rents in GDP is provided as a ready-made dataset by the World Bank; the same goes for the Economic Complexity Index, which is available from the Observatory of Economic Complexity. The share of oil & gas industry in exports will be calculated based on the UN Comtrade database, with the HS27 2-digit group ('mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes') of the Harmonized System used as a proxy for oil & gas industry exports. For some years in the analyzed time window, some analyzed countries have not reported their exports to the database, so that the share of HS27 and non-HS27 exports will have to be calculated based on the combined reported import volumes of trade partners. Such mirror trade data is more prone to inaccuracies as its correctness depends on the reporting rigor of dozens, instead of just one, reporting countries. With this limitation in mind, mirror trade data will be used to trace trends. All trade analysis in this work focuses on merchandise exports as measures of export diversification and economic complexity are defined on goods trade and allow consistent comparison across countries and over time. Services exports are relevant for balance-of-payments analysis but less suitable for assessing structural transformation in hydrocarbon-dependent economies due to the outsize role of trade in hydrocarbon-adjacent services as well as much weaker comparability and standardization of data.

3.1.1.3. Indicators of social development

Due to the social and economic shortcomings of GDP, it is imperative that the social aspect of development be reflected directly in the slate of indicators. The UNDP's **Human Development Index (HDI)** is a headline indicator in this regard, with a higher HDI score and faster growth in HDI representing a more favorable social development outcome.

HDI will be complemented by a variety of social development indicators provided by the UN as part of the SDG Dashboard, the **share of population living on less than US\$ 3.65 per day** and **infant mortality** being indicators in which a lower score and faster downward trend are considered a more favorable development outcome, and **life expectancy at birth**, the **share of population with access to safe drinking water, the internet, electricity and basic sanitation**, as well as **government spending on health and education as a share of GDP** being indicators in which a higher score and a faster upward trend are considered more favorable development outcomes.

One key domain of social development is missing from the list of indicators: educational outcomes. That is because no education indicator in the SDG Dashboard or the World Bank's World Development Indicator dataset has data from a majority of the countries in the sample for a time period that would allow for comparability.

3.1.2. Governance indicators

The above slate of development indicators measures development outcomes, t.i. what each country has achieved in different domains of economic and social development. The governance indicators listed presently serve a different purpose: they are used to trace the systems of government and political economy that were in place while the analyzed countries achieved the development outcomes represented by their performance in the indicators listed above. The analytical part of this present work connects to the theoretical framework through these indicators.

The key challenge of this work, similarly to most works of resource curse scholarship, is establishing an unquestionable chain of causality between resource abundance, resource dependence, (resource) governance and development outcomes. This challenge, as well as the arguments that surfaced within the body of resource curse literature against formal statistical causality as the right tool to trace causal links in this context, has been set out in detail in the introductory subchapter 2.1. on resource curse theory. To reiterate: this present work cannot provide a comprehensive solution to the causality challenge plaguing the entire field. What it can do, however, is resort to the case study method recommended used by Ross to make up for the deficiencies of statistical analysis (Ross 2012: 24) and recommended by Alssadek and Benhin as a way to control for exogenous variables and arrive at more precise findings

(Alssadek, Benhin 2023: 13). It can also rely on causal relationships already established in resource curse literature.

The basis for the causal relationship between forms of governance and development outcomes assumed in this paper is the political economy classification of oil exporters compiled by Eifert et al., who conclude that ‘mature democracies’ and ‘reformist autocracies’ are able to produce the best development outcomes in the context of oil-based development, with ‘paternalistic autocracies’ leading to inferior outcomes, as well as ‘factional democracies’ and ‘predatory autocracies’ being the worst possible governance systems for oil-based development (Eifert et al. 2003: 89). As will be evident from governance indicators, there is no mature democracy in the sample. Governance indicators will be used to position the analyzed countries within Eifert’s range of different autocracies or factional democracy, as well as in AJR theory’s spectrum of countries with inclusive or extractive political institutions. A specific subset of governance indicators relating to resource governance, as well as a close reading of national development policies, will further be used to determine the analyzed countries’ adherence to tenets of state-led development in both its Beijing Consensus and petro-developmental state manifestations.

3.1.2.1. Generic governance indicators

The generic governance indicators – generic as in not geared specifically towards resource-rich countries – used in this present work will now be described and briefly justified.

The most important generic governance indicators are the World Bank’s **Worldwide Governance Indicators (WGI)**. Three of these six indicators – **government effectiveness (GE)**, **regulatory quality (RQ)** and **control of corruption (CC)** – will be used as absolute benchmarks of the quality of governance; the remaining three – **voice and accountability (VA)**, **political stability (PS)**, **rule of law (RL)** – will be used to locate the analyzed countries on the democracy-autocracy spectrum. The assumption behind this bisection of the WGI is that voice and accountability, political stability and rule of law mostly depend on the *intention* of a government, while government effectiveness, regulatory quality and control of corruption mostly depend on its *performance*, variations in which are possible without prejudice to the government’s democratic or autocratic intentions. It is, of course, true that in the case of these indicators, performance cannot always be clearly separated from intention as political

interests may always lurk behind poor regulation or rampant corruption. Yet, it is the assumption of this paper that while regimes may consciously decide to sustain their power using autocratic methods, it is less likely that regimes consciously decide to govern ineffectively, provide all-around low-quality regulation, and let corruption spiral out of their own control.

Apart from the WGI, further indicators will be drawn on for the same two purposes. One is Reporters sans frontières' (RSF) **World Press Freedom Index (PFI)**, an auxiliary indicator to the WGI's voice and accountability aspect, which will also be used to locate the analyzed countries on the democracy-autocracy spectrum as press freedom is assumed to depend on the intention of the government. The second one, Transparency International's (TI) **Corruption Perceptions Index (CPI)**, is an auxiliary indicator to the WGI's control of corruption aspect, which needs some qualification. The CPI resembles the WGI CC in the sense that it measures corruption through its perception, but it differs in using a narrower definition of corruption and relying exclusively on a narrower range expert or business perceptions, without being rooted in hard evidence the World Bank is able to collect on corruption in a given country through the development projects it carries out (cf. Rohwer 2009: 48). Apart from possible biases in the CPI's surveyed sources towards the government they are asked about, Tina Søreide lists multiple methodological pitfalls that justify interpreting CPI scores *cum grano salis*. First among them is that corruption is hard to define, and the definition of corruption used for the CPI covers both legal and illegal activities, the boundaries of which differ from state to state (Søreide 2006: 3-4). Secondly, respondents to the CPI's survey may be influenced in their perception of corruption by media coverage of corruption, which itself might provide an unreliable picture of corruption in a given country due to its tendency to scandalize corruption or its biases towards the government (Søreide 2006: 6). She asserts that "we can hardly conclude that it is right to rank countries in the way it is being done in this index" as "it simplifies a complex phenomenon far too much" (Søreide 2006: 8). Apart from this, Søreide points out that the CPI suffers from a methodological problem far greater than its questionable theoretical foundations: its margin of error is "usually an order of magnitude higher than the precision in the ranking", which means that a country's ranking might be grossly inaccurate and vary greatly on the two ends of the error band (Søreide 2006: 9). The CPI is an important indicator due to its focus on a narrow definition of public-sector

corruption, but one that is considered in this present work as standing on a less solid theoretical and methodological footing than the WGI CC.

3.1.2.2. Resource governance indicators

Apart from indicators of governance that apply to every country, all of resource curse scholarship points toward the conclusion that resource governance is a key determinant of development outcomes in oil-rich countries. It is for this reason that two indicators specifically geared towards resource governance are included in the slate of indicators for this paper, with the aim of determining what resource governance policies are in place in the countries that have delivered the best development outcomes in the analyzed time period.

One of them, the **Resource Governance Index (RGI)** provided by the National Resource Governance Institute, scores countries in terms of the value they realize from their natural resource endowments, the way they manage their resource rents, and factors the WGI into the final score under the label ‘enabling environment’. This indicator provides detailed and comparable information on resource governance in the analyzed countries. The second one, the **Extractive Industries Transparency Initiative (EITI)**, holds governments accountable to a transparency standard on the spending of resource revenues. Although Dobronravin claims that adherence to the EITI is not being enforced with particular effectiveness (Dobronravin 2010: 174), the EITI compliance reports provided by the participating national governments – Kazakhstan, Angola, Gabon, and until 2017, Azerbaijan as well – still render available important information on how the analyzed countries govern resource rents.

3.1.3. Data availability

For a multi-case study based on a broad slate of indicators, data availability is a key concern, especially if dealing with autocracies. In the case of this sample, there are significant data availability challenges especially in regard to Turkmenistan, and, to a lesser extent, in regard to Gabon. This challenge will be mitigated using multiple indicators to measure the same dimension of development, so that even though data is not available on every indicator for every country every year of the analyzed period, enough data is available to draw conclusions on every dimension of development for every analyzed country.

Tables 1-4^{1,2} summarize data availability for the analyzed countries in the dimensions of economic development, economic diversification, social development, and governance.

	AZ	KZ	TM	DZ	AO	GA
<i>PPP GDP/capita</i>	91-24	91-24	91-24	91-24	91-24	91-24
<i>unemployment</i>	91-24	91-24	91-24	91-24	91-24	91-24
<i>gov't debt to GDP</i>	94-24	00-24	97-24	91-24	95-24	91-24
<i>FDI in GDP%</i>	93-24	92-24	92-23	91-23	91-24	91-23
<i>current account</i>	92-24	92-24	92-24	91-24	91-24	91-24

Table 1. Data availability on economic development

	AZ	KZ	TM	DZ	AO	GA
<i>oil rents GDP%</i>	91, 93-21	91-21	91-19	91-21	91-21	91-21
<i>gas rents GDP%</i>	91, 93-21	91-21	91-19	91-21	91-21	91-21
<i>non-HS27 trade³</i>	92-95r, 96-23	92-94r, 95-23	92-23r	92-17, 18-23r	92-03r, 04-23	92r, 93-94, 95r, 96-23
<i>ECI Research</i>	99-23	99-23	N/A	99-23	N/A	05-23
<i>ECI Trade</i>	01-23	98-23	01-23	98-23	98-23	98-23

Table 2. Data availability on economic diversification

	AZ	KZ	TM	DZ	AO	GA
<i>HDI</i>	95-23	91-23	05-23	91-23	99-23	91-23
<i>poverty US\$3.65</i>	00-25	00-25	N/A	00-25	00-25	00-25
<i>neonatal mortality</i>	00-23	00-23	00-23	00-23	00-23	00-23
<i>life expectancy</i>	00-23	00-23	00-23	00-23	00-23	00-23
<i>drinking water</i>	00-22	00-21	00-22	00-22	00-22	00-22
<i>internet</i>	94-23	94-23	99-17	94-23	96-23	96-23
<i>electricity</i>	00-22	00-22	00-22	00-22	00-22	00-22
<i>sanitation</i>	00-19	00-22	00-22	00-22	00-22	00-22
<i>human capital spending GDP%</i>	00-23	00-22	12-23	08-22	00-22	00-22

Table 3. Data availability on social development

	AZ	KZ	TM	DZ	AO	GA
<i>WGI</i>	96-23	96-23	96-23	96-23	96-23	96-23
<i>PFI</i>	13-25	13-25	13-25	13-25	13-25	13-25
<i>CPI</i>	12-24	12-24	12-24	12-24	12-24	12-24
<i>RGI</i>	17, 21	17	17	17	17	17
<i>IPRI</i>	09-13, 15-24	09-13, 15-17, 20-24	N/A	09-24	19-24	13, 15-17, 20-24
<i>EITI</i>	16	24	N/A	N/A	21	24

¹ Country abbreviations according to ISO 3166 country codes. Years are abbreviated according to the following scheme: 91 = 1991, 24 = 2024

² Color legend:

data is available for the entirety of the analyzed period or the indicator's existence, with only minor exceptions
data is unavailable for some of the analyzed period but the available data still allows for drawing conclusions
some data is available, but not sufficient for drawing conclusions
no data is available

³ For time periods marked with 'r', trade data for the given country is only available as a sum of trade flows reported by its trade partners due to the lack of self-reported data.

Table 4. Data availability on governance

Based on Tables 1-4, the following conclusions can be drawn on data availability. First, data on headline economic indicators is readily available for all countries in the sample.

Second, data availability on economic diversification is still rather solid as a large dataset is available for every analyzed country for at least one aspect of the ECI. Turkmenistan's lack of self-reported trade data and the country's cessation to submit appropriate data on the share of the oil & gas industry in its GDP makes it somewhat hard but not impossible to come to conclusions on the country's performance in this regard.

Third, in terms of social development, Turkmenistan's data availability is the spottiest, to the extent that no data is reported on all indicators that could be interpreted in a way that could be politically uncomfortable to the regime. The only possible solution to that problem will be to rely strongly on composite indicators like HDI and life expectancy to draw conclusions on Turkmenistan's social development.

Fourth, as governance data is by definition a political liability to any regime, it is not based on self-reporting but is compiled by the World Bank, RSF and TI, ensuring availability for all analyzed countries throughout the analyzed time period. Therefore, the availability of WGI indicators mitigates the issue presented by Turkmenistan's missing IPRI data. In terms of resource governance, Turkmenistan and Algeria have never been part of the EITI but the RGI reports still provide a comprehensive overview on their resource governance practices.

Thus, the condition that some data be available for all analyzed countries for all aspects of development is met, with data on the economic diversification and social development of Turkmenistan posing the only challenges in this regard.

3.2. Sample

The sample for this multi-case study consists of two groups of three oil-rich developing countries each: a post-Soviet group (Azerbaijan, Kazakhstan, Turkmenistan), and a postcolonial African group (Algeria, Angola, Gabon). The reasons for choosing this method have been laid out in detail in subchapter 3.1. on methodology. It is important to restate at this point that the purpose of cross-regional comparison is to observe how similarly hydrocarbon-oriented economic structures interact with different institutional legacies and geoeconomic realities,

resulting in divergent development outcomes. Following the methodological framework outlined above, this section delineates the rationale for selecting the six cases constituting the sample.

3.2.1. The post-Soviet group

The post-Soviet group consists of the Republic of Azerbaijan (Azerbaijan, ISO-3166 code AZ), the Republic of Kazakhstan (Kazakhstan, ISO-3166 code KZ), and Turkmenistan (ISO-3166 code TM). All three republics have attained their independence from the USSR in December 1991. They were all classed as ‘upper middle-income’ countries by the World Bank in 2023, while on independence in 1991, they were all categorized as ‘lower middle-income’.

According to the latest World Bank data available in the Adjusted Net Savings dataset – coded NY.GDP.PETR.RT.ZS for oil rents and NY.GDP.NGAS.RT.ZS for gas rents –, the oil & gas industry had a share of 29,57% in the GDP of Azerbaijan in 2021 (with oil rents accounting for 20,98% and gas rents for 8,59% of GDP). In the case of Kazakhstan, the oil & gas industry made up 16,88% of the country’s GDP in 2021 (oil rents accounted for 14,84%, gas rents for 2,04%). In the case of Turkmenistan, 2021 data is not available as the World Bank has not received appropriately calculated data from the country after 2019. In 2019, the oil & gas industry made up 13,5% of Turkmenistan’s GDP (with oil rents accounting for 5,85% and gas rents for 7,65%), t.i. just below the 15% threshold set out in the sampling criteria. It is important to note, however, that Kazakhstan was also below the threshold in the same year, and data from previous years show a correlation between the fluctuations of all three countries’ share of oil & gas rents in GDP. Oil & gas rents constituted over 15% of Turkmenistan’s GDP in 2018 (20,07%), 2015 (15,48%), and every single year before that since independence, with the exception of 1998, the year of the financial crisis in Russia, home to the only export pipeline available to Turkmenistan at the time (Pomfret 2019: 139). All of this is to say that it is safe to infer that oil & gas rents in Turkmenistan’s GDP would fall within the 15-30% range set out in the sampling criteria if the country provided accurate data to the World Bank. It is important to note, however, that this is an inference. Thus, all three countries of the post-Soviet group conform to key sampling criteria while their varying governance models and development strategies make it possible to come to conclusions based on their comparison.

All further details on the countries of the post-Soviet group will be provided in the upcoming subchapters dedicated to their analysis. It is important to note, however, the reasons that motivated the choice of these specific countries within the post-Soviet space for the purposes of this present work. In all of the former Soviet Union, the oil & gas industry plays a major part in the economy and exports of only four countries: the three countries of the post-Soviet group and Russia. (Ukraine and Uzbekistan also possess natural gas reserves but don't export them in any noteworthy quantity.) There are multiple reasons for the exclusion of Russia. Firstly, it has been a sanctioned country since 2014, which distorts its development path beyond comparability to all non-sanctioned countries. Secondly, it is a country of far greater population, geographical diversity and hard geopolitical power than any other former republic of the USSR, further reducing its comparability. Thirdly, while the post-Soviet group consists of economically peripheral republics of the former Soviet Union, Russia used to be its economic metropole. The specific relevance of this fact for the purposes of this present work is that while Russia was directly connected to export markets for its oil and gas via pipeline, the three countries of the post-Soviet group had been captive customers of Russian transit services on independence and remained so ever since to varying extents, depending on their diversification efforts that have unfolded starting in the early 2000s.

3.2.2. The postcolonial African group

The postcolonial African group consists of the People's Democratic Republic of Algeria (Algeria, ISO-3166 code DZ), the Republic of Angola (Angola, ISO-3166 code AO), and the Gabonese Republic (Gabon, ISO-3166 code GA). They have attained independence in 1962 from France, in 1975 from Portugal and in 1960 from France, respectively. Algeria and Gabon were classed as 'upper middle-income' countries by the World Bank in 2023, while Angola was classed as 'lower middle-income'; the only country that had been able to attain a change in classification since 1991 was, thus, Algeria, which was also ranked as a 'lower middle-income' country at that time.

According to the latest World Bank data available, the oil & gas industry represented 22,46% of Algeria's GDP in 2021 (with oil rents making up 14,46% and gas rents 8%). In the case of Angola, the total share of the oil & gas industry in GDP is 28,28% (with oil representing the lion share at 28,27% and gas rents accounting for 1,01%). For Gabon, the combined share

of the oil & gas industry in GDP is 15,83% (with oil rents accounting for 15,56% and gas rents adding a negligible 0,27% to GDP). Thus, all three countries of the postcolonial African group conform to key sampling criteria while their varying governance models, contemporary histories, and development strategies make it possible to come to conclusions based on their comparison.

All further details on the countries of the postcolonial African group will be provided in the upcoming subchapters dedicated to their analysis. In selecting countries for the postcolonial African group, Equatorial Guinea and the Republic of Congo were also strong candidates. These two countries are also classified as middle-income and meet the sampling criteria for the oil & gas industry's share in GDP. They are, however, more inconsistent reporters of data than the three countries ultimately selected; Equatorial Guinea is also a latecomer to the oil market, and in the Republic of Congo, conflict and chronic instability remained a structurally relevant limitation to development, especially when compared to Angola, where large-scale violence and political instability ended in 2002. It is important to note that relatively poor data availability is a concern in the case of Turkmenistan as well. Equatorial Guinea, however, is a much more extreme case in which even WGI and RGI data are absent. Oil & gas trade data, the self-reporting of which was stopped by the Equatorial Guinean government in the late 2010s, is harder to reconstruct than in the case of Turkmenistan due to the prevalence of sea-borne trade through offshore terminals and intermediaries which are very difficult to trace. This means that although Equatorial Guinea could be a valuable parallel to Turkmenistan in the postcolonial African group for a variety of governance-related reasons, the gaps in data reporting are simply too large to bridge within the framework of this present study. Omitting Equatorial Guinea significantly improves cross-regional data comparability.

4. Development outcomes in the sample

4.1. Outcomes in economic development

As described in subchapter 3.1.1.1., outcomes in economic development are determined on the basis of PPP gross domestic product (GDP) per capita, changes in unemployment, changes in the government debt-to-GDP ratio, the current account balance as a share of

annual GDP, and the level of inward FDI as a share of annual GDP. Data are provided in Appendix A.

PPP GDP per capita illustrates differences in long-term income growth and acts as a baseline measure of overall economic performance, despite its shortcomings described in subchapter 3.1.1.1. In comparing the groups, it is clear that all post-Soviet countries in the sample have enjoyed much more stable and overall higher growth than the postcolonial countries, with Kazakhstan showing clear positive divergence and Gabon stagnating relative to its initial position. Gabon and Algeria have started from the highest baseline, followed closely by Kazakhstan. Azerbaijan and Turkmenistan have started from a very similar baseline, while Angola sat at the bottom. The latest available data from 2024 show Kazakhstan in a sizable lead at, with Azerbaijan a distant second, Gabon and Turkmenistan almost head to head, then Algeria and finally, Angola. All three post-Soviet countries have sustained recession immediately post-independence but have barely seen recession after seeing their GDP rebound to 1991 levels in the early 2000s. The postcolonial countries have seen few recession years in the early 1990s but spent much of the 2000s in recession – this is especially the case for Gabon. Within the post-Soviet group, Kazakhstan has pulled ahead and Azerbaijan has consolidated its lead over Turkmenistan. Within the postcolonial group, Gabon’s lead over the others has narrowed. Overall, Kazakhstan has grown 468,5%, Azerbaijan 363,57%, Turkmenistan 314,53%, Angola 200,02%, Algeria 132,4% and Gabon 68,57%. The resulting GDP per capita hierarchy reflects stronger growth and lower volatility in the post-Soviet countries, while higher initial income levels in Gabon and Algeria did not translate into sustained growth.

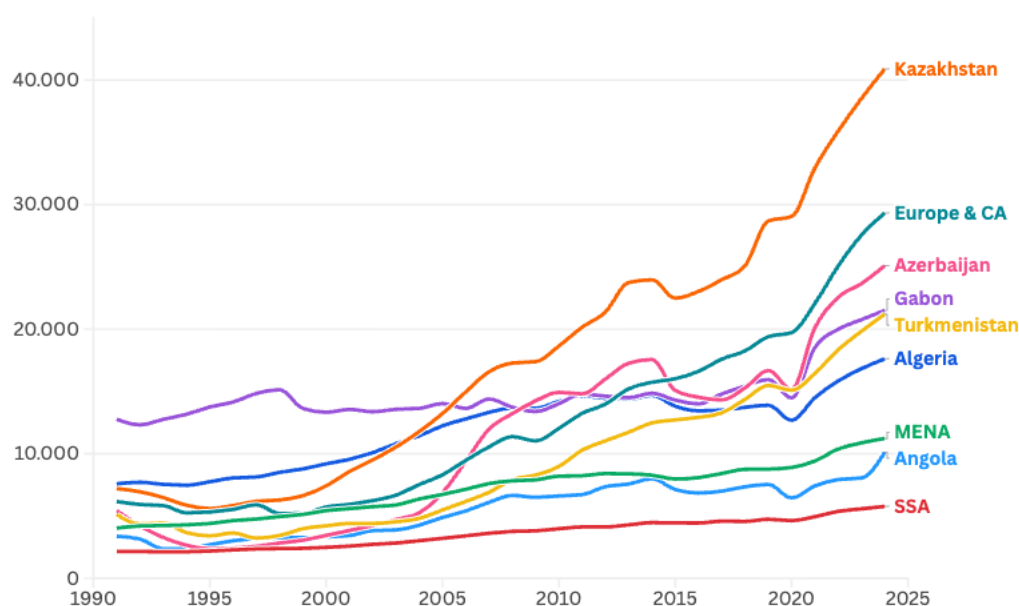


Figure 1. GDP PPP per capita

As regards **unemployment**, a metric of whether economies based around the less labor-intensive hydrocarbon sector are able to absorb excess labor elsewhere, three trends emerge. First, post-Soviet countries move in almost perfect unison: unemployment spikes post-independence, eases throughout the 2000s and stagnates at 4-6% ever since. In the postcolonial group, there are two trends. The first is stagnation with minor changes: Gabon has stagnated at a high level, around 17%, moved upward into the 20% range in the late 2000s and has been stagnating there, while Angola has experienced a slight and sustained post-covid drop from the 17% range where it had stagnated together with Gabon. Algeria is an entirely different story: it has seen highly volatile unemployment that has peaked above 30% in 1995, then a sharp drop to the 10-14% range in the early 2000s, where it hovers since, leading to the lowest unemployment within the postcolonial group. Both the baseline and the current state of affairs are markedly better in the post-Soviet group. No post-Soviet country in the sample has at any point been bested in terms of unemployment by any postcolonial country in the period examined, which suggests greater labor absorption in the post-Soviet cases despite comparable hydrocarbon revenues.

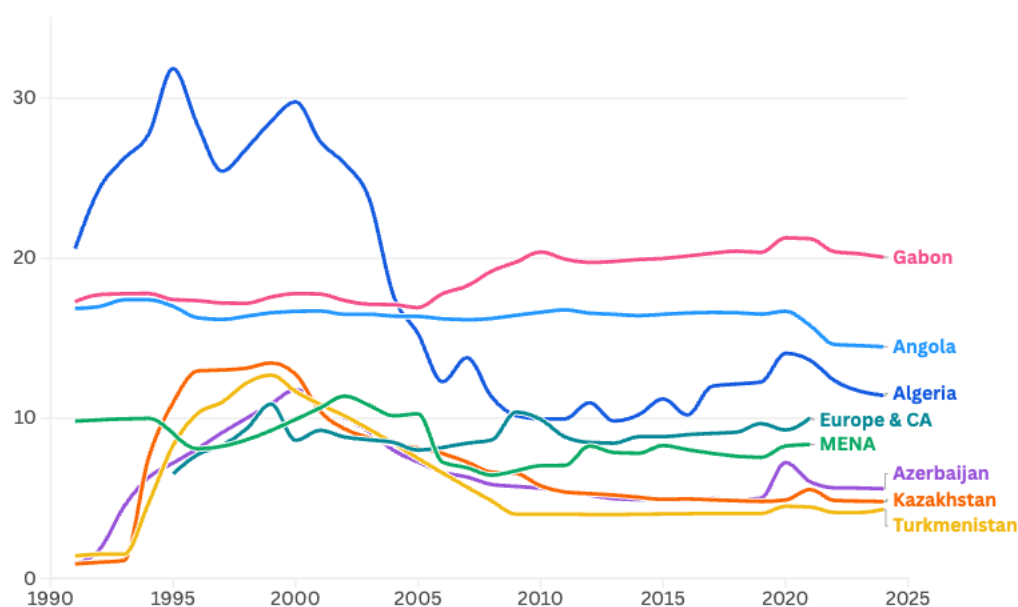


Figure 2. Unemployment

The **government debt-to-GDP ratio** speaks to the ability of governments to smooth out hydrocarbon price volatility and implement adequate savings/stabilization mechanisms instead of relying on costly and potentially unsustainable borrowing in times of low hydrocarbon prices. All post-Soviet countries exhibit versions of one trend, and all postcolonial countries versions of another. In the post-Soviet countries, high government indebtedness is entirely absent from the early 2000s onwards; Turkmenistan shows a peak at 107,92% of GDP in 1998, the year of the Russian financial crisis, but drops sharply afterwards. There is a small post-covid spike in Azerbaijan and Kazakhstan, which have been in the sustainable 20-25% range throughout the 2020s; while Turkmen central government debt all but entirely disappears. In all postcolonial countries, on the other hand, the debt graph is U-shaped, reflecting high levels of indebtedness peaking around or above 100% at the turn of the century, a dramatic drop in the early 2000s, and a trendlike increase in indebtedness again in the late 2010s with the early 2020s showing some easing. Angola shows the highest peaks and the most extreme volatility, while Angola has seen the lowest peak at 55,13% in this new late-2010s round of indebtedness. Current government debt-to-GDP levels in the postcolonial group are 46,2% in Algeria, 62,5% in Angola and 73,4% in Gabon. Post-Soviet countries in the sample exhibit the ability to control government indebtedness effectively while making different decisions: near-complete borrowing abstinence in Turkmenistan, some borrowing in Kazakhstan and Azerbaijan. Postcolonial countries, in turn, are vulnerable to debt spikes given the strong dependence of fiscal revenues on hydrocarbon prices. These spikes are moderate in Algeria and extreme in Gabon and especially Angola.

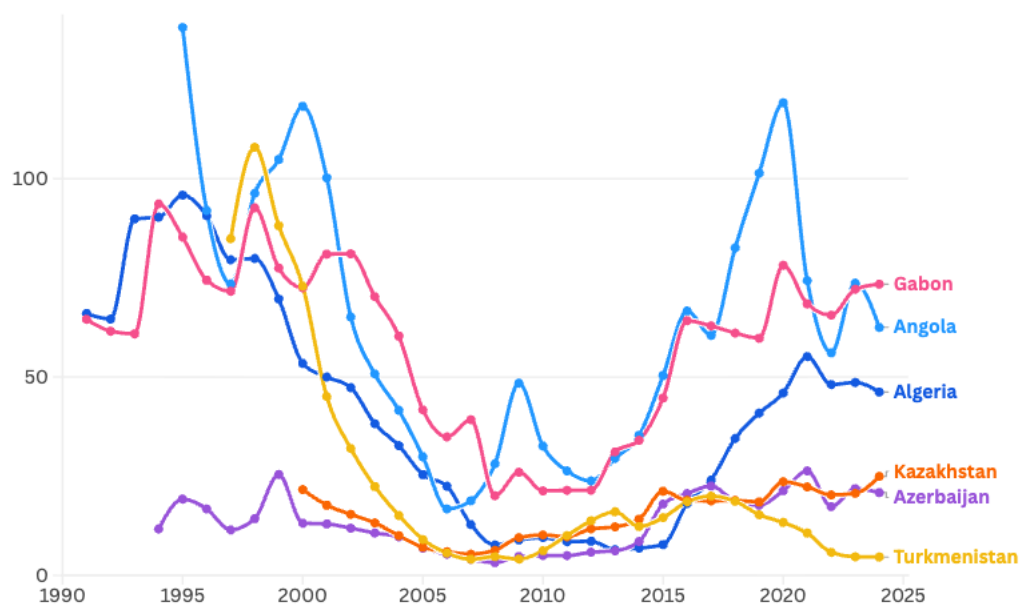


Figure 3. Government debt to GDP

Similarly to the government debt-to-GDP ratio, the **current account balance** reflects the extent to which countries' external balances move in line with hydrocarbon price cycles, but it allows for more precise insights into that position itself, not the channels that absorb its swings (transfers to and from hydrocarbon funds, internal and external borrowing, monetary financing, exchange rate). Current account balances in the sample largely mirror movements in global oil prices due to the dominance of hydrocarbons in export structures. Overall, data tells a story about Kazakhstan and the rest: Kazakhstan's current account balance is the least responsive to swings in the benchmark Brent oil price. Azerbaijan and Angola exhibit major current account surpluses during oil price spikes but manage to mostly avoid current account deficits during price slumps starting in the early 2010s. Gabon exhibits a similar tendency throughout most of the period in question: surpluses are large and roughly in line with oil prices, deficits are rare throughout. Turkmenistan and Algeria's current account balance moves almost in perfect lockstep with the oil price.

Finally in the domain of economic development, **net FDI inflows** measure the extent to which foreign investment is present in the economy. In the case of a panel of oil-producing countries, this usually means the role of foreign capital in resource extraction and related sectors. Data show that despite their higher GDP, FDI as a share of annual GDP is still considerably higher and more consistent in post-Soviet countries than in postcolonial countries. There are no sustained net FDI outflow episodes recorded in any post-Soviet country in the sample,

while Gabon has experienced a longer period of net negative FDI inflows in the mid-1990s and Angola has been stuck in a long but easing negative FDI inflow cycle since 2017. A period of very high FDI has come to an end in the early 2010s in all of the post-Soviet countries and in 2005 in Angola. Meanwhile, Gabon has seen substantial and increasing FDI throughout the 2010s, a trend which seems to have come to an end with the pandemic. Algeria did not experience significant FDI inflows at any point in the period of interest, finishing with an annual average inward FDI of 0,79% of GDP in the period of cross-group comparability (1993-2024). Both Gabon and Angola have seen average annual FDI around 3,5%, where Angola's high initial investment was offset by high net disinvestment on the tail end of the period in question, and Gabon had been able to attract little FDI in the 1990s but has seen more substantial inflows since. Kazakhstan and Turkmenistan both record annual FDI averages of about 6,3% of GDP albeit at markedly different GDP levels. Azerbaijan had attracted the most overall FDI at a yearly average of 12,37%.

Table 5 below summarizes outcomes in economic development across the sample.

	AZ	KZ	TM	DZ	AO	GA
<i>GDP/capita growth</i>	high	very high	high	moderate	moderate	low
<i>growth stability</i>	medium	high	medium	medium	low	low
<i>unemployment</i>	low	low	low	medium	high	very high
<i>gov't debt to GDP</i>	low	low	very low	medium	high	high
<i>current account volatility</i>	high	medium	very high	very high	high	medium
<i>FDI inflows</i>	very high	high	high	very low	medium to negative	medium

Table 5. Outcomes in economic development

4.2. Outcomes in economic diversification

As described in subchapter 3.1.1.2., outcomes in economic diversification are determined on the basis of changes in the share of oil & gas rents in GDP, changes in the share of hydrocarbon exports in total exports, as well as the Economic Complexity Index. Data are provided in Appendix B.

In regard to **oil and gas rents as a share of GDP**, it is important to establish that this share is naturally bound to rise when global oil prices as well as domestic production rise and fall in concordance with these factors as well. The evolution of this metric over time shows, however, whether non-hydrocarbon GDP in oil-producing countries is growing faster or slower than hydrocarbon GDP: the more non-hydrocarbon GDP growth exceeds growth in

hydrocarbon GDP, the less extreme the swings and the lower this share is relative to GDP during oil boom years. It follows from data that while all six economies remain strongly exposed to hydrocarbon price cycles, the relative size of the oil & gas sector declined more visibly in Kazakhstan and Azerbaijan than in the postcolonial group. (Turkmenistan is not classed as an honest reporter by the World Bank from the late 2010s onwards.) All countries except for two reach the absolute peak of oil and gas rents as a share of their GDP around the turn of the century, while Algeria and Azerbaijan peak in 2006 and 2008, the years before the financial crisis. In the 2010s, this share peaks in all countries in either 2011 or 2012, but the 2010s peaks are much lower compared to the 2000s peaks in Angola, Azerbaijan and Kazakhstan, moderately lower in Algeria and closest to the 2000s peak in Gabon. The declining relative importance of oil and gas rents in Kazakhstan, Azerbaijan and Angola therefore reflects expansion of non-hydrocarbon economic activity rather than a reduction in hydrocarbon production.

Concerning the **share of hydrocarbon exports in total goods exports**, which shows to what extent oil-producing countries were able to diversify their economy towards non-hydrocarbon tradables, every country other than Azerbaijan and Turkmenistan has been able to reduce their share between 2004 and 2024, and even Azerbaijan was able to do so between 2014 and 2024. However, compared to 2014, the overall volume of hydrocarbon exports has also decreased in all countries apart from Azerbaijan and Turkmenistan. Total exports have declined compared to 2014 in all three postcolonial countries, most dramatically in Angola and least in Gabon. By contrast, total exports increased in all post-Soviet countries, with Azerbaijan recording the largest increase and Kazakhstan the smallest. This also means that in Kazakhstan between 2014 and 2024, non-hydrocarbon export growth has been able to offset the decrease in hydrocarbon exports; there are no other examples of that in the sample. Non-hydrocarbon export growth has outpaced hydrocarbon export growth between 2014 and 2024 in all countries except for Turkmenistan, which saw a decrease in non-hydrocarbon exports and an increase in hydrocarbon exports. Gabon saw a decrease in both hydrocarbon and non-hydrocarbon exports, but the latter was much less dramatic. Between 2004 and 2024, the three postcolonial countries have registered the most non-hydrocarbon export growth; between 2014 and 2024, the top 3 countries of the sample for non-hydrocarbon export growth were Angola, Algeria and Azerbaijan. It is important to note, however, that not all trade

diversification is created equal, declining hydrocarbon shares reflect different underlying dynamics across the sample. The evolution of non-hydrocarbon exports tells markedly different stories for the six countries of the sample once the commodity groups that constitute the non-hydrocarbon export sector of these countries are factored into the analysis. Subchapter 4.2.1. offers a deeper dive into this crucial piece of context.

Finally, regarding the **Economic Complexity Index**, which assesses countries' exports weighted by the global rarity of the commodities they export, Kazakhstan is the highest and most stable performer. In terms of trade complexity, the post-Soviet group outperforms the postcolonial group in sum, although Azerbaijan is highly volatile and Turkmenistan has started from a very low baseline, with improvements only becoming notable post-2012. Gabon is positioned slightly above, Algeria slightly below the worst post-Soviet performer, Turkmenistan, according to the latest dataset. Algeria has seen recovery from a post-2010 slump in export complexity, while Gabon has maintained a relatively high complexity level compared to its group since 2015. Angola's complexity is the lowest overall without a trend-like increase. The results of the main ECI indicator, trade, are contextualized by the ECI Research indicator (ECI Technology data is not available for a majority of the sample, while ECI Research data is available for every country except Angola and Turkmenistan). Throughout the period of data availability, no country is able to sustainably attain positive ECI Research scores – only Gabon does so in some outlier years – or demonstrate a positive trend. Differences in ECI Research data for 2024 are minor, with scores of all four countries where data is available clustered around -1. None of these countries exhibits research-driven diversification, export structures remain detached from domestic innovation. Taken together, ECI Trade and ECI Research suggest that where diversification did take place in the sample, it has come in the form of expansion into other primary, or at least not innovation-intensive, sectors.

4.2.1. Non-hydrocarbon export diversification

Subchapter 4.2. discusses export diversification only from the perspective of hydrocarbon and non-hydrocarbon exports but doesn't contain the important and wide-ranging findings resulting from the internal structure of non-hydrocarbon exports in the sample, as well as the evolution of this structure. As this is essential context for the assessment of economic diversification, this subchapter provides an overview.

It is true for each of the three post-Soviet countries in the sample that hydrocarbon exports were not dominant in the earliest years of independence but came to dominate the export structure around the turn of the millennium, with buoyant oil prices keeping this dominance intact until then early 2010s. It is after that period that the differences in trade diversification outcomes start to show. It is only in **Kazakhstan** that non-hydrocarbon exports have, for a sustained period, been able to cushion oil-price shocks. Between 2014 and 2024, Kazakhstan has recorded modest growth in total exports despite a contraction (-23,74%) in hydrocarbon exports. An even more favorable trend is that Kazakhstan's current top 3 non-hydrocarbon exports feature a non-extractive, manufactured commodity group: HS72 (iron and steel). The other two exports that have contributed to this structural diversification, which has led to non-hydrocarbon export growth outpacing hydrocarbon export growth in each of the last two decades, were extractive: HS28 (inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes) and HS26 (ores, slag and ash). These commodity groups consistently represent 5-15% of Kazakhstan's total exports. In regard to **Azerbaijan** and **Turkmenistan**, non-hydrocarbon exports exist, but they are much less significant in the total export structure, less concentrated and less persistently present, far away from being able to counteract the volatility of hydrocarbon exports. HS52 (cotton), the dominant export commodity in both countries in the early 1990s, disappears from top exports entirely in Azerbaijan and is relegated to marginality in Turkmenistan. Many, mostly primary, commodity groups appear as the top 2-4 exports in Azerbaijan's export structure, with HS08 (edible fruits and nuts; peel of citrus fruit or melons) having stabilized its role as top 2 since 2015, and HS39 (plastics and articles thereof), a manufactured commodity group, also maintaining a consistent presence among top exports, but the share of these commodity groups in total exports never reaches 2%. However, in Azerbaijan, non-hydrocarbon export growth has at least outpaced hydrocarbon export growth in the 2010s, reflecting ongoing – if not yet successful – diversification efforts. In Turkmenistan, concentration is even more extreme. Data points to periodic but hitherto unsuccessful attempts at import-substituting industrialization with commodity groups relating to the textile industry (HS60, HS61, HS63) cropping up in top positions the early 2000s then disappearing, HS39 playing a similar role throughout the 2010s, and HS31 (fertilizers) appearing in a similar position since the early 2020s. In addition, HS28, another primary commodity group, appears

at the tail end of top non-hydrocarbon exports in the 2020s. As the growth of hydrocarbon exports consistently outpaces the growth of non-hydrocarbon exports in Turkmenistan in each of the last two decades, there is little indication of a diversification drive even forming part of policy, not to speak of it coming to fruition.

In the postcolonial group, **Algeria** shows, similarly to Azerbaijan, clearly present attempts at trade diversification towards secondary-sector exports that has not yet come close to being able to cushion oil price shocks. Two energy-intensive manufactured exports, HS31 and HS72, appear and record fast growth in both of the last two decades in Algeria, alongside HS28. In **Gabon** and **Angola**, diversification seems to be in progress if one looks at the headline non-hydrocarbon share in exports indicator, but analysis of the structure of non-hydrocarbon exports quickly reveals that this apparent diversification is merely an artifact of the periodic increases and contractions in a very small number of other primary and extractive activities that have been present throughout the time period examined: HS71 (natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal and articles thereof; imitation jewellery; coin), that is, overwhelmingly diamonds in Angola; as well as HS26, speak: manganese, and HS44 (wood and articles of wood; wood charcoal) in Gabon. This pseudo-diversification leads the result that, depending on global oil prices, different primary resources alternate as the dominant commodity in Gabon's exports, while in the case of Angola, they don't alter the overwhelming concentration of hydrocarbons in exports.

Across the sample, non-hydrocarbon export diversification therefore takes three distinct forms. Structural diversification is capable of mitigating hydrocarbon volatility in Kazakhstan. In Azerbaijan and Algeria, diversification is also present but insufficient in scale to dampen dependence on hydrocarbon exports. Apparent diversification is driven mostly by other primary commodities in Angola and Gabon. Turkmenistan exhibits persistent concentration in hydrocarbons.

Table 6 below summarizes the outcomes in economic diversification across the sample.

	AZ	KZ	TM	DZ	AO	GA
<i>hydrocarbon dependence</i>	very high, declining	high, declining	extremely high, persistent	very high, declining	extremely high, declining	high, fluctuating
<i>HS27 share, 2004-2024</i>	declined	declined	stagnant	declined	declined	declined

<i>non-hydrocarbon export growth, 2004-2024</i>	relatively weak	relatively strong	relatively weak	strong	strong	strong
<i>non-hydrocarbon export growth, 2014-2024</i>	strong	strong	negative	strong	strong	negative
<i>diversification type and degree of success</i>	structural, low	structural, high	none	structural, low	intra-primary, low	intra-primary, high
<i>ECI Trade level and trend</i>	medium, stagnant	high, stable	medium, improving	medium, stagnant	low, stagnant	medium, improving

Table 6. Outcomes in economic diversification

4.3. Outcomes in social development

As described in subchapter 3.1.1.3., outcomes in social development are determined on the basis of HDI, the share of population living on less than US\$ 3.65 per day, infant mortality, life expectancy at birth, the share of population with access to safe drinking water, the internet, electricity and basic sanitation, as well as government spending on health and education. Data are provided in Appendix C.

HDI, the headline indicator in this regard, shows gradual improvement and relatively limited differences across the sample, with five of the six countries demonstrating synchronous gradual growth and a 2023 score between 0,73 (Gabon) and 0,84 (Kazakhstan). Angola is an outlier, showing fast convergence from 1999 to 2015, then plateauing around a score of 0,6 for the rest of the time period in question. It is worth noting that Gabon has exhibited the slowest growth overall, leading to it being overtaken by both Algeria and Azerbaijan, which experienced faster improvements, around the turn of the millennium. Social outcomes, in sum, converge more than economic structures across the sample.

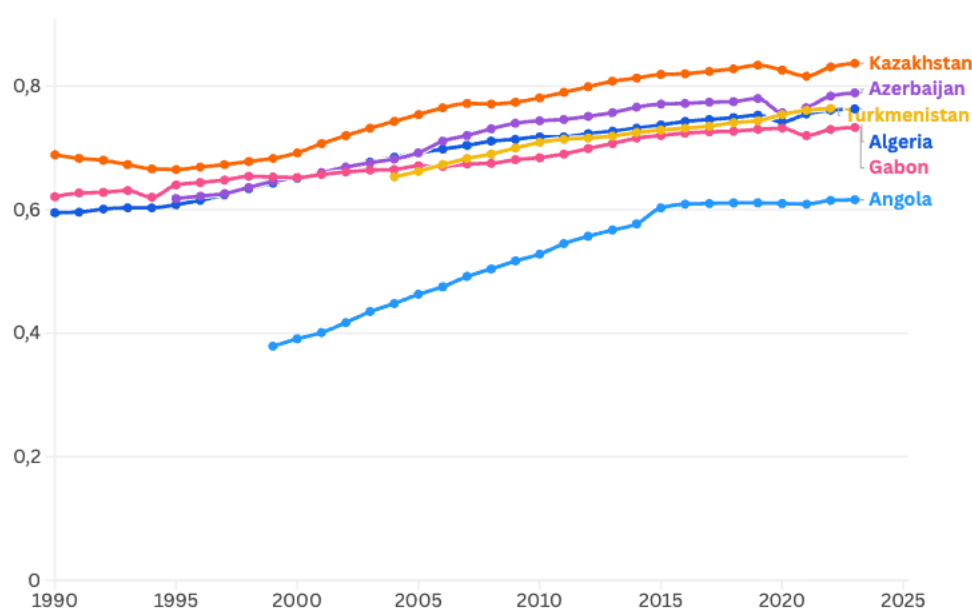


Figure 4. HDI

The **poverty headcount ratio at US\$ 3.65 per day** shows an overall downward trajectory in all countries except Angola. Data is not available for Turkmenistan. Kazakhstan, Azerbaijan and Algeria have virtually eliminated poverty below the US\$ 3.65 per day poverty line by the early 2010s. Angola shows no consistent improvement in the poverty ratio, recording a very strong uptick in poverty throughout the 2010s and plateauing at a very high level, only slightly below 50%, throughout the 2020s. Gabon has managed to diminish the level of poverty to around 10% by 2011 but has essentially plateaued at this level since. Overall it is of interest that poverty in Kazakhstan and Azerbaijan had stood at higher levels in 2000 than in Algeria and Gabon but then has decreased to near-zero levels much more rapidly.

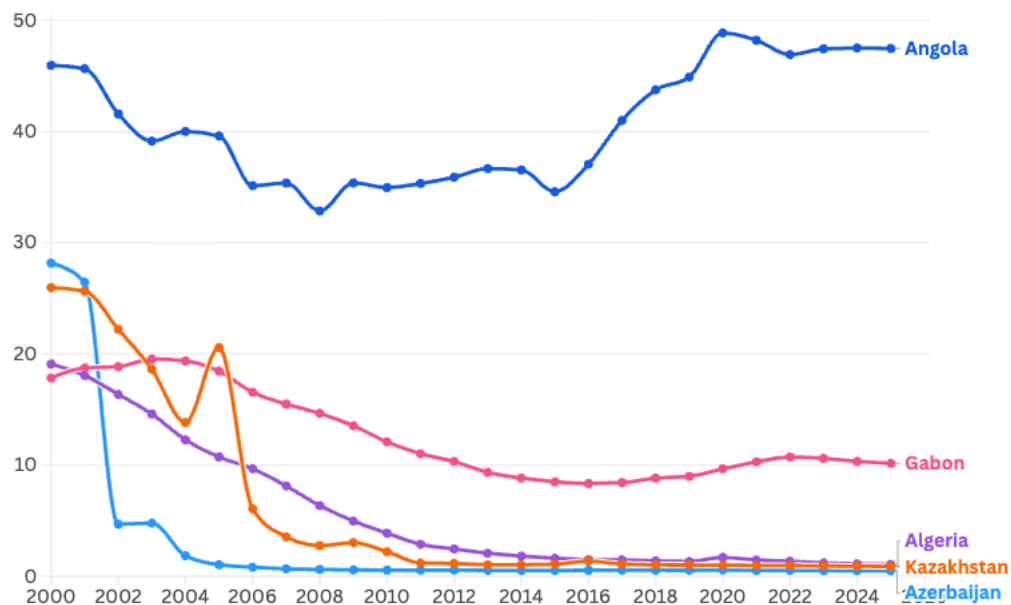


Figure 5. Poverty headcount ratio at US\$ 3.65 per day

Similarly, data on **neonatal mortality per 1000 live births** show an overall downward trend in every country in the sample, although differences are more pronounced than in the case of poverty, suggesting uneven improvements in health outcomes. The downward trend is, however, the least pronounced in Turkmenistan and Algeria, which have been able to bring down neonatal mortality only by about one quarter and one third, respectively. Kazakhstan, the best performer, has brought down neonatal mortality to 4,29 per 1000 live births, achieving a decline of over 80% and achieving a distant best ranking. Azerbaijan, Algeria and Gabon have all achieved neonatal mortality rates around 15 per 1000 live births, while

Turkmenistan's stagnation and Angola's steeper improvement from a very unfavorable starting position have led to the convergence of neonatal mortality rates in these two countries at 22,85 and 25,61 in 2023, respectively.

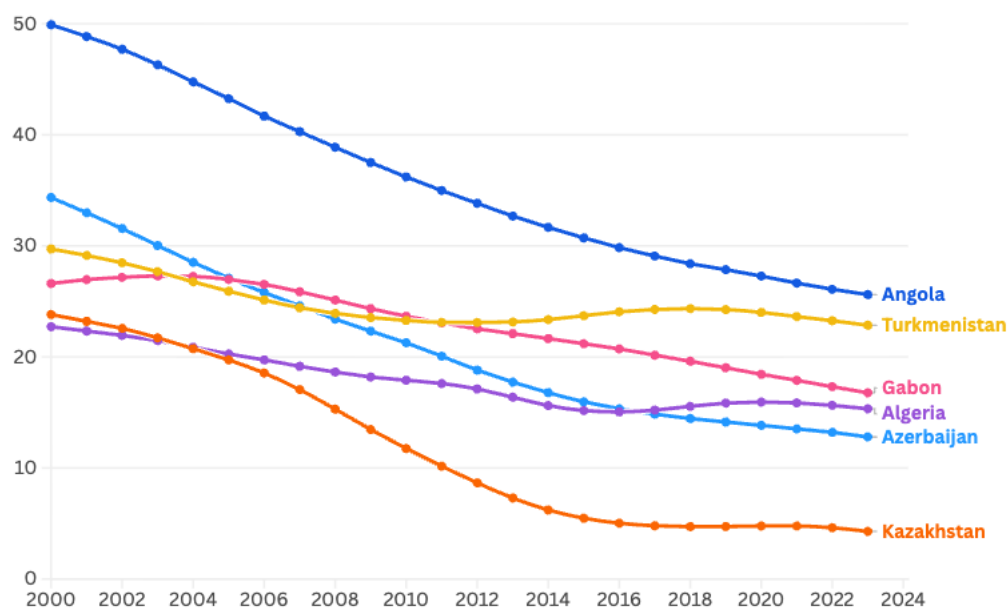


Figure 6. Neonatal mortality rate per 1000 live births

Life expectancy at birth shows a similar pattern to HDI across the sample: steady and gradual growth and a partial convergence of outcomes. Algeria, Azerbaijan and Kazakhstan – the best performers overall – have seen a pronounced pandemic-related slump in the years of covid-19, which has been only marginally present in the dataset of Turkmenistan, Gabon and Angola, the weaker performers. Angola, although still last, has caught up fast from a very low baseline. Turkmenistan appears to have been largely plateauing since the early 2010s, while Azerbaijan and Kazakhstan were able to improve in the same period. Overall, Algeria has consistently ranked first, followed closely by Azerbaijan and Kazakhstan around the life expectancy of about 75 and then Turkmenistan at 70, with the remaining two postcolonial countries trailing: Gabon at 68,34, Angola at 64,62.

Data on **the share of population using at least basic drinking water services** again shows more disparity of outcomes. Algeria, Kazakhstan and Turkmenistan have, in the years since 2000, exhibited gradual improvements from a high baseline toward near-universal coverage. Azerbaijan has caught up to their level, exhibiting a steep upward trend, in the mid-2010s and now ranks just below Turkmenistan, which reports having attained universal coverage. Gabon has largely stagnated, reaching a coverage of 86,93% of the population in 2022

from a 2000 baseline of 80,4%. Angola has started in a completely different league and remains there, as the rate improvement roughly matches the rest of the sample. It had started in 2000 with 41,14% of the population covered and has in 2022 stood at 57,72%, appearing to have plateaued at this low level since the late 2010s.

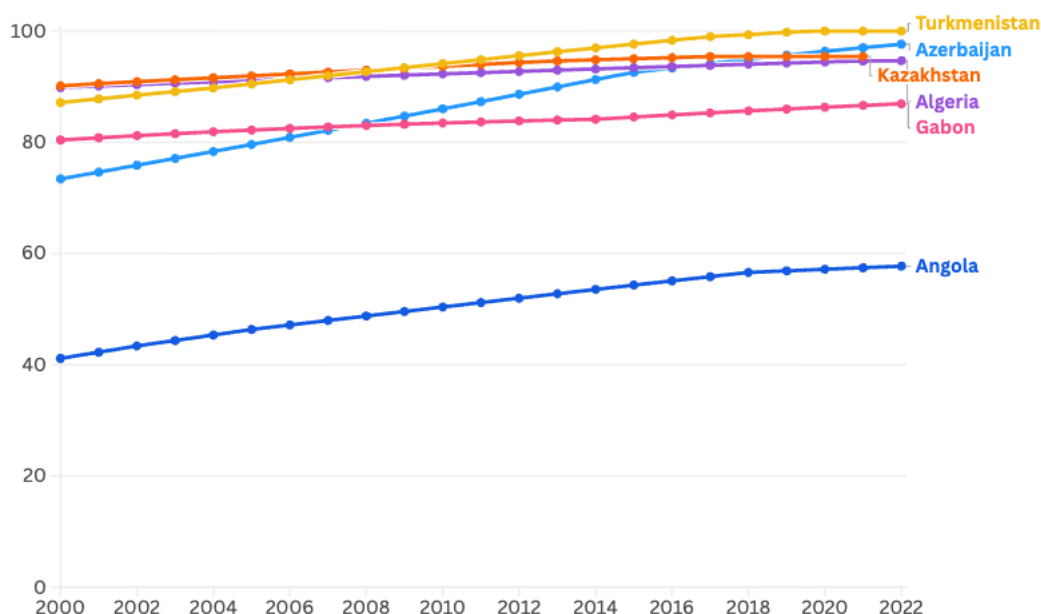


Figure 7. Population using at least basic drinking water services

The **share of population using at least basic sanitation services** paints a more pessimistic picture for the postcolonial countries with all African countries in the sample trailing behind the post-Soviet group, which has attained near-universal coverage. Turkmenistan and Kazakhstan had started from very high baselines that they could improve on slightly, while Azerbaijan has caught up with them by the mid-2010s in the same way as observed in terms of basic drinking water services. Algeria exhibits complete stagnation throughout the period of data availability around 85%, while the rest of the postcolonial group is far behind. They exhibit fast improvements until the early 2010s, when Gabon appears to entirely plateau slightly below 50% coverage, allowing Angola to overtake it in 2017 despite its improvements also being merely incremental with latest data showing 52,18% coverage. Sanitation, even more than drinking water services, shows that infrastructure convergence is weaker across the sample than income or HDI convergence.

The **share of population with access to electricity** paints a picture of four countries stagnating at essentially universal coverage (Azerbaijan, Algeria, Kazakhstan and Turkmenistan). Gabon exhibits strong convergence to near-universal coverage (93,5%) from an upper-intermediate baseline (73,6%). Angola, on the other hand, is still worlds behind: the baseline is that less than a quarter of the population had access to electricity in 2000, and by 2022, still only less half of the population is covered.

The **share of internet users** is an especially valuable metric as it measures countries' response to an infrastructural need that has arisen during the period described in this work. Naturally, all six countries record growth, but they can be divided into three groups. Explosive growth starts in the late 2000s in Kazakhstan and Azerbaijan, which have by 2023 attained an internet penetration of around 90%. Algeria and Gabon experience explosive growth only somewhat later, throughout the 2010s, and attain penetration levels of 76,9% and 71,9%, respectively. Angola and Turkmenistan form the third group, where growth is more modest in the early 2010s and only picks up in the late 2010s, reaching 44,8% in Angola. Data reporting for Turkmenistan stops in 2017 at 21,3%, slightly below Angolan levels. It is known from secondary sources that the Turkmen government is not aiming to make internet access widely and cheaply available, suggesting that no Turkmen catching-up has happened in the period not covered by data, but there is no hard data that would make Turkmenistan's performance comparable post-2017 (Bohr 2016: 56).

Lastly, in terms of **government spending on health and education as a share of GDP**, the general trend for most of the period of interest is stagnation at levels between 3-6%, with Kazakhstan consistently performing at the top of this band, Azerbaijan at the bottom, Angola oscillating between top and bottom, and Turkmenistan and Gabon middling. In 2020 there is a pandemic-related increase in these expenditures – likely towards healthcare – across the sample. Post-pandemic, human capital spending has stayed above 6% in Kazakhstan but decreased to previous levels in Azerbaijan and Angola, or even below pre-pandemic levels in Gabon and Turkmenistan. Algeria is a consistent upward outlier, mostly performing in the 7-11% range.

Table 7 summarizes the outcomes in social development across the sample.

	AZ	KZ	TM	DZ	AO	GA
<i>HDI</i>	high	very high	high	high	medium	high

<i>poverty (USD 3.65/day)</i>	near elimination	near elimination	N/A	near elimination	high, persistent	medium, stagnant
<i>neonatal mortality</i>	low	very low	medium	low	medium	low
<i>life expectancy</i>	high	high	medium	high	low	medium
<i>drinking water access</i>	near universal	near universal	near universal	near universal	low	high
<i>sanitation access</i>	near universal	near universal	near universal	high	low	low
<i>electricity access</i>	near universal	near universal	near universal	near universal	low	high
<i>internet users</i>	near universal	near universal	low, restricted	high	low	high
<i>health and education spending</i>	medium, stagnant	high, increasing	low, decreasing	high, decreasing	low, decreasing	low, decreasing

Table 7. Outcomes in social development

5. Policy architectures in the sample

As established in subchapter 3.1. on methodology, hypothesis-generating comparative MSSD studies – like this present study – endeavor not to trace formal causality, but to narrow down the slate of possible explanations for phenomena that are difficult to causally explain. A good illustration of this issue as it exists specifically within the realm of oil-producing countries is the nexus between mineral wealth, institutions and development outcomes. While much of statistically backed resource curse literature shows a causal link between institutional quality and developmental outcomes in oil-producing countries (see Mehlum et al. 2006: 16, Boschini et al. 2007: 614, Kolstad et al. 2009: 957, i.a.), even this seemingly obvious conclusion opens up at least as many possible causal pathways as it closes. Pauline Jones Luong and Erika Weinthal ponder this exact point after taking note of the mineral wealth-institutions nexus: “Are weak institutions endogenous to mineral wealth? In particular, are weak fiscal regimes, and thus the negative outcomes they are presumed to generate, inevitable in mineral-rich states? If they are not endogenous, what then accounts for the prevalence of weak fiscal regimes in mineral-rich states? And finally, if they are exogenous, under what conditions are mineral-rich states that inherit weak fiscal regimes likely to develop strong ones?” (Jones Luong, Weinthal 2010: 4). Even using the cleanest statistical methods, causally explaining development outcomes is the tallest of orders in objects of research that Ross rightly terms “as large and opaque as a country” (Ross 2012: 24).

This chapter, therefore, describes the policies, policy shifts and governance structures in force in the six countries of the sample, and maps them onto the development outcomes these

countries have achieved. It does not at any point claim causality but operates under the assumption that several of the policies described here might have been relevant for achieving these and not other development outcomes.

5.1. Measurable aspects of governance

As discussed in subchapter 3.1.2. on governance indicators, a slate of governance indicators is used to trace the systems of government and political economy that were in place while the analyzed countries achieved the above development outcomes. In terms of mainline governance indicators, this study takes recourse to the World Bank's Worldwide Governance Indicators (WGI), supplemented by Transparency International's Corruption Perception Index (CPI), as well as the Press Freedom Index (PFI) compiled by Reporters sans frontières. Data are provided in Appendix D.

In regard to the WGI indicators that are usable as **comparative proxy indicators of governance performance**, Kazakhstan and Azerbaijan are clear positive outliers in Government Effectiveness (GE) and Regulatory Quality (RQ) ranked around or above the 50th percentile, while in terms of Control of Corruption (CC), only Kazakhstan is a positive outlier, but still ranks below the 50th percentile at percentile rank 47. While both Kazakhstan and Azerbaijan have been among the top performers of the sample in terms of GE and RQ throughout the period examined, their divergence from the rest of the sample has been clear and increasing since the early 2010s. In terms of CC, Kazakhstan has seen very pronounced improvements post-2017, while Azerbaijan has been a consistently lower mediocre performer. Turkmenistan is consistently last in the entire sample throughout the entire period in all three indicators, save for a short stint in the mid-2010s when it was in penultimate place and outperformed Angola in CC, as well as Angola and Gabon in GE.

The postcolonial countries in the sample show mixed performance. In terms of GE, Angola is a consistently poor performer, Gabon's performance decreases to levels close to Angola in the late 2000s, and Algeria, a clear leader in the postcolonial group throughout the 2000s and 2010s that was on par with Kazakhstan and outperformed Azerbaijan, dropped to levels close to Gabon by the 2020s. RQ tells a story of Gabonese and Algerian backsliding throughout the 2000s, with Angola making gains slowly and inconsistently throughout the same period. The end result is a convergence of postcolonial countries at a low-to-intermediate level

towards the end of the period examined in terms of both GE and RQ. In terms of CC, the postcolonial countries finish in the middle of the sample, far behind Kazakhstan but ahead of Azerbaijan and Turkmenistan. Algeria and Angola deliver similar performance as a result of Angolan improvement and Algerian stagnation, while Gabon finishes in last place within the postcolonial group with volatile overall percentile ranks that have been consistently decreasing since the mid-2010s. Transparency International's CPI findings corroborate the above, although they show less volatility: Kazakhstan is the clear best performer and a strong improver, followed by stagnant Algeria, fast-improving Angola, backsliding Gabon and Azerbaijan, and consistently low-performing Turkmenistan.

As regards the governance indicators that speak to the **position of countries on the democracy-autocracy nexus**, all postcolonial countries of the sample are now classed as freer than the post-Soviet regimes in terms of Voice and Accountability (VA), with Gabon and Algeria showing stagnation post-2000 and Angola improving consistently, holding first place since 2018. Kazakhstan is ranked fourth as a fast improver, Azerbaijan fifth as stagnant at a low level, and Turkmenistan as the consistent worst performer. These results are in concordance with the Press Freedom Index, which shows the same ranking and the same trends.

However, the relative political freedoms granted to citizens by postcolonial regimes don't necessarily translate into Rule of Law (RL), as in that category Kazakhstan and Azerbaijan consistently lead again and show an improving trend, followed by overall stagnant Algeria, backsliding Gabon and slowly improving Angola. Turkmenistan is consistently last again. Turkmenistan finishes first and consistently is among the top performers in terms of Political Stability (PS), however, followed by three convergent, volatile but overall stagnating countries: Kazakhstan, Gabon and Angola. Algeria and Azerbaijan are consistent low performers.

Table 8 below summarizes measurable governance structures in the countries of the sample and categorizes them using Eifert et al.'s classification system.

	AZ	KZ	TM	DZ	AO	GA
<i>Government performance</i>	high GE high RQ low CC	high GE high RQ high CC	low GE low RQ low CC	medium GE low RQ medium CC	low GE medium RQ medium CC	medium GE medium RQ low CC
<i>Position on democracy-autocracy nexus</i>	low VA medium RL low PS	medium VA high RL medium PS	low VA low RL medium PS	medium VA medium RL low PS	medium VA low RL medium PS	medium VA medium RL medium PS
<i>Eifert et al. classification</i>	Paternalistic autocracy	Reformist autocracy	Paternalistic autocracy	Paternalistic autocracy	Predatory autocracy	Paternalistic autocracy

Table 8.⁴ Measurable aspects of governance

Eifert et al.'s political economy classification system of oil producers was introduced in detail in subchapter 2.1.2.4. on certain forms of democracy and autocracy as causes of the resource curse. More details on the policy architectures of each country in the sample will be provided in the following subchapters detailing their policy trajectories; this section serves merely to justify the above classification in each case.

There has been no change in government in five of the six countries of the sample since 2000, and this continuity of ruling coalitions narrows down the categories that are relevant to this sample from Eifert et al.'s classification system. Azerbaijan's President, Ilham Aliyev, had succeeded his father in 2003. Kazakhstan's President Kassym-Jomart Tokayev assumed office in 2019 as the candidate of former President Nursultan Nazarbayev's Nur Otan party as Nazarbayev's hand-picked successor. Turkmen President Serdar Berdimuhamedow is the son of former President Gurbanguly Berdimuhamedow, who himself was first President Saparmurat Niyazov's second-in-command until Niyazov's death. In Algeria, incumbent President Abdelmajid Tebboune was supported by long-time President Abdelaziz Bouteflika's National Liberation Front party. The People's Movement for the Liberation of Angola (MPLA) has held central power in Angola since 1975. The only country in the sample where a rupture had happened was Gabon, where a military coup has removed long-serving President Ali Bongo, the son of Omar Bongo who ruled the country from 1967 to 2009, from power and brought in incumbent President Brice Oligui Nguema. But even in Gabon, that change did not fundamentally alter the way politics works in Gabon as evidenced by stagnant governance indicators, save for an uptick recorded in the Press Freedom Index. This is not a normative evaluation of the very diverse systems in place in these countries – it is merely proof that due to the absence of competitive political systems that would result in alternation of power, out of only Eifert et al.'s three kinds of autocracy are relevant in assessing them: reformist, paternalistic, or predatory. The distinction between these three types is not clear-cut; all countries in the sample have implemented reforms to some extent, the ruling elite exhibits some predatory

⁴ **Legend.** “High”, “medium” and “low” rankings determined in relative terms within the sample, with “high” only awarded if there are upward outliers. GE, RQ: high 49+, medium 19-49, low 1-19. CC: high 39+, medium 19-39, low 1-19. VA: medium 19+, low 1-19. RL: high 30+, medium 20-30, low 1-20. PS: medium 30+, low 1-30.

dynamics in all of them, and all provide some public goods services in a paternalistic way. The deciding factor in their classification is the predominance of reformist, paternalistic, or predatory elements in the political economy of each regime.

This present work classifies Kazakhstan as the only overall reformist autocracy in the sample. Azerbaijan, Algeria and Gabon are clear examples of paternalistic autocracy, while Turkmenistan and Angola teeter on the edge between the paternalistic and predatory categories, exhibiting attributes of both. The political economies of Turkmenistan and Angola differ in their mechanisms of rent distribution and state capacity to an extent that classifying them in the same category would obscure important differences. Out of these two, Turkmenistan has been classed as rather paternalistic and Angola as rather predatory.

As evidenced by literature, Kazakhstan was an early and diligent reformer post-independence in hopes of attracting as much FDI as possible (Esanov et al. 2017: 46). When Kazakhstan's leadership encountered resistance to reforms within the government, President Nazarbayev chose to employ authoritarian methods to implement reforms, not to defer them (Pomfret 2019: 73). Reform momentum has not abated in the 2000s, when a commitment to human capital development became apparent (Pomfret 2022: 297). Kazakhstan's response to the 2008 financial crisis, the forceful government intervention in the economy that, however, did not lead to the reentrenchment of state ownership, demonstrates a long policy horizon as well as dynamism, responsibility and creativity in policymaking (Ahmadov 2019: 169). These factors have led this author to conclude that the reformist element predominates in the Kazakh autocracy, without prejudice to the quality and result of such reforms.

As regards the paternalistic autocracies, Azerbaijan can also be classified as an early reformer that was courting FDI (Esanov et al. 2017: 46); however, the pace and extent of reforms have abated in the 2000s, and the role of the state in the economy has increased markedly, especially in providing targeted economic and social assistance (Jones Luong, Weinthal 2010: 242). Azerbaijan therefore is the most reformist of the paternalistic autocracies in the sample, but overall, still a paternalistic autocracy. Algeria is the clearest example of a paternalistic autocracy in the sample, which distributes oil rents to its population in the form of social assistance and subsidies, but refrains from substantial economic reform and does not court FDI (Lowi 2009: 123). Gabon also fits the paternalistic autocracy pattern with its

sluggish reforms and constant cycles of often unsustainable fiscal expansion to fund a high wage bill, social assistance, and inefficient public companies (Gueye 2012: 206).

In terms of the edge cases, the international reputation of Turkmenistan as a brutally repressive authoritarian regime (Pomfret 2019: 132), its failure in human capital formation and economic reforms (Pomfret 2019: 135), as well as its inefficient conspicuous investment (Pomfret 2019: 130), would warrant classification as a predatory autocracy. However, it is important to note that Turkmenistan's relatively small population makes it possible for a rentier system to function (Bohr 2016: 16). Plentiful rents allowed it to keep operating a largely unreformed economy and channel subsidies to the population (Rousselot 2014: 140). This is a factor that distinguishes it from Angola, a state in which only the extractive core, the national oil company Sonangol, functions efficiently and the state institutions tasked with providing public goods and services largely atrophy (Corkin 2016: 28). Therefore, the regime of Angola still is the more predatory of the two autocracies despite allowing much more political freedoms than the regime of Turkmenistan. The long history of the Angolan central government keeping its power through civil war contributes to this classification, again underscoring the point that the Eifert et al. classification relates to the political economy, not the desirability or success, of regimes in oil-producing countries.

5.2. Policy architectures in the post-Soviet countries

There are many aspects to post-Soviet economic reality that make comparison among oil-rich countries of the region a worthy endeavor in development economics. As Jones Luong and Weinthal assert, comparability of development trajectories is ensured by the “universally weak institutions”, chief among them fiscal regimes, that all Soviet successor states inherited; and their identical time of independence as the starting point of sovereign development policy (Jones Luong, Weinthal 2010: 20-21).

The Soviet past bestowed a multifaceted heritage on all post-Soviet countries in the sample. First and foremost, primary goods producers in the Soviet periphery have for decades been subjected to an intra-Soviet economic arrangement in which their primary goods were traded at prices lower than on the world market, but they received ample development subsidies in return. The balance of this bargain, in which peripheral primary goods producers subsidized the rest of the Union's economy but the center subsidized their development, was

different for each country involved: Esanov et al. calculate that Turkmenistan was a net donor in this arrangement, Azerbaijan a net beneficiary, and Kazakhstan neither benefited nor lost much (Esanov et al. 2017: 48). The net position of these countries in this intra-Soviet bargain was meaningful in terms of the benefits each country could reap from transitioning to world market prices for its hydrocarbon exports. To the extent that this was at all possible, that is – the countries in the sample were massively impacted by the transport curse: neither one had direct pipeline access to the most profitable markets for hydrocarbons, and all of them are effectively landlocked in terms of access to the global energy market (Dobronravin 2010: 149-150). The sea they did have access to, the Caspian Sea, started out as more of a source of conflict between the littoral countries than a conduit of connectivity (Peyrouse 2015: 174). All of the countries have since then, to different extents, broken free from their status as Russia's captive hydrocarbons producers (Laruelle, Peyrouse 2015: 18).

Secondly, all post-Soviet economies had to begin their development journey by mastering the onerous task of structural transition. The challenge of transitioning from a planned economy to market rules was exacerbated by the complex system of intra-Soviet linkages, distorted price signals, implicit subsidies and value chains that unraveled after the formerly unified Soviet economic space became segmented by separate currencies and customs regimes. This process has resulted in a structurally weak industrial sector in Central Asia, even in the most industrialized former republics, despite the strides made towards industrialization in the Soviet period (Laruelle, Peyrouse 2015: 264).

It is well-documented in the literature that the Dutch disease, one of the key symptoms of the resource curse detailed in subchapter 2.1.1.1., impacts oil-rich economies that are in a state of structural transition in an aggravated manner. In countering the Dutch disease, these economies do not merely have to ensure that the real exchange rate does not appreciate in a way that would harm the competitiveness of existing industries. They must ensure that the competitiveness of said industries *increases* while managing the macrofinancial consequences of an oil boom, lest their economies become entirely dependent on the hydrocarbons sector (Wakeman-Linn et al. 2003: 350). Furthermore, they must do so without a well-developed financial system that could facilitate the channeling of oil revenues into non-oil sectors that require investment, without the level of monetization that would characterize a trusted banking system, and without the full functioning of the mechanisms of a market economy

(Rosenberg, Saavalainen 1998: 24). Auty contends that a clear recipe for dealing with the Dutch disease in transition economies exists: sterilization of mineral windfalls using offshore funds, cushioning the budget from possible oil busts using stabilization funds, and investing resource rents into alternative wealth-producing assets – however, economic policymaking in the former Soviet union has been captured by patronage networks, which may have constrained the realization of this recipe (Auty 2017: 29). Ostrowski points out that this capture has been facilitated by the neoliberal momentum that coincided with the dissolution of the USSR, as the fast liberalization of prices, encouraged by international financial institutions, has opened up previously unimaginable rents to the rulers of these new countries (Ostrowski 2011: 286).

The Soviet past should not be viewed, however, exclusively in the context of the burdens it imposed on post-Soviet countries. As Eric W. Sievers points out, post-Soviet countries also benefited from the Soviet legacy in several important ways. In terms of healthcare and diseases, post-Soviet countries were substantially ahead of the developing world; they inherited almost universal literacy and a robust public education system; and high-level scientific research institutions (Sievers 2003: 51-64). The quality of this legacy varied among post-Soviet countries, as did the way the extent to which they managed to steward it – but in terms of human capital, the Soviet past of Azerbaijan, Kazakhstan and Turkmenistan can be considered a boon, especially in comparison to postcolonial African countries. It is not a coincidence that contrary to the findings of resource curse literature overall, Brunnschweiler has identified a positive growth effect of oil production in former Soviet economies (Brunnschweiler 2009: 15). Countries that possess natural resource endowments and high human capital can be considered winners of what Ostrowski terms the “neoliberal casino” (Ostrowski 2011: 286). A corollary is, of course, that the human capital flight that these countries suffered in the early 1990s with the emigration of Soviet citizens of European descent was perhaps even more consequential for these countries than the flight of financial capital (Sievers 2003: 66).

Lastly, the post-Soviet countries in the sample differ in the ownership structure they have established for their hydrocarbon wealth. Jones Luong and Weinthal, as well as Esanov et al., contend that the pace of economic reform, development strategy, and thereby development outcomes depend on the ownership structure of countries’ oil wealth (Esanov et al. 2017: 46; Jones Luong, Weinthal 2010: 18). Jones Luong and Weinthal propose that “all state leaders

are sovereignty maximizers” who prefer to retain state ownership and control over their countries’ hydrocarbon wealth (Jones Luong, Weinthal 2001: 373). Therefore, between the four possible hydrocarbon ownership models, the order of preference is: 1) state ownership with state control, 2) state ownership without state control, 3) private domestic ownership, 4) private foreign ownership, with governments retaining as much control as possible unless circumstances, t.i. the lack of non-hydrocarbon rent sources that make fast exploitation of hydrocarbon resources inevitable, force them to relinquish it (Jones Luong, Weinthal 2010: 374). In some post-Soviet countries of the sample, the alternative rent source available at the time of independence was cotton. The pace of reform and willingness to relinquish state control of hydrocarbons to hasten exploitation scaled with the availability of cotton rents: they were the most readily available at scale in Turkmenistan, somewhat less available for Azerbaijan, and essentially unavailable for Kazakhstan. Their economic development trajectories are consistent with Jones Luong and Weinthal’s assertion that “states that face the greatest challenges to their rule are compelled to adopt their least preferred strategies in the short term, which may in fact be the best economic policies in the long term”. (Jones Luong, Weinthal 2001: 395).

5.2.1. Azerbaijan

5.2.1.1. Development outcomes

In terms of development outcomes, Azerbaijan has enjoyed high GDP per capita growth, although with medium stability. It has managed to reduce unemployment to low levels, maintains low government debt relative to GDP, and has attracted very high levels of FDI – although its current account balance has been very volatile. Its economic structure is characterized by very high but declining hydrocarbon dependence over the last 20 years. Non-HS27 export growth has been weak 2004 through 2014, but strong between 2014 and 2024. The diversification that has materialized in Azerbaijan’s exports has been structural but remains at a low level. Azerbaijan’s economic complexity stagnates at a medium level.

In relative terms within the sample, Azerbaijan has reached favorable social outcomes. The country’s HDI is high, poverty at \$3.65 per day has been nearly eliminated, neonatal mortality is low, life expectancy is high, access to drinking water, elementary sanitation, electricity

and the internet is nearly universal. However, government spending on health and education is stagnating at a medium level.

5.2.1.2. Initial conditions

The territory of modern-day Azerbaijan can be considered the cradle of the Russian oil industry, with a very significant oil processing operation already in place in the late 19th century, with the participation of foreign oil companies – most notably, that of the Nobel brothers (Travin, Marganiya 2010: 24; Jones Luong, Weinthal 2010: 221). Independent Azerbaijan thus inherited a functioning, albeit decaying, oil and gas industry from the Soviet Union (Wakeman-Linn et al. 2003: 341). It did, however, suffer from the transport curse as its key oil export pipeline ran through Russia (Dobronravin 2010: 163). As a former industrial republic of the Soviet Union that was also rich in hydrocarbons, Azerbaijan was prone to an aggravated form of the Dutch disease: it had to simultaneously develop the hydrocarbons sector and restructure large and inefficient Soviet-era industrial enterprises to maintain a somewhat diverse export portfolio, which made real exchange rate appreciation resulting from buoyant hydrocarbon exports doubly menacing (Wakeman-Linn et al. 2003: 350).

5.2.1.3. Governance

Azerbaijan's initial reforms, as documented by the European Bank for Reconstruction and Development, have been selective: the tax, price, trade, property and currency regimes were liberalized fast in the early 1990s (EBRD 1994: 18), but structural reforms, as well as large-scale privatization, remained sluggish (EBRD 1996: 139, EBRD 1997: 152). The state retained control over major sectors of the economy. Reforms were, however, necessary to garner foreign investment. The seminal investment deal of Azerbaijan's early years was the agreement signed with a consortium led by British Petroleum for the development of the Azeri-Chirag-Guneshli (ACG) oil field, signed in 1994, as well as another one for the Shah Deniz gas field (Dobronravin 2010: 154).

The EBRD considers small-scale privatization to have been completed by 2002 (EBRD 2002: 20), but cautions about laggard development of the financial sector as well as a largely unreformed energy sector throughout the 2000s (EBRD 2004: 98, EBRD 2005: 102). EBRD complaints about the government's delay in privatizing the International Bank of Azerbaijan

(IBA), the largest bank in the country, persist in the 2010s, and the long-planned privatization itself still has not happened (EBRD 2011: 115, EBRD 2012: 98, EBRD 2013, EBRD 2017). The on-and-off nature of the IBA privatization process reflects a core underlying trend of Azerbaijani governance: after fast initial reforms, Azerbaijan has settled into a structure in which the state still retains control over key aspects of Azerbaijan's economy, and it is not a government priority to make major changes to this fundamentally paternalistic structure.

Data clearly shows that the early reforms aimed at attracting FDI have served this purpose, as Azerbaijan experienced very high FDI inflows in the late 1990s and throughout the 2000s. Esanov et al. caution that in the 1990s, the availability of resource rents seemed to correlate with the pace of reforms in post-Soviet states: those states in which cotton rents were readily available for distribution (Turkmenistan and Uzbekistan) were sluggish reformers, while those who needed to attract FDI to exploit their oil rents (Azerbaijan and Kazakhstan) reformed fast (Esanov et al. 2017: 46). After these fast reforms have indeed attracted FDI and turned Azerbaijan's oil endowment into rents, both data and the EBRD reports show limited further efforts to implement structural institutional reforms, diversify into non-hydrocarbon tradables, or broaden the non-hydrocarbon tax base. Jones Luong and Weinthal also point to high societal expectations of the government, possibly a Soviet legacy, as one of the key reasons for Azerbaijan's difficulties in levying non-hydrocarbon taxes as well as optimizing its "bloated and inefficient" welfare system (Jones Luong, Weinthal 2010: 220). The shadow economy remains large and tax enforcement weak (Jones Luong, Weinthal 2010: 232).

5.2.1.4. Resource revenue management

The 2017 Resource Governance Index (RGI), compiled by the National Resource Governance Institute, shows Azerbaijan as the second best manager of its resource revenues overall in the sample behind Kazakhstan, with a composite score of 47 (on a scale of 100). It is third in the sample with a score of 49 in terms of value realization, with relative weaknesses in licensing and local impact, but second place in taxation and the best score in the sample in terms of state-owned enterprises. As regards revenue management, Azerbaijan is third in the sample (slightly behind Gabon) with a score of 43. Its relatively weak fourth place in national budgeting is complemented by the second-best score in the sample for Azerbaijan's sovereign wealth fund. For context, Azerbaijan is the only country in the sample for which the 2021 RGI

is also available. It shows an overall improvement in the composite score, due mostly to massive improvements in both subcomponents of the revenue management component. This improvement coincides, however, with a drop in all subcomponents of the value realization component score. The overall improvement in RGI between 2017 and 2021, taken together with the stronger non-hydrocarbon export growth of the 2014-2024 period, suggests that the quality of governance and economic policies has improved in the last decade.

Jones Luong and Weinthal establish Azerbaijan's oil ownership regime as state ownership without state control (Jones Luong, Weinthal 2010: 220). This ownership model implies that "the state must own the rights to develop the majority of petroleum deposits and hold the majority of shares (>50 percent) in the petroleum sector", with foreign investors allowed to participate through production-sharing agreements (PSAs), "which grant them significant managerial and operational control" (Jones Luong, Weinthal 2010: 7).

Hydrocarbon revenues started to play a dominant role in Azerbaijan's budget in the late 1990s, as evidenced by the explosive growth of HS27 exports. As Jones Luong and Weinthal note, Azerbaijan's handling of these revenues was characterized by a standalone, unique tax regime for every single investor in the hydrocarbon sector, as well as stability: once the regime was agreed upon with a given international oil company (IOC), the rules didn't change (Jones Luong, Weinthal: 226-227). This was not the case, however, for SOCAR, Azerbaijan's national oil company (NOC). SOCAR, which is a partner in almost all of Azerbaijan's PSAs and a major producer of oil itself, has essentially been tasked with financing the politically expedient quasi-fiscal activities and implicit subsidies that the IOCs weren't burdened with (Jones Luong, Weinthal 224-226).

As outlined in subchapter 2.1.3.1., stabilization and wealth funds are a key policy recommendation devised by resource curse theory to cushion oil-producing economies against the detrimental effects of oil booms and busts, as well as to ensure prudent spending of oil revenue. Azerbaijan has had a non-renewables fund, SOFAZ, since 1999. Wakeman-Linn et al. establish that SOFAZ is primarily a savings, not a stabilization, fund: it accumulates oil revenue in foreign currency, shielding the economy from excessive real exchange rate appreciation which would be detrimental to the non-hydrocarbon sectors of the economy; and it is, by its statute, supposed to be a source of spending for building out the infrastructure necessary for non-hydrocarbon development (Wakeman-Linn et al. 2003: 351). Jones Luong and Weinthal

judge SOFAZ to have attained mixed success: due to the aforementioned volatility of government claims on SOCAR, the fund has largely accumulated revenue from the IOCs, and the spending of its wealth has proven to be non-transparent and arbitrary as it's subject solely to presidential control (Jones Luong, Weinthal 2010: 239-240).

5.2.1.5. Industrial and diversification strategy

All of the above foreshadows the outlines of the Azerbaijani model. In the hydrocarbon sector, the country has established a business-friendly environment to attract and retain FDI by IOCs, which it has levied high but stable taxes on. The government has, however, via SOCAR retained control of a significant enough share of hydrocarbon rents that it could impose politically expedient but inefficient quasi-fiscal burdens on the NOC without ruining the business environment for the IOCs. It has established a savings fund, SOFAZ, to stabilize oil revenues and prevent real exchange rate appreciation, but it has not subjected savings fund spending to hard political constraints. The non-hydrocarbon sector has enjoyed the macro-financial stability implied by the above arrangement as well as early liberalization of key aspects of the economy (prices, ownership, access to foreign exchange), but it has not undergone major structural reform nor been subjected to aptly enforced, substantive taxation.

This is not to say that Azerbaijan's government had done nothing in the way of support for diversification or improving economic institutions in the country, especially during periods of low oil prices. Around the 2008 financial crisis, the EBRD notes major simplifications in business registration, licensing, and the digitalization of the tax administration in 2008 (EBRD 2008: 100), significant cuts in personal income and corporate profit taxes in 2009 (EBRD 2009: 140), as well as ample government spending that resulted in non-oil growth in the early 2010s (EBRD 2012: 98; EBRD 2014). The EBRD noted that while diversification of the economy is sluggish, the government's diversification drive mostly consisted of "pursuing government-sponsored infrastructure projects linked to the use of oil wealth, as well as directly intervening to stimulate product diversification", policies the Bank was skeptical of (EBRD 2014). The country saw further tax cuts, aimed specifically at micro, small and medium sized enterprises, in 2019 (EBRD 2019).

The government has also taken steps to free Azerbaijan of the transport curse. Construction of the Baku-Tbilisi-Ceyhan (BTC) oil pipeline to the Turkish port of Ceyhan through

Georgia was launched in 2003 and finished in 2006 (EBRD 2003: 117). The early 2010s saw significant regional railway modernization projects (EBRD 2011: 115, EBRD 2015). Construction of the Port of Baku in the city of Alat, the largest port in the Caspian region, was announced for tender in 2012 and finished in 2018 (EBRD 2012: 98). The agreement on the construction of the TANAP gas pipeline through Türkiye was ratified in 2012 and completed in 2018 as well (EBRD 2013); it became linked with the Trans-Adriatic Pipeline in 2019, allowing for direct pipeline exports of Azerbaijani gas to Europe (EBRD 2020). Deficiencies in economic institutions notwithstanding, these state-led investments have left Azerbaijan in a much more advantageous position in terms of the diversity of possible hydrocarbon export destinations, which will prove to be a boon in a European context marked by increased diversification away from Russia.

5.2.2. Kazakhstan

5.2.2.1. Development outcomes

Judging by most indicators of development, Kazakhstan is the clear positive outlier in the sample. It has enjoyed very high and stable GDP growth while maintaining low unemployment and debt-to-GDP levels, as well as keeping a relatively stable current account balance. FDI inflows into the Kazakh economy have been high. Kazakhstan's dependence on hydrocarbons is high but declining, as evidenced by the decreasing share of HS27 exports between 2004 and 2024. Non-hydrocarbon export growth has been strong in the 2014-2024 period and relatively strong between 2004 and 2014 as well. In terms of tradable goods, Kazakhstan has achieved the highest degree of structural diversification in the sample. Its ECI level is high and stable when compared to the rest of the sample.

In terms of social development outcomes, Kazakhstan also posts the best results within the sample. It has achieved very high HDI, nearly eliminated poverty at \$3.65/day as well as neonatal mortality. Life expectancy in Kazakhstan is high, and access to drinking water, elementary sanitation, electricity, and the internet are near universal. Government spending on health and education is high compared to the rest of the sample and shows an increasing trend.

5.2.2.2. Initial conditions

The key feature of the Kazakh economy within the Soviet Union was connectivity: rather than forming a compact economy on the republic level, every segment of the diverse and industrialized Kazakh economy was intertwined with other parts of the Soviet economy; Northern Kazakhstan's industry depended on that of Southern Siberia, while Southern Kazakhstan's was fueled by Uzbekistan's energy sources (Olcott 2010: 129). Industry was concentrated in one-company towns that produced intermediate goods, t.i. the other elements of their value chain lay outside their region (Ostrowski 2011: 293). A corollary of this economic structure was a lack of republican sovereignty over industrial development: most of the intermediate industries were governed on the all-Union level, with the upside being the presence of relatively advanced industries (mostly metallurgy and chemical industry), as well as functioning mining operations, physically on the territory of the Kazakh SSR (Dobronravin 2010: 155). In the case of hydrocarbons, this translated to very limited oil being extracted in Kazakhstan without the local availability of oil-supporting industries (Ostrowski 2010: 67). The strong intra-Soviet links of the Kazakh economy compounded the aggravated Dutch disease described above in subchapter 5.2.1.2. These links were the key reason Kazakhstan decided to stay in the ruble zone after the fall of the Soviet Union, which has led to a complex economic crisis in 1993: Kazakhstan had to abruptly shock-liberalize prices after Russia had done so, then it lost its reliable supply of cash as Russia withdrew rubles emitted during the Soviet era from circulation, and finally it experienced hyperinflation when the rubles of neighboring countries that launched national currencies earlier ended up flooding Kazakhstan (Olcott 2010: 133). Another relevant aspect of independent Kazakhstan's early economic history is the mass emigration of the Kazakh SSR's sizable and well-educated European (mostly Russian and German) population, which led to a brutal contraction of the country's aggregate GDP and a shortage of human capital (Pomfret 2019: 72, Ostrowski 2011: 293). These shocks foreshadow the policy response that was necessary to put Kazakhstan, once one of the most successful Soviet republican economies, back on track: fast liberalization and economic integration to restore connectivity and build up new links for Kazakhstan's intermediate industry; FDI to allow Kazakhstan to exploit its hydrocarbon wealth; and investment into human capital to make up for what was lost to emigration.

5.2.2.3. Governance

The governance of the Kazakh economy can be divided into two eras. Until 1998, the country saw uneven and often traumatic adjustment to the shocks it suffered as a result of the breakup of the Soviet Union, to which it was closely integrated. The final episode of this short decade was the Russian financial crisis, which has hit Kazakhstan hard. In the years after 1999, Kazakhstan enjoyed extraordinarily robust growth, interrupted only by the 2008 financial crisis. While much of Kazakhstan's economic fortunes was determined by external circumstances, the significance of the consolidation of presidential authority that characterized much of the late 1990s, with reformist President Nursultan Nazarbayev exerting control over Kazakhstan's economic governance ever more assertively, cannot be overstated (Pomfret 2019: 69). Nazarbayev used his presidential power to systematically weaken political forces opposed to reform. A key moment of this effort was Nazarbayev's rule by decree between March and December 1995, as well as the subsequent introduction of a new constitution that strengthened the position of the president against that of the legislature (Pomfret 2019: 73). This was significant as the president in Kazakhstan's case was a force for reforms the legislature, and sometimes even key figures of Kazakhstan's 1990s governments, were opposed to. From 1999 on, the realization of Nazarbayev's Kazakhstan 2030 development strategy went about relatively unbridled (Pomfret 2019: 73).

Kazakhstan, a republic whose economy was built on mining and intermediate industry, could afford delay in attracting FDI into its hydrocarbons sector even less than Azerbaijan could, which in the early 1990s still exported a significant volume of cotton. The contrast is even starker when comparing Kazakhstan to Turkmenistan: while agricultural (mostly cotton) rents subsidized the rest of the Turkmen economy for much of the 1990s, in Kazakhstan the agricultural sector was itself in need of very significant subsidies even in 2000 (Rousselot 2014: 139). Accordingly, Kazakhstan's reform process started early and went about swiftly. Kazakhstan was the first former Soviet republic to introduce a law on privatization in 1991 (EBRD 1994: 26). Prices, wages, as well as the trade and foreign exchange regimes were liberalized early. Restructuring of the largest state enterprises was the Achilles heel of early Kazakh reform. The privatization of these large companies was scheduled for 1995, then postponed and delayed multiple times, and went about amid constant claims that the government was giving away valuable enterprises for low prices (Olcott 2010: 139, Ostrowski 2010: 55). After the 1998 Russian crisis, a more assertive Nazarbayev changed course regarding the

hydrocarbon sector and infrastructure, and decided that the state was to remain a major stakeholder in these sectors in the long run (Olcott 2010: 242). Many features of the institutional design of the post-1995 Kazakh state, from the rearrangement of powers between the branches of the government to an array of parastatals controlled by the president that represented the state towards investors in- and outside the hydrocarbons sector, were designed to ensure that the state plays this newly important role along the strategy envisioned by the president (Totaro, Sorbello 2022: 307).

Apart from the concentration of powers in the hands of a reformist president, another trait that makes the reformist element appear dominant in the Kazakh autocracy is its approach to social policy. While the social assistance programs inherited from the Soviet Union posed a massive burden to independent Kazakhstan's budget, reaching four-fifths of government expenditures and 10% of GDP in 1997, Kazakhstan took early steps to ease this fiscal burden by introducing a privately funded pension system, again as the first former Soviet republic that did so (Pomfret 2019: 86). Kazakhstan has also successfully raised domestic energy prices to their opportunity costs and reduced subsidies (Jones Luong, Weinthal 2010: 282).

Finally, the unique Kazakh response to the 2008 financial crisis deserves mention. While Kazakhstan was the most reformed and the most liberal of the post-Soviet economies in the sample at the time, the crisis – which has hit the most open economies hardest – ushered in a period of strong state leadership in development. Apart from bailing out the by then very developed Kazakh banking system, the \$16 billion (15% of GDP) stimulus package, financed by Kazakhstan's hydrocarbon fund, also served to bring much of the Kazakh economy – according to Pomfret's estimates, about half of it – under the aegis of the giant state holding Samruk-Kazyna, which subsequently went on to become the key instrument of Kazakhstan's industrial development (Pomfret 2019: 89-90).

5.2.2.4. Resource revenue management

The 2017 RGI shows Kazakhstan as the best overall governor of resources in the sample by a sizable margin with a composite score of 56. In terms of value realization, Kazakhstan holds a narrow overall lead over Gabon and Azerbaijan, falling behind into third place in regard to licensing and reaching second place behind Angola in the state-owned enterprises category. Kazakhstan leads on local impact and taxation, however. In terms of revenue

management, Kazakhstan is first again by a large margin over Gabon with a score of 54. Gabon relegates it to a distant second place in terms of national budgeting, but Kazakhstan's sovereign wealth fund is deemed to be the absolute best with a score of 67, a 15-point lead over second-best Azerbaijan and 2-2.5 times the score of the postcolonial countries in the sample.

Jones Luong and Weinthal establish Kazakhstan's oil ownership model as private foreign ownership without state control, in which "private foreign companies can own the rights to develop the majority of petroleum deposits and hold the majority of share (>50 percent) in the petroleum sector" (Jones Luong, Weinthal 2010: 7). Kazakhstan's NOC, KazMunayGas, is not even remotely as dominant a player in the country's hydrocarbons production as Azerbaijan's SOCAR (Jones Luong, Weinthal 2010: 264-265). However, while decisions about the production of hydrocarbons in Kazakhstan are made by – often foreign – private investors themselves, the government has successfully retained control over said investors' fiscal burden (Jones Luong, Weinthal 2010: 260). This has meant in practice that while in Azerbaijan, the state has granted foreign investors in the hydrocarbons industry a stable fiscal regime and reserved its short-term revenue pressures for the NOC that it controlled, Kazakhstan has passed on its short-term revenue pressures to the foreign investors through arbitrary changes to their fiscal regimes. The upshot was that these foreign investors were weakly committed to CSR (Jones Luong, Weinthal 2010: 260) and that Kazakhstan, for a long time, took a very lenient stance on local content (Ostrowski 2010: 71). This changed somewhat after the founding of KazMunayGas in 2002 through a merger of the national oil company, KazakhOil, as well as the national oil transportation company. While KazMunayGas is more of a parastatal middleman between the government and foreign oil companies than an oil production company itself, Ostrowski also considers it a vehicle for local elites to gain access to the oil business (Ostrowski 2010: 58).

Private ownership without state control allowed Kazakhstan, however, to capitalize on its oil endowment rapidly in a period around the turn of the millennium that was characterized by high oil prices. Most of Kazakhstan's oil reserves lie in the Kashagan offshore oil field, which poses significant exploitation difficulties (Pomfret 2019: 75). Allowing private ownership under conditions of a sufficiently liberalized economy has made it possible for large international oil companies to bring in the necessary capital and expertise to explore, develop and exploit this field without delay. The start of oil production on the Kashagan field ushered

in a period of rapid economic growth in Kazakhstan (Ostrowski 2011: 294, Pomfret 2019: 74). The establishment of Kazakhstan's oil fund, the National Fund of the Republic of Kazakhstan (NFRK), coincided with the start of the Kashagan oil boom as the fund was founded in 2000. Jones Luong and Weinthal praise the NFRK as outstanding in its ability to constrain Kazakhstan's government to save up oil revenues instead of increasing public expenditures during windfalls, thereby sterilizing the budget and containing inflation (Jones Luong, Weinthal 2010: 279-280). However, it is worth noting that Kazakhstan's NFRK, just like SOFAZ, is subject only to presidential control (Wakeman-Linn et al. 2003: 348). This means that prudent use of the fund during Kazakhstan's most successful years was not underpinned by rules but by the intentions of a president whose intentions can overall be labeled as reformist.

5.2.2.5. Industrial and diversification strategy

Any appraisal of Kazakh economic diversification must start by acknowledging that the cradle of the modern Kazakh economy was actually early and rapid de-diversification, driven by market forces. The newly independent Kazakh state has privatized the large industrial base that it inherited from Soviet times, which has resulted in much of the Kazakh SSR's industry atrophying. This was due in part to segments of the centrally planned economy becoming uncompetitive under market conditions *per se*, as well as to the fracturing of the unified Soviet economic space into which Kazakhstan was tightly integrated. On the other hand, the young Kazakh state has concentrated its efforts on attracting FDI into the hydrocarbon industry, which was underdeveloped in Soviet times. This has resulted in Kazakhstan becoming more dependent on hydrocarbons after independence than it was during the Soviet period (Ostrowski 2011: 293).

For a country as integrated with Russia in terms of its hydrocarbons export routes as Kazakhstan, the transport curse is a major concern. Its alleviation has been a priority of the Kazakh government. The 2001 launch of the Caspian Pipeline Consortium (CPC) pipeline, the first pipeline that was capable of transporting Kazakh oil abroad and wasn't owned wholly by Russia's Transneft oil transport company, was a breakthrough in this regard, and a pipeline to China via Xinjiang was opened in 2005 (Dobronravin 2010: 167). Diversification of oil export routes has improved Kazakhstan's terms of trade for oil to a great degree (Sunley et al. 2003: 174).

It must be mentioned that Kazakhstan's financial development, a key requirement for the development of a non-hydrocarbon private economy, was the best in the region by a large margin, to the extent that Kazakh banks started extending into Kyrgyzstan and Tajikistan, the lesser-developed Central Asian countries, aggressively throughout the 2000s. The insurance and mortgage market was also well-developed by the late 2000s, and Kazakhstan allowed foreign investment into its banking sector before the 2008 financial crisis (Pomfret 2019: 88). Another key economic institution, human capital formation, is widely considered to have been a priority for the Kazakh regime from the early Nazarbayev era onwards (Jones Luong, Weinthal 2010: 283; Pomfret 2022: 298).

Kazakhstan has been actively redistributing oil rents into other sectors of the economy, and this process has picked up pace with the large stimulus package of 2009, which was a bank bailout and a state-led economic development program at the same time, channeled through the giant Samruk-Kazyna state holding company (Ahmadov 2019: 169; Pomfret 2019: 89-90). Samruk-Kazyna, as well as the state-owned agricultural holding KazAgro, were intended to replicate the successes reached by the state investment companies of Singapore and Malaysia, Temasek and Khazanah, respectively (Pomfret 2019: 79). The years after the 2008 crisis also saw Kazakhstan taking a more assertive stance on local content requirements for oil ventures (Ostrowski 2010: 121). Apart from state-led development projects, two other important sectors that receive substantial hydrocarbon rents for their development since the early 2000s are agriculture (Pomfret 2019: 82-85) and public services in petroleum-poor regions, which are funded through subnational revenue sharing (Jones Luong, Weinthal 2010: 284).

Kazakhstan also pursues diversification through human capital formation. Pomfret highlights the significance of the Balapan preschool program, the Bolashak program for supporting Kazakh students who study abroad, as well as the Nazarbayev University and the network of Nazarbayev Schools that became a center of excellence providing high-quality education for local talent (Pomfret 2019: 87). Pomfret also posits that there was in Kazakhstan "commitment to improved human capital" in contrast to neighboring Uzbekistan, which has led to the formation of "a substantial educated middle class, especially in the main cities" (Pomfret 2022: 298). Data indeed shows that health and education spending as a share of GDP was, throughout the period in question, the highest in Kazakhstan among the post-Soviet countries in the

sample, and the government has sustained the high level of such spending that was reached during the pandemic even after the covid-19 years, which is completely unique in the sample.

5.2.3. Turkmenistan

5.2.3.1. Development outcomes

Turkmenistan is broadly in line with the rest of the post-Soviet group in terms of its economic development outcomes, ranking slightly below Azerbaijan in most indicators. It has enjoyed high GDP per capita growth with medium stability, attained low unemployment, and has reached a very low, practically nil, level of government debt to GDP despite its high current account volatility. It has enjoyed high FDI inflows overall. However, it contrasts starkly not just with its peer group but also with the entire rest of the sample in terms of economic diversification as it shows no signs of diversifying at all: its hydrocarbon dependence is extremely high and persistent, the share of hydrocarbons in exports has stagnated at a high level between 2004 and 2024. Non-hydrocarbon export growth has been relatively weak between 2004 and 2014, and even negative between 2014 and 2024. Its ECI level is medium but shows an improving trend.

Conclusions on Turkmenistan's social development are somewhat hard to draw due to the paucity of data in this regard – there is no data, for example, on the poverty headcount ratio at \$3.65 per day. In terms of most indicators, Turkmenistan aligns with its regional peers, although there are some metrics in which it is a clear negative outlier, suggesting overall weaker social development. Turkmenistan's HDI is high, but its neonatal mortality and life expectancy lie in the medium range, below post-Soviet peers. Access to drinking water, basic sanitation and electricity is near universal, like in Azerbaijan and Kazakhstan. Turkmenistan is, however, an outlier in terms of the share of internet users, which is by far the lowest in the sample in a context of restricted access. Budget spending on health and education, another negative outlier indicator, is low and shows a decreasing trend.

5.2.3.2. Initial conditions

In the late Soviet period, Turkmenistan was essentially an economy based around two commodities (cotton and natural gas) that it exported mostly within the USSR, resulting in an extreme share of intra-union trade in the Turkmen SSR's total commerce: 86 percent of

Turkmen imports and 92 percent of Turkmen exports were realized within the Union in 1990 (Anceschi 2009: 72). These two sectors have seen substantial development in the last decades of the Soviet Union; however, other industry was essentially nonexistent (Pomfret 2019: 127). As cotton and natural gas were traded within the USSR at prices deeply below the world market level, there were expectations a shift to world market prices after independence would make Turkmenistan a beneficiary of transition through improved terms of trade (Pomfret 2019: 127). However, the extent to which Turkmenistan could in fact capitalize on the shift to world market prices was limited by its unfortunate geography. Cotton was easily tradable and bestowed high hard currency proceeds on Turkmenistan until the collapse of world cotton prices in 1996 (Pomfret 2019: 125). At independence, Turkmen gas could only reach potential buyers through Russia via Kazakhstan and Uzbekistan, the countries that controlled the old Soviet pipeline network Turkmenistan was connected to (Dobronravin 2010: 158). Logically, Turkmenistan's transport curse allowed these transit countries – which used to be the targets of Turkmen exports – to dampen the worsening of the terms of trade with, and limit the passthrough of world market prices to, Turkmenistan. This placed Turkmenistan into a vulnerable position in international trade, in which it relied on highly unfavorable barter deals with Russia and Ukraine instead of selling its gas at world market prices for hard currency (Pomfret 2019: 139-141).

On the other hand, Turkmenistan differs from most of its Central Asian peers in terms of the size of its population relative to its rents – agricultural and hydrocarbon – available for distribution. A rentier model is therefore more tenable in Turkmenistan than in the rest of the region, Annette Bohr argues (Bohr 2016: 16). Rousselot contends that these easily accessible rents, especially of agricultural nature, have allowed Turkmenistan to eschew attracting FDI in the first years of its independence: fast exploitation of its hydrocarbon wealth wasn't critical to the survival of the regime as agricultural rents were available for distribution through the state monopoly on agricultural prices, so that courting hydrocarbon FDI, which would have required politically sensitive concessions, could be avoided (Rousselot 2014: 140). This dynamic has exposed the Turkmen government to significantly less reform pressure early on than it was the case in either Azerbaijan or Kazakhstan.

5.2.3.3. Governance

Analyses of Turkmenistan's eccentric political system abound. Dobronravin claims that the Turkmen regime was the first one to build an autocracy on a non-religious and non-Marxist-Leninist foundation (Dobronravin 2010: 159). Pomfret merely provides an impressive list of state institutions that are directly subordinate to the extraordinarily strong Turkmen presidency (Pomfret 2019: 132). Luca Anceschi describes President Saparmyrat Nyýazow's Turkmenistan as the pioneer of authoritarianism in Central Asia, where the use of national referenda as a tool for the extension of presidential tenures was born (Anceschi 2009: 36). Sebastian Peyrouse posits that the Turkmen regime is made up of "culturalist arguments for dictatorial power seeking its own ideological justification" (Peyrouse 2015: 219). The Turkmen system of governance is a worthy topic of study, yet this present work concentrates on the traits of said system which are relevant for economic development.

Pomfret rightly points out that Turkmenistan is not an economic reformer. The goal of Turkmen economic policies was, in his view, to "conserve the [Soviet] economy as it was, but with the rents from cotton and gas going to the president rather than to the Soviet state" (Pomfret 2019: 125). The EBRD record confirms his view: Turkmenistan has, throughout the period covered by the Transition Reports, been the least reformed transition economy by most metrics. Until the 2007 reform package implemented already by the second President, Gurbanguly Berdimuhamedow, the EBRD records almost no change to the status quo reached in the early years of transition: some price liberalization with massive swaths of the commodity market still under price controls, no large-scale privatization to speak of, small-scale privatization in retail and services, widespread trade barriers, a system of multiple artificial exchange rates with a sizable forex black market, essentially no financial development beyond the establishment of two-tier banking, weak economic institutions in the legal sense (EBRD 1997: 205-207). Pomfret claims that this was essentially a system that retained the drawbacks of the Soviet planned economy but forfeited its advantages, as planning was centered around the President, not a professionally organized economic planning apparatus (Pomfret 2019: 137). In fairness to Turkmenistan, the aforementioned rentier model also funded an extensive welfare system, some elements of which were unheard of in the region and beyond: Dobronravin refers to the policy complex of free water, salt, gas and electricity, free flour for the poor, as well as cheap petrol, housing, telephone and public transport costs as "a kind of post-Soviet Kuwait" (Dobronravin 2010: 159). Assessing the real impact of these policies on

Turkmenistan's social development is made difficult, however, by the unreliability of Turkmen statistics that is also well-documented in the literature (Dobronravin 2010: 160; Pomfret 2019: 131). The data that is available shows that even though Turkmen social development lags behind regional peers, it is not in an entirely different league, and still seems to outperform the postcolonial countries in the sample.

Some changes were made by President Berdimuhamedow, who took power right before the 2008 crisis: he has undone some of the President Nyýazow's educational policies that lowered the quality of education (Pomfret 2022: 289), while the EBRD records some progress in 2007-2008 in terms of economic legislation, liberalization of land ownership, and the unification of the exchange rate (EBRD 2008: 192-193). This did not, however, translate into a systemic shift. To this day, Turkmenistan is a largely state-controlled economy with significant restrictions on trade and movement, a system of multiple exchange rates that serves to make it difficult for the population to access foreign exchange but channels ample rents to those who control imports, and extensive subsidies in utilities, public services, and basic foodstuffs.

A key detail in the EBRD Transition Reports points to the systemic and intentional nature of Turkmenistan's economic policy. Indicators in infrastructure transition have been added to the scope of the reports in 1999. Turkmenistan attained the lowest transition score, 1, in every area of infrastructure measured: telecommunications, electric power, railways, roads, water and wastewater (EBRD 1999: 24). With only minor exceptions, this remained the case through 2015, the last Transition Report that contained separate infrastructure indicators (EBRD 2015: 91). The wider point this proves is the following: in sectors that underwent major technological innovation in the space of these 16 years, Turkmenistan made the conscious decision not to change anything in structural terms. Turkmenistan does not "lag behind", "underperform", or "have the wrong policies" – it chooses not to change and forfeits development opportunities to conserve its system. It is in connection with this goal that FDI is barely courted; this was the case especially in the 1990s, when Azerbaijan and Kazakhstan registered their highest FDI inflows. Under Nyýazow, Jones Luong and Weinthal contend that Turkmenistan "openly discouraged foreign investors in the petroleum sector and actively thwarted their operations" (Jones Luong, Weinthal 2010: 82). This has changed somewhat under Berdimuhamedow, which has led to a modicum of FDI flowing in, although still at levels below

that of Azerbaijan and Kazakhstan in most years except around the financial crisis (Peyrouse 2015: 173).

5.2.3.4. Resource revenue management

The 2017 RGI does not contain revenue management data for Turkmenistan but establishes it as the overall worst governor of resource revenues in the sample in terms of value realization as well as in regard to the composite score, which amounts to 11 in Turkmenistan's case. In regard to value realization overall and every aspect thereof, Turkmenistan is a distant last, except in terms of state-owned enterprises, an area in which it is only narrowly bested by Gabon.

Jones Luong and Weinthal establish Turkmenistan's hydrocarbon ownership regime as state ownership with state control, a regime in which "the state must own the rights to develop the majority of petroleum deposits and hold the majority of shares" in the sector, with foreign involvement limited either "to participating in contracts that restrict their managerial and operational control", or "to operating as service subcontractors" (Jones Luong, Weinthal 2010: 7). They argue that this ownership regime has led to a weak fiscal regime (Jones Luong, Weinthal 2010: 105). More specifically, this has led to a system in which the hydrocarbons sector has taken on the role that agriculture, chiefly cotton, used to play in the early years of Turkmenistan's independence. It is overtaxed using high explicit taxes, as well as the implicit tax that the export proceeds surrender requirement at an overvalued exchange rate represents – in order to fund the Turkmen state to an extent that no other sector would have to be meaningfully taxed (Jones Luong, Weinthal 2010: 88-90). A key feature of the Turkmen hydrocarbon ownership regime is that it rarely, if ever, permits PSAs with foreign companies for onshore hydrocarbons production, effectively confining foreign involvement to offshore reserves, and sells gas at the country's borders, playing a very passive role in shaping the transportation options available for its gas exports (Bohr 2016: 73). Exceptions to these rules are rare, with the China National Petroleum Corporation (CNPC) and Italy's Eni being the only significant onshore producers (Peyrouse 2015: 173).

Turkmen resource revenue management is devoid of the elementary traits of transparency: not only does the country not have a unified budget, the budget that it has is not even public (Bohr 2016: 37). And although formally, Turkmenistan has several hydrocarbon funds,

chief among them the Foreign Exchange Reserve Fund as well as the Stabilization Fund, these don't fulfill the roles described in subchapter 2.1.3.1. on such funds. One of the reasons for this, of course, is that an artificially overvalued currency in a state-dominated economy effectively mandates the Dutch disease, while the presence of multiple unofficial exchange rates restricts private foreign trade. Thereby one of the core objectives of using oil funds does not apply to the Turkmen economy in its current state. The two other objectives – revenue smoothing and funding for investment into economic diversification – would be theoretically achievable using Turkmenistan's funds. In practice, however, literature finds that these funds exist mostly as slush funds of the President (Bohr 2016: 39), or to fund large-scale prestige construction projects, and that most of export proceeds are not even spent inside Turkmenistan (Jones Luong, Weinthal 2010: 100).

5.2.3.5. Industrial and diversification strategy

The first and foremost diversification task that stood ahead of independent Turkmenistan was breaking the transport curse which left it as Russia's captive supplier and stymied its efforts to realize the full potential of transitioning from Soviet internal trade at set prices to open international trade at world market prices. There was little progress in this regard throughout the 1990s, save for the opening in 1997 of a short pipeline between Turkmenistan and Iran, financed mostly by Iran and repaid by Turkmenistan using gas deliveries (Anceschi 2009: 92-93). The year 2006 proved to be a turning point, however: President Nyýazow traveled to Beijing that year and returned with a deal on a pipeline, discounted loans, and investment projects (Pomfret 2019: 147). The Central Asia-China gas pipeline, completed in 2009, broke Russia's monopsony over Turkmen gas and improved Turkmenistan's chances of finally receiving world market prices for its gas; however, it has also led to China becoming essentially the sole buyer of Turkmen gas by the middle of the 2010s (Pomfret 2019: 147; Bohr 2016: 78). Having established a lifeline for extracting gas rents, other forms of regional cooperation or connectivity were not of significant interest to Turkmenistan (Ostrowski 2011: 292).

In the way of a diversification strategy into non-hydrocarbons, Turkmenistan's attempts at import-substituting industrialization (ISI) deserve mention. Attempts at ISI have been present in Turkmenistan's economic policy since the mid-1990s, with an emphasis on the textile industry, and the aim of processing homegrown cotton and silk (Ostrowski 2011: 291). The

episodic surfacing of HS codes connected to this industry among Turkmenistan's top export commodities is proof of this phenomenon. However, Pomfret regards these attempts at ISI as being hamstrung by “familiar symptoms of misallocated resources, artificial exchange rate, and financial repression”: the state attempted to direct the process itself and relegated private enterprise to a passive role, and there was no financial sector that could have furthered industrial development (Pomfret 2019: 128-129). This textile industry operated with the state purchasing equipment and cotton inputs below world prices (Pomfret 2019: 130). A key partner in Turkmenistan's modest industrialization strides was Turkish business: Turkey's companies invested into textile-sector ISI despite the unfriendly overall investment climate and became the dominant actors in Turkmenistan's construction and infrastructure sectors, likely as a result of bilateral political agreements (Peyrouse 2015: 203).

Apart from textile-focused ISI, industrial investment was also channeled into the modernization of Turkmenistan's oil refinery in the city of Türkmenbaşy, while the rest of the country's copious rents – evident in investment to GDP ratios north of 50% in the 1990s – was mainly expended on high-visibility construction and necessary but oversized infrastructure (Pomfret 2019: 130). A key feature of Turkmenistan's development policy is the absence of rural development: while the capital was peppered with gargantuan construction projects, basic infrastructural needs, including access to gas, fresh water and electricity, remain unmet in the rural provinces (Bohr 2016: 40).

Beside a plethora of other structural factors, the state of Turkmen human capital formation remains the key risk to the prospects of Turkmen industrialization and diversification. There is little transparency regarding the functioning of Turkmenistan's education system and on the extent to which educational output has been hampered by widely reported phenomena like forced student labor on cotton fields or the curricular focus on President Nyýazow's book *Ruhnama* instead of other subjects. Some anecdotal evidence does exist, however: Pomfret reports that the number of students in higher education fell from 40 000 in 1991 to below 10 000 in 2004, and universities in other post-Soviet countries have started turning down students from Turkmenistan (Pomfret 2019: 136). Peyrouse speaks of a “planned policy of literary reduction” and a deliberate destruction of human capital, noting the refusal to republish Turkmen writings from the Soviet period after the change of alphabet from Cyrillic to Latin as a seminal element of this process (Peyrouse 2015: 222-223). Bohr, while sharing a similar

overall view, points to the fact that even in Soviet times, Turkmenistan had the fewest institutions of higher education per capita, with purges among the intelligentsia and the destruction of institutions like writers' unions, libraries or research institutes, as well as the mass emigration of intellectuals, exacerbating this preexisting deficiency (Bohr 2016: 17).

As shown in subchapter 4.2., these policies have not resulted in measurable structural diversification. Non-hydrocarbon exports remain very limited, with the country's export structure dominated by hydrocarbons.

5.3. Policy architectures in the postcolonial countries

The world of oil-producing African postcolonial countries is much more diverse than that of oil-producing Soviet ex-republics due to a range of factors related to geography, culture, and different colonial heritages. The countries of this sample are no exemption to this rule. There are, however, several recurring themes relevant to their examination.

The first universal phenomenon is what David Booth and Frederick Golooba-Mutebi term the 'African modal pattern of rent-seeking': rent extraction is a source of personal enrichment for the political class; due to regime survival through cooptation, the political class is not in a position to deny rent-seeking opportunities to its supporters; policymaking partly serves the purpose of creating rents to be allocated to supporters; and this chain of corruption reaches down to the bottom levels of public service (Booth, Golooba-Mutebi 2012: 386). This modal pattern impacts different African countries to different extents, but it is especially characteristic of the factional democracies among them, as well as those paternalistic autocracies that rely on broad patronage coalitions

Secondly, Acemoglu et al. argue that colonial institutional choices shaped the institutional trajectories of postcolonial states: European colonizers have made the decision to incur the cost of building an inclusive set of institutions – a 'neo-Europe' – in their colony or build an 'extractive state' that is run by a small local elite (Acemoglu et al. 2000: 11). This decision was predicated in part on the geographical factors that influenced the feasibility of erecting European settlements in a given colony and, as Acemoglu et al. found, the institutional results of the decision persisted after independence (Acemoglu et al. 2000: 2). Zophia Edwards adds that the state of organized labor before independence is a co-determinant of institutional configurations, and thereby development outcomes, post-independence (Edwards 2015: 19).

Thirdly, China plays a different role in Africa than it does in the post-Soviet world. China is aware that there is an eagerness among various African countries to learn from China's development experience; and even though this learning takes place in very limited form, if at all, the imaginary of Chinese development makes China an especially valued partner for development cooperation (Corkin 2016: 51-52). This is especially visible on the example of Angola within the sample, where Chinese developmental loans have become a central component of postwar reconstruction.

Lastly, due to the insular nature of the hydrocarbons industry in Africa, James Ferguson's notion of a postcolonially continuous 'l'Afrique utile' and 'l'Afrique inutile' comes to mind: oil enclaves are connected to global production networks but detached from their geographical locus (Ferguson 2005: 380). This insularity might play into Mahvash Saeed Qureshi's finding that the effects of institutions and infrastructure on development outcomes are larger in oil-producing African countries than elsewhere (Qureshi 2008: 31). The extent to which value generated in such enclaves is transmitted to the wider economy is a central dimension of comparison among postcolonial oil producers.

These themes constitute a common background for examining how three different postcolonial oil states managed resource rents in the service of development but do not constitute one unified explanation of development outcomes observed in Algeria, Angola and Gabon.

5.3.1. Algeria

5.3.1.1. Development outcomes

Algeria has enjoyed moderate GDP growth with medium stability, achieving intermediate outcomes in unemployment and government debt to GDP relative to the rest of the sample. Its current account volatility has been very high, accompanied by essentially nil foreign direct investment. The share of the HS27 commodity group in Algeria's export has declined between 2004-2024 as the country saw strong non-HS27 export growth in both decades of this period. It is the only postcolonial country in the sample to exhibit signs of structural, albeit low, export diversification. Its ECI level has stagnated at a medium level.

Algeria has seen the most favorable social development outcomes among the postcolonial countries of the sample, resembling those of Azerbaijan. Its HDI is high, the poverty headcount ratio at \$3.65 per day is near elimination. In comparison to the rest of the sample,

Algeria's life expectancy is high, its neonatal mortality rate is low. Access to electricity and drinking water is near universal. Elementary sanitation coverage is high, just like the share of internet users. Algeria's health and education spending is high but shows a declining trend.

5.3.1.2. Initial conditions

Algeria has reached the 1990s as an OPEC member with a well-developed hydrocarbons industry; most of its oil and gas wealth was discovered before its independence in 1962, with the pace of new discoveries slowing substantially in the successive decades (IMF 1995a: 5). It has developed into a mature rentier economy with a nationalized hydrocarbons industry at the core that was dominated by state-owned enterprises (Lowi 2009: 83). The oil bust of the late 1980s has, however, resulted in an economic crisis that required IMF involvement at the turn of the decade and gave way to market reforms that make it possible to liken Algeria's reform path to that of post-Soviet economies in the sense that both involved IFI-backed liberalization and retreat from state socialism without fully dismantling the dominant state role in the economy (Nashabibi et al. 1998: 5).

Reforms and austerity measures in the early 1990s include devaluations of the overvalued Algerian dinar, substantial trade and price liberalization, as well as the privatization of some state enterprises (IMF 1996: 1-11). Privatization of state-owned enterprises has been the most sluggishly advancing dimension of this reform effort, and the government made sure it did not involve Algeria's NOC, Sonatrach, as well as the country's most important commercial banks (Entelis 2012: 573). The reforms under Algeria's three Standby Arrangements and one Extended Fund Facility with the IMF, which ended in 1998, represent the last major changes to Algeria's economic institutions.

Another circumstance relevant to Algeria's economic development was the civil war that raged on between 1991 and 2002, impacted the pace and extent of Algeria's reforms, and ended essentially in the cooptation of Islamist groups into the regime along with minor cultural concessions to the Berber population (Lowi 2009: 135-138).

5.3.1.3. Governance

Isabelle Werenfels' research unveils the socialist imaginary, centered on state enterprises, that shapes Algeria's economic policy. As she expounds: "This imaginaire comprised a

socialist work order, and framed state-owned public enterprises as symbols of national sovereignty and as places of collective efforts rather than individualism. Moreover, there was no separation of the economic production sphere at the enterprise and the social reproduction sphere of its workforce” (Werenfels 2002: 12). She warns that even though these social realities changed in practice after the oil bust of the 1980s, the imaginary remained, and “capitalism is not (yet) a socially embedded ideology”, hindering privatization efforts (Werenfels 2002: 12).

In describing Algerian governance, Entelis writes about “weak state institutions” and a “culture of cronyism”, with public enterprises viewed “as a means of channeling oil revenues around the economy, not as a means of adding value or making profits” (Entelis 2012: 576-577). Similarly, Lowi describes the functioning of the Algerian economy as follows: “When oil rents were available, they would be distributed in ways to subdue divisions, fragment social formations, and defeat alternative threats to the ruling elite’s hegemony. Clientelist practices of co-optation and manipulation have figured in regime strategies.” (Lowi 2009: 178). In short, Algeria’s political institutions seem to necessitate the existence of an extensive state that dominates the economy in order to retain access to the means of cooptation should political divisions threaten the regime, as well as to meet the social demands that arise from the socialist economic imaginary. Algeria’s development outcomes – limited economic dynamism with relatively favorable social development – are consistent with such an institutional configuration.

5.3.1.4. Resource revenue management

The 2017 RGI portrays Algeria as the second worst overall governor of hydrocarbon resources within the sample with a composite score of 33, superior only to the negative outlier Turkmenistan. This unfavorable composite ranking has to do mostly with revenue management, however, as Algeria’s overall value realization score of 40 is clearly superior to that of Gabon as well, and the country retains its second place within the postcolonial group in regard to all aspects of value realization. Its resource revenue management score of 25, however, falls short of its postcolonial peers, and it delivers the worst score in the entire sample (Turkmenistan produced no data) in terms of both national budgeting and sovereign wealth funds.

Algeria created an oil fund, the Revenue Regulation Fund (FRR), in 2000 as a device to smooth the volatility of oil prices. The accumulation rule initially stipulated that windfall profits from hydrocarbons exports above a threshold level set for each year were to be transferred into the fund. This already rather lax arrangement – which did not shield the threshold level from being adjusted under pressures of political expediency – was further weakened in 2006 when FRR was allowed to finance the budget deficit irrespective of oil prices. The extent of this budget financing was limited only by a minimum balance requirement, which was abolished in 2017, resulting in the total depletion of the fund in the late 2010s and again in the early 2020s (IMF 2023: 5). Algeria's growing indebtedness after 2015 reflects these dynamics. The FRR, therefore, proved unable to contain unsustainable fiscal practices and was never intended in the first place to fund diversification efforts, falling short of the objectives outlined in subchapter 2.1.3.1.

The heart of Algeria's resource revenue management, however, lies with Sonatrach, Algeria's NOC that the government has managed in a fashion not unlike that of Azerbaijan: government claims on Sonatrach reflect economic cyclicity. As Valérie Marcel's interviews with Sonatrach executives show, the NOC in Algeria is deeply involved in making policy for itself, and there is a remarkable revolving door effect at play between the company and the ministry responsible for its regulation (Marcel 2006: 79). A legislative attempt to strip Sonatrach of its regulatory functions failed in 2005 (Entelis 2012: 583). The main factor that limits Sonatrach's freedom is that in years of low oil prices, the government looks for ways to make the company more efficient; this efficiency pressure, however, abates as oil prices rebound (Entelis 2012: 587). Lowi also records instances in which the cyclicity of government claims on Sonatrach was political, not economic – in other words, when the supervising minister used Sonatrach's funds for spending he could not clear with the Ministry of Finance within the bounds of the national budget (Lowi 2009: 91).

Algeria's resource revenue management, therefore, exhibits strong signs of susceptibility to political expediency and few hard constraints that could enforce a longer-term strategy either in terms of budgetary discipline or in terms of the NOC's operation.

5.3.1.5. Industrial and diversification strategy

The IMF record contains no evidence of a state-led diversification drive at any point of the period of interest. The economic institutions governing the possibilities of diversification have changed significantly, however, two times between 1991 and the present day.

The first one was the entry into force of the EU-Algeria Association Agreement in 2005, which has mandated the harmonization of norms, standards and regulations between the parties, as well as the lowering of trade barriers after a period of increased effective protection for some Algerian industries (IMF 2006: 5-7). This transitory period could possibly have been used for the accelerated development of infant industries to prepare them for competition under the circumstances of lower trade barriers.

The second one was the 2018 change in economic strategy in connection with the limits of rentier growth becoming visible after a period of low oil prices: depletion of the FRR and societal opposition to further austerity. In this year, Algeria has switched to an expansionary fiscal stance and used monetary financing – for which the central bank received permission for a period of 5 years – to inject substantial budgetary resources into the economy (IMF 2018: 9). It also hardened import barriers to enhance the competitiveness of local industry and constituted, all in all, a strategy that was heavily discouraged by IMF staff at the time (IMF 2018: 10). Trade data shows some, albeit minor, structural diversification coinciding with this strategy change in the late 2010s and early 2020s.

5.3.2. Angola

5.3.2.1. Development outcomes

Angola has enjoyed moderate but unstable GDP/capita growth in the period of interest, while unemployment remained structurally high, the current account showed considerable volatility, and government indebtedness reached a high level relative to GDP by 2024. Angola has seen medium FDI inflows compared to the rest of the sample and net outflows since the late 2000s. Angola's dependence on hydrocarbons is extremely high but declining, with non-HS27 exports showing strong growth in the last 20 years. Export diversification has only reached a low degree and remained within the primary goods sector. Angola's ECI level is low and stagnant.

In terms of social development, Angola has attained by far the least favorable outcomes in the entire sample. It is the only country of the sample with medium HDI. Poverty at 3.65

USD/day remains persistently high, the neonatal mortality rate is at a medium level, but compared to the rest of the sample, life expectancy, as well as the degree of access to safe drinking water, elementary sanitation, the internet and electricity are low. Government spending on health and education is low compared to the rest of the sample and shows a declining trend.

5.3.2.2. Initial conditions

Angola has spent the first decade of the period of interest embroiled in a civil war. Already without foreign combatants, the armed struggle between the MPLA (which has held the central power in Angola since 1975) and the UNITA raged on after a contested presidential election in 1992 until the 1994 Lusaka Protocol, and then from 1998 until UNITA leader Jonas Savimbi's death in 2002. The MPLA was in this period both the government responsible for economic development and a warring faction that was as preoccupied with destroying its enemy, including UNITA's economic hinterland, as it was with developing Angola. In addition, the extent to which the central government has had control over the country varied throughout the 1990s.

Concurrently with the oscillation between periods of fragile peace and flareups of the civil war, the 1990s also marked a shift away from Marxism-Leninism for the economic policy of the MPLA government, a privatization drive which Patrick R. P. Heller puts as "market-oriented reforms that actually resulted in a more focused clientelism" (Heller 2012: 848). The loss of Soviet aid also encouraged the MPLA government, which faced the additional prospect of being voted out of office, to look for internal sources of rent (Heller 2012: 848). Jesse Salah Ovadia asserts that by 1993-1994, the regime had successfully adapted to market conditions "without significantly altering their source of wealth, which remained petroleum rents"; they have succeeded in creating what he terms the Bermuda Triangle, "a complex relationship between the presidency, Sonangol and the central bank, bypassing the Ministry of Finance and creating a 'black hole' for the country's oil revenues" (Ovadia 2016: 96-97).

Meanwhile, as the data shows, FDI poured into Angola's oil industry, which was geographically insulated from the fallout of the war through its locus in the Angolan exclave of Cabinda (IMF 1995b: 1). In a period of increasing oil prices in the 1990s, MPLA's access to oil rents proved superior to what diamond rents could provide UNITA with.

5.3.2.3. Governance

The key tenet of Angolan governance is the country's unique political economy that Ricardo Soares de Oliveira defines as a "successful failed state" (Soares de Oliveira 2007: 596). Nicholas Shaxson expounds further that the essence of Angolan governance is that "the apparatus of government was stripped down to little more than its sovereign, extractive core, leaving the rest to wither" (Shaxson 2007: 183). Leaving the question of intentionality aside, secondary literature and the IMF record portray postwar Angola as a country plagued by the coexistence of extraordinarily weak state capacity and a the singular efficiency of the Angolan NOC, Sonangol, despite sizable quasi-fiscal burdens (IMF 2003b: 18). The IMF also describes the fiscal regime for IOCs as stable and suitable for attracting FDI (IMF 2003a: 75). The rents generated by a well-governed NOC have remained closely linked to presidential authority, and the way they are used underwent significant changes throughout the period of interest: while in 2004 Tony Hodges found that they were appropriated by the elite through exchange rate manipulation, preferential access to the overvalued official exchange rate, interest rates and access to credit, in the 2010s the means of appropriation pivoted towards selective privatization and the local content drive called Angolanization, to be explored further in subchapter 5.3.2.5. on Angola's industrial and diversification strategy (Hodges 2004: 203).

Another important aspect is the characteristic extraversion of the MPLA as a governing force. Ever since taking power, the MPLA has staked its economic survival on good relations with key international investors: they have not nationalized non-Portuguese foreign property on Angola's independence; the oil rents that carried them through the war were produced mostly by the Cabinda Gulf Oil Company owned by the US oil giant Chevron while their Marxist-Leninist ideology allowed them to harness Soviet aid; and around the turn of the century, progress on the UN-backed Kimberley Process against the global trade of conflict diamonds allowed them to strip UNITA of its most important revenue source (Corkin 2016: 15-16). The contemporary manifestation of this extraversion is Angola's special relationship with China, a web of large-scale, oil-guaranteed development loans extended from 2002 to 2017 that, according to Ovadia, are "emblematic of the desire to move quickly at all costs" in economic development despite Angola's limited absorption capacity (Ovadia 2018: 594). These loans are concessional but not so much as to be considered aid; they include long repayment periods; and they ensure fiscal discipline inasmuch as China Exim Bank pays Chinese construction companies for the development projects directly, whereafter Angola

deposits the proceeds of quarterly oil sales to China into an escrow account that the National Bank of Angola tops up or draws down depending on whether the oil proceeds covered Angola's quarterly dues (Corkin 2016: 83-84). The share of such loans in Angola's overall debt has been decreasing since President João Lourenço took office in 2017, succeeding long-serving President José Eduardo dos Santos.

The Chinese special relationship notwithstanding, Angola has not been able to manage the crises of the 21st century without IFI assistance and has recurrently fallen prey to procyclicality, resulting in IMF-assisted stabilization as part of a Stand-By Arrangement from 2009 to 2012 and an Extended Arrangement from 2018 to 2021. During IMF arrangements, the government – especially President Lourenço's first administration – has also demonstrated openness to reforms of economic institutions that could spur non-oil growth; yet, reform momentum has evaporated after each arrangement and is said by the IMF to be stagnating in their latest Selected Issues paper in 2025 (Duarte Lledó, Miguel 2025: 2).

5.3.2.4. Resource revenue management

According to the 2017 RGI, Angola is the second best overall resource governor among the postcolonial countries of the sample with a composite score of 35, only one point short of Gabon. This score is distorted, however, by Angola's very weak enabling environment scores (e.g. the RGI aspects that have no direct connection to the oil industry), as well as its revenue management, which remains clearly inferior to that of Gabon. In terms of value realization, Angola performs best overall in the postcolonial group and second best in the entire sample with a score of 50. It leads the postcolonial group by a large margin in all aspects of value realization. As regards revenue management, Angola's score of 31 is far behind that of Gabon – however, Angola is the only country in the sample with a subnational revenue sharing score, and it narrowly beats the other postcolonial countries of the sample in the quality of its sovereign wealth fund.

Angola's oil fund, the Angola Sovereign Fund (FSDEA), is a relatively late addition to the country's fiscal toolkit with its founding in 2012. Its accumulation rule makes it, as Angola's public debt trajectory shows, moderately efficient for oil revenue smoothing: it receives annual deposits worth 50 000 barrels of oil regardless of the oil price, while the difference between budgeted and actual oil prices is held by the BNA – that is, there seems to be no

mechanism that would bind FSDEA accumulation and withdrawal to fiscal surpluses and deficits (IMF 2014: 9).

The Angolan NOC, Sonangol, receives the highest praise in secondary literature due to its efficiency that defies all odds given the political and, for large swaths of Angolan history, security context in which it operates. Heller summarizes the four core duties Angolan politics has bestowed upon Sonangol as follows: 1) to provide the conditions for IOCs to make technical and investment decisions with the confidence that political interference would be minimal; 2) to maximize the oil revenues of the Angolan state without upsetting the investor-friendly atmosphere; 3) to steer money and opportunity to an emerging Angolan private sector connected with the regime; and 4) to fulfill essentially state functions should the need arise, like purchasing arms, taking on debt under better conditions than the government itself could, and performing secondary diplomacy (Heller 2012: 837-838). Heller has found corruption within Sonangol to be low, despite Angola's less rosy overall control of corruption scores (Heller 2012: 860). Sonangol operates early discovery fields, most notably Block 0, as tax-and-royalty concessions in which it is a joint venture partner; in later discoveries, it has switched to production-sharing agreements (Heller 2012: 857). And while Sonangol is a key tool in the hands of the government to provide access for Angolan companies to lucrative oil-sector services, it has historically been very cautious not to encroach on any sector to an extent that would disappoint foreign investors (Heller 2012: 838).

Lastly, in sharp contrast to Kazakhstan, Angola – despite the sharp concentration of its oil industry in the exclave of Cabinda – is notorious for not allocating a significant share of oil revenues to the development of Cabinda specifically (Ovadia 2016: 175; Reed 2009: 106). It is possible that political considerations – the fear that local access to oil revenues might provide funding for political resistance – are a factor of this long-standing discrepancy (Ovadia 2016: 178). Nevertheless, the lack of access of Cabindans to oil revenues underscores the extraordinary insularity of the oil industry in Angola: in fact, this insularity manifests itself even within the specific locus, Cabinda, to which most of Angola's oil production is already insulated.

5.3.2.5. Industrial and diversification strategy

Angola's extreme reliance on hydrocarbons underscores that whatever industrial and diversification strategy exists in the country, it is unthinkable that it could manifest itself

independently of the massively dominant oil industry. Odd-Helge Fjeldstad et al.'s study of Angola's 2011 non-oil tax reform highlights this point: the reforms, which were carried out in conjunction with a strengthening of Angola's administrative capacity, were not found to have had an effect on the trajectory of non-oil revenue growth (Fjeldstad et al. 2020: 1197).

There has been, however, an initiative by the Angolan government for so-called 'Angolanization': the appropriation of oil-adjacent industries and oil industry services to Angolan companies, essentially development through local content requirements, which have been increased significantly since the first Angolanization law that was passed in 1982 (Ovadia 2016: 34). Crucially, however, Angolanization as a state-led development effort opens up the market not for free competition, but for presidential patronage towards three circles of businessmen: the President's immediate family; investors who invest on behalf of the President; as well as politicians and officials who are dependent on presidential favor (Ovadia 2016: 110). Sonangol, the key vehicle of this two-in-one program of presidential patronage and economic development, also entertains other development projects of its own: it has a Negotiations Directorate that leads strategic planning of local content, and its investment division under the name SIIND coordinates the development of manufacturing (Ovadia 2016: 199). A hindrance to Angolanization is, however, that Angolan companies have on many counts struggled to fulfill even the market space that local content regulations forcibly opened for them (Corkin 2016: 101).

On the other hand, external actors are still central to the little economic diversification that Angola has seen. The Chinese development loans outlined above are key for the development of infrastructure, railways, and the cubature of human capital development (Ovadia 2018: 596). Chinese companies have also set up Angolan manufacturing bases for inputs necessary in the course of Chinese-funded construction projects, and launched the Viana Industrial Zone (Corkin 2016: 104). Also, since the 2012 'Kwanzanization' law, the use of the national currency, Angolan kwanza, is mandatory for paying taxes and local contractors in the oil industry; thereby, the development and deepening of an Angolan financial sector has essentially been given a big push (Ovadia 2016: 68-69).

What is missing from the story of Angolan development, however, is a business environment and economic institutions that would guarantee the investor-friendly climate enjoyed by IOCs operating in the country to smaller businesses in the non-oil sector; as well as

development in human capital-relevant sectors, which remain chronically underfunded (Ovadia 2018: 598). Overall, diversification initiatives have not translated into meaningful gains in economic complexity.

5.3.3. Gabon

5.3.3.1. Development outcomes

Alone among the countries of the sample, Gabon has attained low and unstable GDP per capita growth over the period of interest, in the context of high government indebtedness. Unemployment remained very high, while the volatility of the current account and FDI inflows have rested at a medium level. Gabon's non-hydrocarbon export growth has been strong in the 2004-2014 period but, together with Turkmenistan, negative in the years between 2014 and 2024. Gabon has achieved a high degree of export diversification, but this diversification has remained entirely within the bounds of primary sector goods. Gabon's ECI is at a medium level compared to the rest of the sample and shows an improving trend.

In terms of social development, Gabon's HDI is high, but it has achieved intermediate outcomes within the postcolonial group. Its poverty headcount ratio at US\$ 3.65/day is stagnating at a medium level relative to the rest of the sample. Neonatal mortality is low and life expectancy is at a medium level. Access to drinking water, electricity and the internet is at a high level, unlike the penetration of elementary sanitation facilities, which is low. Spending on health and education is at a low level and shows a decreasing trend.

5.3.3.2. Initial conditions

Gabon has reached the 1990s as an OPEC member, a mature oil-producing rentier state, and a country that had withstood the pressure in the 1970s to nationalize oil production altogether, settling instead for a 25-percent stake in the oil production operations of the country (Yates 1996: 67-68). Apart from the oil industry – which is, just like in the case of Angola, an insular and mostly offshore business in the case of Gabon –, the country has also had developed mature and export-ready structures for the extraction of two other primary commodities: timber and manganese (Gueye 2012: 197). Both of these industries were, however, at least as insular as the hydrocarbons sector (Yates 1996: 64).

Another key feature of Gabon's early economic policy in the period of interest is a remarkable rigidity and lack of adaptability in the face of crises: after the sharp 1986 drop in oil prices and until the end of the 1990s, Gabon has required no less than four Standby Arrangements and one Extended Fund Facility from the IMF. The IMF deems the programs under the first Standby Arrangements to have been "inadequate to correct the internal and external financial imbalances confronting the Gabonese economy and to put it back on a sustained growth path", with the devaluation of the CFA franc seen as bringing better results in 1994 (IMF 1995c: 3).

5.3.3.3. Governance

Edwards depicts Gabon as a "weak development-inhibiting state" that "increased participation in the economy but in predatory rather than developmental ways", without strengthening resource governance, transparency and accountability (Edwards 2015: 147). Cheikh Gueye also sees the reason for Gabon's sluggish non-oil growth in "ineffective policy implementation owing to weak institutions", as well as "the shallowness of the financial system" (Gueye 2012: 208-209). These institutions have coexisted with the most stable political regime in the entire sample: the Bongo family – Omar Bongo and his son Ali Bongo – have ruled over Gabon from 1967, t.i. just after independence, until the 2023 coup in which the current President, General Brice Oligui Nguema, took power. Development or redistribution as sources of legitimation do not feature in a way that would be comparable to Kazakhstan or even Algeria; rather, Gabonese governance appears characterized by a constant pressure for elite and popular cooptation as mechanisms of political stabilization.

Accordingly, the IMF record shows Gabon as a large and inefficient but procyclically governed state that often hits the limits of its fiscal ability as its oversized wage bill creates internal and external arrears and shows less flexibility than primary-sector exports show volatility. Apart from the five IMF lending commitments in the 1990s after the oil bust, Gabon has required three standby arrangements (and spent the majority of the 2000s under them), as well as two Extended Fund Facilities from 2017 to 2020 and from 2020 to 2021, and even a Rapid Financing Instrument in 2020. The dynamic of all these arrangements has essentially been reform momentum at the beginning and election-related fiscal slippage towards the end (Gueye 2012: 206-207; IMF 2005a: 3; IMF 2009: 3; IMF 2019: 1; IMF 2022: 1).

5.3.3.4. Resource revenue management

The 2017 RGI establishes Gabon as the best overall governor of resources in the postcolonial group and the third best in the sample by a small margin over Angola with a composite score of 36. However, this owes mainly to revenue management, in which Gabon proved superior to Azerbaijan and attained second place overall in the sample. The extraordinarily high national budgeting score of 70, which is by far the best one in the sample, also stands out. Stellar performance on revenue management contrasts, on the other hand, with a value realization score of 18, which is far behind postcolonial peers and superior only to Turkmenistan. Gabon is last among the postcolonial countries in all aspects of value realization, most notably in terms of the state-owned enterprises subscore, where it barely ranks above Turkmenistan.

Gabon has established an oil fund, the Fund for Future Generations (FGF), in 1998 as a perpetual reserve fund that was supposed to invest a fourth of the interest income of its CFAF 500 billion minimum capital into Gabon's economy, but the government failed to contribute to it as stipulated by the accumulation rule (IMF 2005b: 9-10). The FGF has been renamed into the Sovereign Fund of the Gabonese Republic (FSRG) in 2011, and an agency tasked with identifying the right investment targets for the fund was also established (IMF 2012: 14). However, the key issues – weak fund governance, as well as the government's continued failure to honor the accumulation rule – have not changed (IMF 2021: 15).

Gabon's national oil companies – the Gabon Oil Company, and the more important SOGARA, which operates the country's refinery – are, consistently with their low NOC score in the RGI, burdened with very significant quasi-fiscal obligations in the form of petrol subsidies and have been flagged multiple times by the IMF for reform (IMF 2007: 5; IMF 2009: 8).

5.3.3.5. Industrial and diversification strategy

Gabon's intra-primary export diversification is more of a given than a result of any strategy. There has been, however, a reform of the forestry sector in the early 2000s, starting with the approval of a new Forestry Code in 2001 (IMF 2005: 61). Various tax incentives have also supported the development of the mining industry.

In 2014, that is, halfway between the 2009 end of a Stand-By Arrangement and the 2017 request for an Extended Arrangement, the government has also initiated a comprehensive

diversification strategy under the PSGE, the Emergent Gabon Strategic Plan (IMF 2015: 17). However, the IMF record does not contain structural reforms that would have overhauled the business climate for the non-primary sectors. This is consistent with Gabon's export structure, which continues to be dominated by oil, timber and manganese, with their shares shifting in concordance with the cyclicity of world prices for these products.

6. Conclusions

This present work has striven to fill a gap in resource curse literature, which is a field ripe with statistical analyses in search of formal causality, by conducting a comparative multi-case study using Przeworski and Teune's most similar systems design (MSSD) methodology. MSSD studies aim to compare systems that are as similar as possible in as many aspects as possible to generate hypotheses, rather than to affirm formal causality like statistical analyses could. The sample consists, therefore, of six hydrocarbon-exporting middle-income countries that share a 15-30 percent weight of the hydrocarbon sector in their respective GDPs. Three of them used to belong to the Soviet Union and sprang up as sovereign countries after its fall; three others carry colonial heritage and are situated in Africa. The key object of this present work is explaining their divergent development outcomes.

To this end, the study analyzed the development outcomes of these six countries across a variety of indicators in economic development, economic diversification, and social development, in the time period between 1991 and 2025. In conjunction, it tried to chart the policy architectures that were observable in these six countries at the time when they attained the aforementioned development outcomes. The following conclusions identify patterns and plausible associations, but imply no causality.

6.1. Summary of empirical outcomes

The key observation on both economic and social development outcomes is that **the post-Soviet group shows stronger performance in both realms**. All three post-Soviet countries, but especially Kazakhstan and Azerbaijan, experienced much more stable and higher per capita GDP growth than the postcolonial countries. Kazakhstan developed into the positive outlier of the sample, while at the tail end, Gabon stagnated relative to its initial position.

This observation holds true despite the higher baseline in terms of GDP per capita that both Gabon and Algeria had held over all three post-Soviet countries of the sample. This pattern is consistent with the relevance of different human capital stocks accumulated under Soviet and colonial rule, although the present study does not establish this relationship causally.

The overarching theme of diversification outcomes is that **diversification and upgrading are separate matters**. Kazakhstan has proven to be the only country in the sample of the sample whose non-hydrocarbon export growth was large enough offset the effect of falling oil prices during the period examined – and this non-hydrocarbon export growth was concentrated in non-primary commodities. While Algeria and Azerbaijan have also shown some structural diversification, this did not reach the magnitude required to cushion the volatility of oil exports. Angola and, to a larger extent, Gabon have diversified largely into other primary goods, while Turkmenistan's dependence on hydrocarbons appears persistent. As a result, only Kazakhstan has developed the ability to meaningfully buffer hydrocarbon volatility through other exports.

In terms of social development, the outcomes show stronger convergence than in regard to economic structures: increases in life expectancy, as well as a high degree of access to drinking water, elementary sanitation and electricity have been reached under multiple economic structures and policy architectures. However, stark differences still show in terms of spending patterns on human capital, in terms of internet penetration, and in terms of the dynamism of the improvement of social development indicators. Kazakhstan, Algeria and Azerbaijan, remain the strongest performers on most social indicators, while Turkmenistan appears to be plateauing below its post-Soviet peers. Gabon, as well as Angola, trails the rest of the sample, with Gabon showing more stagnation and Angola improving from a lower baseline.

6.2. Policy architectures associated with more favorable outcomes

In line with the hypothesis-generating MSSD nature of this present work, it is possible to map more favorable development outcomes onto a set of policy choices and architectures that have coincided with them.

First among them is that fiscal and resource management that takes a long horizon and limits the ability of short-term political expediency in turning budgetary policy entirely

procyclical. All of the countries that repeatedly required IMF assistance at some point (or multiple periods, extraordinarily many in the case of Gabon) are characterized by oil funds that are governed by weak accumulation rules and a lack of guardrails that keep the government from using them for political spending. On the flipside, Kazakhstan's example shows that prudent management of oil funds can coincide with greater room for countercyclical crisis response, as in 2008, and with the availability of resources for state-led investment.

Secondly, the ability of countries to attract and retain FDI appears to map onto their ability to deliver economic development outcomes. The wording is important here: this present work cannot prove a causal link between the amount of inward FDI and better economic development outcomes, and it also shows that the countries with the most dramatic spikes in inward FDI – Azerbaijan and Angola – are not necessarily the best overall performers. But the hypothesis can be formulated that the set of institutions required to attract a steady flow of FDI might be a set of institutions that is conducive to good economic development outcomes in general as well. What exactly these institutions are – whether they are related to the tax regime, the trade and exchange rate regime, or legal security and the rule of law – needs further research.

Thirdly, human capital investment – represented in the dataset by the proxy of government spending on health and education as a share of GDP – appears to line up with development outcomes, especially in terms of social development and economic diversification. The positive outlier within each group in terms of most aspects of development is the country with the highest (and in both cases, by far highest) spending on these subsystems: Algeria and Kazakhstan. Structural diversification into non-primary commodities, no matter its extent, has only happened in the three top spenders – Algeria, Kazakhstan and Azerbaijan. The negative outlier in the post-Soviet group, Turkmenistan, is also the country with the lowest human capital spending in the entire sample, with Gabon and Angola, two countries with low to intermediate development performance, display human-capital spending levels similar to Turkmenistan's. This, again, does not allow for inferences of causality, and captures budgetary effort rather than the quality or effectiveness of spending.

Fourth, the most favorable outcomes of the sample – especially, again, that of Kazakhstan – map onto a state role of development that is active and proactive but not limited to the management of rent distribution. The less favorable outcomes – those of Turkmenistan,

Angola and Gabon – coincide with state behavior that is preservationist, narrowly extractive, or primarily oriented toward rent allocation and cooptation instead of broad-based structural transformation. This *reformist* element – the ideological underpinning of reforms notwithstanding – of regimes appears to be one of the clearest distinguishing features of the strongest-performing case. Kazakhstan’s development trajectory exhibits two clean examples of such reformist autocratic behavior: President Nazarbayev’s rule by decree in the mid-1990s to break reform deadlock, and the handling of the 2008 financial crisis with a gargantuan stimulus package that required disciplined governance both before (in terms of obeying the NFRK accumulation rule) and after (in terms of not allowing momentary state dominance over the economy to persist) the crisis itself. Although overall outcomes are less favorable, Angola’s use of oil-backed development loans from China can be interpreted as a reformist element of an otherwise predatory political economy configuration, as it linked oil revenues to large-scale infrastructure investment, even though its broader development effect remains uncertain.

The findings therefore support a configurational interpretation: in oil-rich developing states, favorable outcomes are associated not with state intervention alone, but with the way resource rents are channeled into macroeconomic stabilization, diversification into non-oil tradables, human capital, and broader state capacity.

6.3. Theoretical implications

The empirical outcomes caution against universalistic approaches to development in hydrocarbon producers: some strands of resource curse theory would lead one to expect resource governance to play a central role in shaping outcomes, while both New Institutional Economics and state-led development theories emphasize state capacity and institutional quality. However, **outcomes show, firstly, that resource governance is not everything:** Gabon’s strong revenue management, as well as Angola’s good value realization, do not coincide with either country outperforming Algeria or the post-Soviet countries in terms of either economic or social development outcomes. **Secondly, especially the case of Angola shows that state capacity is often uneven:** a state that has proven highly capable of extracting rents from the country’s oil wealth does not show the same capacity as an engine for overall development. Thirdly, when contrasted with Eifert et al.’s political economy typology of oil

producers, the **outcomes also show considerable variation especially within the category of paternalistic autocracies**. The key difficulty of this category is, of course, that the predatory and paternalistic traits of autocracies are hard to clearly separate. Kazakhstan as the only reformist autocracy in the sample, however, does line up with the best macroeconomic, diversification, and social development outcomes. This occurrence is analytically important, but it should be treated as hypothesis-generating rather than causal.

A central strand of resource curse theory – that oil price volatility, in absence of disciplined and strict measures to smooth it out, can generate fiscal cycles that are difficult for oil-producing countries to manage, described in subchapters 2.1.3.1. and 2.1.3.3. – aligns well with the findings of this present work: the countries that were repeatedly in need of emergency IMF intervention were the ones without strong and credible accumulation rules to their oil funds. By contrast, the evidence is less straightforward regarding the claim that quasi-fiscal burdens on national oil companies are uniformly associated with weaker outcomes, as described in subchapter 2.1.3.4. Incentivizing the production of tradables, as recommended by the works cited in subchapter 2.1.3.6., has not manifested itself to a great extent in the trade balances of the countries of the sample except for Kazakhstan.

Institutional quality as a determinant of development outcomes is a point where resource curse theory intersects with New Institutional Economics, whereas most strands of resource curse theory do not emphasize the role of political institutions in shaping economic institutions the way NIE approaches do. This present work is not a study on institutional quality specifically, which is a multifaceted amalgam of administrative capacity, extractive-sector governance, and broader state capacity to provide public goods. However, in terms of the aspects that it did cover, it found that the most favorable development outcomes mapped onto the only reformist autocracy in the sample. The weakest outcomes were observed either in the clearly predatory case, Angola, or in the post-Soviet case where paternalistic and predatory traits were most difficult to disentangle, Turkmenistan. The country rankings within the Resource Governance Index, a complex indicator of multiple aspects of institutional quality relevant specifically to oil-rich developing countries, did not, however, line up neatly with the rankings in regard to development outcomes in macroeconomic, diversification, or social terms.

As regards state-led development, this present work concludes that state intervention is clearly relevant to development trajectories, but there is no guarantee that state-led policy will automatically become developmental. Turkmenistan's decision to retain state control over large swaths of the economy does not coincide with favorable development outcomes within the group, while Algeria's distributive statism has lined up with the best social development outcomes in the postcolonial group and some structural diversification but with low economic dynamism overall. While Angola is the example Oviatt used in creating the theory of the petro-developmental state, the evidence reviewed here does not yet support the conclusion that Angolanization has produced broad-based structural upgrading. Kazakhstan is the only country in the sample where state action can be classified as developmental in a broad sense: human capital spending, infrastructure investment, financial sector development and the reinvestment of oil rents into non-hydrocarbons sectors appear as part of a wider policy architecture rather than as isolated or purely distributive interventions.

The cases suggest that the relevant theoretical question is not whether oil wealth, institutions, or state intervention are relevant – they clearly are. The question is under what political economy configurations hydrocarbon rents are transmitted from enclave extraction into fiscal stabilization, non-oil productive capacity of tradables, and public goods provision.

6.4. Limitations

As highlighted in subchapter 2.1. on resource curse theory, this present work seeks to contribute to filling a research gap within the field as it is a comparative multi-case study – yet, its findings come with a set of well-defined limitations.

Firstly, as opposed to statistical panels, this present work examines a small number of cases, and as a consequence does not apply statistical methods designed to formally identify causal effects. The sample is not intended to be representative of all oil-producing developing countries but was selected to enable comparison across historically meaningful groups of oil-rich states.

Secondly, it grapples with data limitations of two kinds: on the one hand, as described in subchapter 3.1.3. on data availability, data for some indicators is not available for some countries or for the entirety of the period of interest. Notably, multiple datasets on social development outcomes do not exist or are only available for a limited time period in the case of

Turkmenistan, and the Resource Governance Index is only available across the countries of the sample in its 2017 edition. On the other hand, decisions have been made – as explained in chapter 3 on the sample and methodology – to limit trade data analysis to trade in exported goods, excluding services. It was also not possible to capture diversification in domestic production, employment, services, or internal value chains.

Lastly, indicators are always only able to capture a part of the overall picture of development, which is multifaceted, human, and subject to evaluation not by a universal set of norms but by the ideals and aspirations of the communities that it impacts. Any study that researches development on the basis of indicators must remain cognizant of this limitation. This is especially true for indicators of governance used in this thesis, part of which is perception-based, composite, or methodologically contested, as mentioned again in chapter 3.

Bibliography

- Acemoglu, Daron et al. (2000): *The Colonial Origins of Comparative Development. An Empirical Investigation*. Cambridge, MA: National Bureau of Economic Research (NBER Working Paper Series 7771)
- Acemoglu, Daron et al. (2004): *Institutions as the Fundamental Cause of Long-Run Growth*. Cambridge, MA: National Bureau of Economic Research (NBER Working Paper Series 10481)
- Acemoglu, Daron; Robinson, James A. (2012): *Why Nations Fail. The Origins of Power, Prosperity and Poverty*. London: Profile Books
- Adams, Dawda et al. (2019): Globalisation, governance, accountability and the natural resource 'curse'. Implications for socio-economic growth of oil-rich developing countries. In: *Resources Policy* 61, 128-140.
- Ahmadov, Anar K. (2019): How oil autocracies learn to stop worrying. Central Eurasia in 2008 global financial crisis. In: *Post-Soviet Affairs* 35 (2), 161-180.
- Al-Kasim, Farouk et al. (2013): Corruption and reduced oil production. An additional resource curse factor? In: *Energy Policy* 54, 137-147.
- Alssadek, Marwan; Benhin, James (2021): Oil boom, exchange rate and sectoral output. An empirical analysis of Dutch disease in oil-rich countries. In: *Resources Policy* 74, Article 102362
- Alssadek, Marwan; Benhin, James (2023): Natural resource curse. A literature survey and comparative assessment of regional groupings of oil-rich countries. In: *Resources Policy* 84, Article 103741
- Anceschi, Luca (2009): *Turkmenistan's Foreign Policy. Positive Neutrality and the consolidation of the Turkmen regime*. Abingdon/New York, NY: Routledge (Central Asian Studies 13).
- Arezki, Rabah; Brückner, Markus (2011): Oil rents, corruption, and state stability. Evidence from panel data regressions. In: *European Economic Review* 55, 955-963.
- Auty, Richard M. (2017): Resource-driven models of the development of the political economy. In: Richard M. Auty, Indra de Soysa (eds.): *Wealth and Governance in the Caucasus and Central Asia. Lessons not learned*. Abingdon/New York, NY: Routledge (Central Asia Research Forum), 17-36.
- Beblawi, Hazem (1987): The Rentier State in the Arab World. In: Hazem Beblawi, Giacomo Luciani (eds.): *The Rentier State*. London/New York, NY/Sydney: Croom Helm (Nation, State and Integration in the Arab World II), 49-62.
- Bell, Daniel A. (2015): *The China Model. Political Meritocracy and the Limits of Democracy*. Princeton, NJ/Woodstock: Princeton University Press
- Bohr, Annette (2016): *Turkmenistan. Power, Politics and Petro-Authoritarianism*. London: Chatham House.
- Booth, David; Golooba-Mutebi, Frederick (2012): Developmental patrimonialism? The case of Rwanda. In: *African Affairs* 111 (444), 379-403.
- Boschini, Anne D. et al. (2007): Resource Curse or Not: A Question of Appropriability. In: *Scandinavian Journal of Economics* 109 (3), 593-617.
- Chang, Ha-Joon (2002): *Kicking Away the Ladder. Development Strategy in Historical Perspective*. London: Anthem Press

- Cocx, Lara; Francken, Nathalie (2014): Extending the concept of the resource curse. Natural resources and public spending on health. In: *Ecological Economics* 108, 136-149.
- Cooper Ramo, Joshua (2004): *The Beijing Consensus*. London: The Foreign Policy Centre
- Corden, W. Max; Neary, J. Peter (1982): Booming sector and de-industrialization in a small open economy. In: *The Economic Journal* 92, 825-848.
- Corkin, Lucy (2016): *Uncovering African Agency. Angola's Management of China's Credit Lines*. Abingdon/New York, NY: Routledge
- Davis, Jeffrey M. et al. (2003): Stabilization and Savings Funds for Nonrenewable Resources: Experience and Fiscal Policy Implications. In: Jeffrey M. Davis et al. (eds.): *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*. Washington, DC: International Monetary Fund, 273-315.
- Dunning, Thad (2008): *Crude Democracy. Natural Resource Wealth and Political Regimes*. Cambridge/New York, NY: Cambridge University Press
- Dobronravin, Nikolay (2010): Oil, Gas, Transit, and Boundaries. Problems of the Transport Curse. In: Vladimir Gel'man, Otar Marganiya (eds.): *Resource Curse and Post-Soviet Eurasia. Oil, Gas, and Modernization*. Lanham, MD: Lexington Books, 149-170.
- Duarte Lledó, Victor; Miguel, Marco (2025): *Governance and the Fight Against Corruption in Angola. Quid Vales? Quo Vadis?* Washington, DC: International Monetary Fund (IMF Selected Issues Paper SIP/2025/060)
- EBRD (1994): *Transition report. October 1994*. London: European Bank for Reconstruction and Development.
- EBRD (1995): *Transition report 1995. Investment and enterprise development*. London: European Bank for Reconstruction and Development.
- EBRD (1996): *Transition report 1996. Infrastructure and savings*. London: European Bank for Reconstruction and Development.
- EBRD (1997): *Transition report 1997. Enterprise performance and growth*. London: European Bank for Reconstruction and Development.
- EBRD (1998): *Transition report 1998. Financial sector in transition*. London: European Bank for Reconstruction and Development.
- EBRD (1999): *Transition report 1999. Ten years of transition*. London: European Bank for Reconstruction and Development.
- EBRD (2000): *Transition report 2000. Employment, skills and transition*. London: European Bank for Reconstruction and Development.
- EBRD (2001): *Transition report 2001. Energy in transition*. London: European Bank for Reconstruction and Development.
- EBRD (2002): *Transition report 2002. Agriculture and rural transition*. London: European Bank for Reconstruction and Development.
- EBRD (2003): *Transition report 2003. Integration and regional cooperation*. London: European Bank for Reconstruction and Development.
- EBRD (2004): *Transition report 2004. Infrastructure*. London: European Bank for Reconstruction and Development.
- EBRD (2005): *Transition report 2005. Business in transition*. London: European Bank for Reconstruction and Development.
- EBRD (2006): *Transition report 2006. Finance in transition*. London: European Bank for Reconstruction and Development.

- EBRD (2007): *Transition report 2007. People in transition*. London: European Bank for Reconstruction and Development.
- EBRD (2008): *Transition report 2008. Growth in transition*. London: European Bank for Reconstruction and Development.
- EBRD (2009): *Transition report 2009. Transition in crisis?* London: European Bank for Reconstruction and Development.
- EBRD (2010): *Transition report 2010. Recovery and reform*. London: European Bank for Reconstruction and Development.
- EBRD (2011): *Transition report 2011. Crisis and Transition: The People's Perspective*. London: European Bank for Reconstruction and Development.
- EBRD (2012): *Transition report 2012. Integration across borders*. London: European Bank for Reconstruction and Development.
- EBRD (2013): *Transition report 2013. Stuck in Transition?* London: European Bank for Reconstruction and Development.
- EBRD (2014): *Transition report 2014. Innovation in transition*. London: European Bank for Reconstruction and Development.
- EBRD (2015): *Transition report 2015-2016. Rebalancing finance*. London: European Bank for Reconstruction and Development.
- EBRD (2016): *Transition report 2016-17. Transition for all: Equal opportunities in an unequal world*. London: European Bank for Reconstruction and Development.
- EBRD (2017): *Transition report 2017-18. Sustaining growth*. London: European Bank for Reconstruction and Development.
- EBRD (2018): *Transition report 2018-19. Work in transition*. London: European Bank for Reconstruction and Development.
- EBRD (2019): *Transition report 2019-20. Better governance, better economies*. London: European Bank for Reconstruction and Development.
- EBRD (2020): *Transition report 2020-21. The state strikes back*. London: European Bank for Reconstruction and Development.
- EBRD (2021): *Transition report 2021-22. System upgrade: Delivering the digital dividend*. London: European Bank for Reconstruction and Development.
- EBRD (2022): *Transition report 2022-23. Business unusual*. London: European Bank for Reconstruction and Development.
- EBRD (2023): *Transition report 2023-24. Transitions big and small*. London: European Bank for Reconstruction and Development.
- EBRD (2024): *Transition report 2024-25. Navigating industrial policy*. London: European Bank for Reconstruction and Development.
- EBRD (2025): *Transition report 2025-26. Brave old world*. London: European Bank for Reconstruction and Development.
- Edwards, Zophia (2015): *Boom and Gloom. Comparing Diverse Development Outcomes among Oil- and Mineral-Dependent Developing Countries*. PhD dissertation. Boston, MA: Boston University
- Eifert, Benn et al. (2003): The Political Economy of Fiscal Policy and Economic Management in Oil-Exporting Countries. In: Jeffrey M. Davis et al. (eds.): *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*. Washington, DC: International Monetary Fund, 82-122.

- Entelis, John P. (2012): Sonatrach. The political economy of an Algerian state institution. In: David G. Victor et al. (eds.): *Oil and Governance. State-owned Enterprises and the World Energy Supply*. Cambridge/New York, NY: Cambridge University Press, 557-598.
- Esanov, Akram et al. (2017): Nature's blessing or nature's curse? The political economy of transition in resource-based economies. In: Richard M. Auty, Indra de Soysa (eds.): *Energy, Wealth and Governance in the Caucasus and Central Asia. Lessons not learned*. Abingdon/New York, NY: Routledge (Central Asia Research Forum), 39-56.
- Eslamloueyan, Karim; Jafari, Mahbubeh (2021): Do High Human Capital and Strong Institutions Make Oil-Rich Developing Countries Immune to the Oil Curse? In: *Energy Policy* 158, Article 112563
- Evans, Peter B. (2008): *In Search of the 21st Century Developmental State*. Brighton: University of Sussex (Centre for Global Political Economy Working Paper 4)
- Ferguson, James (2005): Seeing Like an Oil Company. Space, Security, and Global Capital in Neoliberal Africa. In: *American Anthropologist* 107 (3), 377-382.
- Fjeldstad, Odd-Helge et al. (2020): The non-oil tax reform in Angola. Escaping from petroleum dependency? In: *The Extractive Industries and Society* 7, 1189-1199.
- Fu, Hualing (2017): China's Striking Anticorruption Adventure. A Political Journey Toward the Rule of Law? In: Weitseng Chen (ed.): *The Beijing Consensus? How China has Changed Western Ideas of Law and Economic Development*. Cambridge: Cambridge University Press, 249-274.
- Gaukroger, Cressida (2023): *A critical assessment of GDP as a measure of economic performance and social progress*. Dunfermline: Carnegie UK (collective wellbeing)
- Gelb, Alan H. (1988): *Oil Windfalls: Blessing or Curse?* Oxford: Oxford University Press
- George, Alexander L.; Bennett, Andrew (2005): *Case Studies and Theory Development in the Social Sciences*. Cambridge, MA/London: MIT Press (BCSIA Studies in International Security)
- Gueye, Cheikh (2012): Gabon's Experience Managing Oil Wealth. In: Bernardin Akitoby, Sharmini Coorey (eds.): *Oil Wealth in Central Africa. Policies for Inclusive Growth*. Washington, DC: International Monetary Fund, 197-212.
- Hausmann, Ricardo; Rigobon, Roberto (2003): An Alternative Interpretation of the "Resource Curse". Theory and Policy Implications. In: Jeffrey M. Davis et al. (eds.): *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*. Washington, DC: International Monetary Fund, 13-44.
- Heller, Patrick R. P. (2012): Angola's Sonangol. Dexterous right hand of the state. In: David G. Victor et al. (eds.): *Oil and Governance. State-Owned Enterprises and the World Energy Supply*. Cambridge/New York, NY: Cambridge University Press, 836-884.
- Hodges, Tony (2004): *Angola. Anatomy of an Oil State*. Bloomington, IN: Indiana University Press.
- IMF (1995a): *Algeria. Background Paper*. Washington, DC: International Monetary Fund (IMF Staff Country Report 95/54)
- IMF (1995b): *Angola. Recent Economic Developments*. Washington, DC: International Monetary Fund (IMF Staff Country Report 95/122)
- IMF (1995c): *Gabon. Background Paper*. Washington, DC: International Monetary Fund (IMF Staff Country Report 95/129)
- IMF (1996): *Algeria. Selected Issues*. Washington, DC: International Monetary Fund (IMF Staff Country Report 96/71)

- IMF (2003a): *Angola. Selected Issues and Statistical Appendix*. Washington, DC: International Monetary Fund (IMF Staff Country Report 03/292)
- IMF (2003b): *Angola. Staff Report for the 2003 Article IV Consultation*. Washington, DC: International Monetary Fund (IMF Staff Country Report 03/291)
- IMF (2005a): *Gabon. Fourth Review under the Stand-By Arrangement and Review of Financing Assurances*. Washington, DC: International Monetary Fund (IMF Staff Country Report 05/261)
- IMF (2005b): *Gabon. Selected Issues and Statistical Appendix*. Washington, DC: International Monetary Fund (IMF Staff Country Report 05/147)
- IMF (2006): *Algeria. Selected Issues*. Washington, DC: International Monetary Fund (IMF Staff Country Report 06/101)
- IMF (2007): *Gabon. Request for Stand-By Arrangement*. Washington, DC: International Monetary Fund (IMF Staff Country Report 07/174)
- IMF (2009): *Gabon. Second and Third Reviews Under the Stand-By Arrangement and Requests for Waiver of Nonobservance of Performance Criteria and Modification of Performance Criterion*. Washington, DC: International Monetary Fund (IMF Staff Country Report 09/107)
- IMF (2012): *Gabon. Staff Report for the 2012 Article IV Consultation*. Washington, DC: International Monetary Fund (IMF Staff Country Report 13/55)
- IMF (2014): *Angola. Staff Report for the 2014 Article IV Consultation*. Washington, DC: International Monetary Fund (IMF Staff Country Report 14/274)
- IMF (2015): *Gabon. Staff Report for the 2014 Article IV Consultation*. Washington, DC: International Monetary Fund (IMF Staff Country Report 15/47)
- IMF (2018): *Algeria. Staff Report for the 2018 Article IV Consultation*. Washington, DC: International Monetary Fund (IMF Staff Country Report 18/168)
- IMF (2019): *Gabon. Staff Report for the 2019 Article IV Consultation, Fourth and Fifth Reviews of the Extended Arrangement under the Extended Fund Facility, and Request for Waiver of Nonobservance of Performance Criteria, and Rephasing of the Remaining Purchases*. Washington, DC: International Monetary Fund (IMF Staff Country Report 19/389)
- IMF (2021): *Gabon. Request for a Three-Year Extended Arrangement Under the Extended Fund Facility*. Washington, DC: International Monetary Fund (IMF Staff Country Report 21/189)
- IMF (2022): *Gabon. First and Second Reviews Under the Extended Arrangement Under the Extended Fund Facility, Requests for Waivers for Nonobservance of Performance Criteria, Establishment of Performance Criteria, and Financing Assurances Review*. Washington, DC: International Monetary Fund (IMF Staff Country Report 22/216)
- IMF (2023): *Algeria. Selected Issues*. Washington, DC: International Monetary Fund (IMF Staff Country Report 23/69)
- Isham, Jonathan et al. (2005): The Varieties of Resource Experience. Natural Resource Export Structures and the Political Economy of Economic Growth. In: *The World Bank Economic Review* 19 (2), 141-174.
- James, Alexander (2015): The Resource Curse: A Statistical Mirage? In: *Journal of Development Economics* 114, 55-63.
- Jones Luong, Pauline; Weinthal, Erika (2010): *Oil is Not a Curse. Ownership Structure and Institutions in Soviet Successor States*. New York, NY: Cambridge University Press.

- Kalinovsky, Artemy M. (2022): Development in post-war Central Asia. In: Rico Isaacs, Erica Marat (eds.): *Routledge Handbook of Contemporary Central Asia*. Abingdon/New York, NY: Routledge, 56-70.
- Khanna, Arpita Asha (2021): Heading Towards a Welfare Curse? The Interplay of Oil Ownership in Oil-Rich Developing Countries. In: *Energy Research & Social Science* 72, Article 101887
- Kolstad, Ivar et al. (2009): Mission improbable. Does petroleum-related aid address the resource curse? In: *Energy Policy* 37, 954-965.
- Langthaler, Ernst (2021): Soja-Regime: Globale Warenketten und regionale Warenfronten. In: Karin Fischer et al. (eds.): *Globale Warenketten und ungleiche Entwicklung*. Vienna: Mandelbaum (Gesellschaft-Entwicklung-Politik 20), 123-142.
- Laniran, Temitope J.; Adeleke, Damilola (2024): Does natural resource hinder, taxation capacity and accountability? A case of selected oil abundant developing countries. In: *Journal of Social and Economic Development* 26, 499-520.
- Laruelle, Marlene (2022): Russia and Central Asia: Evolving mutual perceptions and the rise of postcolonial perspectives. In: Rico Isaacs, Erica Marat (eds.): *Routledge Handbook of Contemporary Central Asia*. Abingdon/New York, NY: Routledge, 193-201.
- Laruelle, Marlene; Peyrouse, Sebastien (2015): *Globalizing Central Asia. Geopolitics and the Challenges of Economic Development*. Abingdon/New York, NY: Routledge.
- Liebman, Benjamin L. (2017): Authoritarian Justice in China. Is There a “Chinese Model”? In: Weitseng Chen (ed.): *The Beijing Consensus? How China has Changed Western Ideas of Law and Economic Development*. Cambridge: Cambridge University Press, 225-248.
- Lijphart, Arend (1971): Comparative Politics and the Comparative Method. In: *The American Political Science Review* 65 (3), 682-693.
- Luciani, Giacomo (1987): Allocation vs. Production States: A Theoretical Framework. In: Hazem Beblawi, Giacomo Luciani (eds.): *The Rentier State*. London/New York, NY/Sydney: Croom Helm (Nation, State and Integration in the Arab World II), 63-82.
- Lowi, Miriam R. (2009): *Oil Wealth and the Poverty of Politics. Algeria Compared*. Cambridge/New York, NY: Cambridge University Press (Cambridge Middle East Studies 32).
- Marcel, Valérie (2006): *Oil Titans: National Oil Companies in the Middle East*. London: Royal Institute of International Affairs
- Masi, Tania et al. (2024): Is there a fiscal resource curse? Resource rents, fiscal capacity and political institutions in developing economies. In: *World Development* 177, Article 106532
- McPherson, Charles (2003): National Oil Companies: Evolution, Issues, Outlook. In: Jeffrey M. Davis et al. (eds.): *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*. Washington, DC: International Monetary Fund, 184-203.
- Mehlum, Halvor et al. (2006): Institutions and the Resource Curse. In: *The Economic Journal* 116 (508), 1-20.
- Mehrara, Mohsen (2009): Reconsidering the Resource Curse in Oil-Exporting Countries. In: *Energy Policy* 37, 1165-1169.
- Milberg, William (2004): The changing structure of trade linked to global production systems: What are the policy implications? In: *International Labor Review* 143 (1-2), 45-90.

- Milhaupt, Curtis J. (2017): Chinese Corporate Capitalism in Comparative Context. In: Weitseng Chen (ed.): *The Beijing Consensus? How China has Changed Western Ideas of Law and Economic Development*. Cambridge: Cambridge University Press, 275-299.
- Nashabibi, Karim et al. (1998): *Algeria. Stabilization and Transition to the Market*. Washington, DC: International Monetary Fund (IMF Occasional Paper 165)
- Neubert, Dieter (2023): Entwicklungspolitik. Programme, Institutionen, Dokumente. In: Karin Fischer et al. (eds.): *Handbuch Entwicklungsforschung*. Wiesbaden: Springer VS, 383-397.
- Olcott, Martha Brill (2010): *Kazakhstan. Unfulfilled Promise?* Washington, DC: Carnegie Endowment for International Peace
- Ostrowski, Wojciech (2011): Rentierism, Dependency and Sovereignty in Central Asia. In: Sally N. Cummings, Raymond Hinnebusch (eds.): *Sovereignty after Empire. Comparing the Middle East and Central Asia*. Edinburgh: Edinburgh University Press, 282-303.
- Ovadia, Jesse Salah (2016): *The Petro-Developmental State in Africa. Making Oil Work in Angola, Nigeria and the Gulf of Guinea*. London: Hurst & Company
- Ovadia, Jesse Salah (2018): State-led industrial development, structural transformation and elite-led plunder. Angola (2002-2013) as a developmental state. In: *Development Policy Review* 36, 587-606.
- Peyrouse, Sebastien (2015): *Turkmenistan. Strategies of Power, Dilemmas of Development*. Abingdon/New York, NY: Routledge
- Pomfret, Richard (2019): *The Central Asian Economies in the Twenty-First Century. Paving a New Silk Road*. Princeton, NJ: Princeton University Press
- Pomfret, Richard (2022): Economic Reform and Development in Central Asia. In: Rico Isaacs, Erica Marat (eds.): *Routledge Handbook of Contemporary Central Asia*. Abingdon/New York, NY: Routledge, 281-302.
- Przeworski, Adam; Teune, Henry (1970): *The Logic of Comparative Social Inquiry*. New York, NY: Wiley Interscience
- Ramsay, Kristopher W. (2011): Revisiting the Resource Curse. Natural Disasters, the Price of Oil, and Democracy. In: *International Organization* 65 (Summer 2011), 507-529.
- Reed, Kristin (2009): *Crude Existence. Environment and the Politics of Oil in Northern Angola*. Berkeley, CA: University of California Press
- Rosenberg, Christoph B.; Saavalainen, Tapio O. (1998): *How to Deal with Azerbaijan's Oil Boom? Policy Strategies in a Resource-Rich Transition Economy*. Washington, DC: International Monetary Fund (IMF Working Paper WP/98/6).
- Ross, Michael L. (2012): *The Oil Curse. How Petroleum Wealth Shapes the Development of Nations*. Princeton, NJ/Woodstock: Princeton University Press
- Rohwer, Anja (2009): Measuring Corruption. A Comparison between the Transparency International's Corruption Perceptions Index and the World Bank's Worldwide Governance Indicators. In: *CESifo DICE Report* 7 (3), 42-52.
- Rousselot, Hélène (2014): Systemic Change in Two Central Asian Rentier States. Turkmenistan and Kazakhstan. In: Sophie Hohmann, Claire Mouradian, Silvia Serrano, Julien Thorez (eds.): *Development in Central Asia and the Caucasus. Migration, Democratization and Inequality in the Post-Soviet Era*. London: Bloomsbury Publishing, 123-150.
- Qureshi, Mahvash Saeed (2008): *Africa's Oil Abundance and External Competitiveness. Do Institutions Matter?* Washington, DC: International Monetary Fund (IMF Working Paper WP/08/172)

- Sachs, Jeffrey D.; Warner, Andrew M. (1995): *Natural resource abundance and economic growth*. Cambridge, MA: National Bureau of Economic Research (NBER Working Paper Series 5398)
- Shaxson, Nicholas (2007): *Poisoned Wells. The Dirty Politics of African Oil*. New York, NY/Basingstoke: Palgrave Macmillan
- Sievers, Eric W. (2003): *The Post-Soviet Decline of Central Asia. Sustainable development and comprehensive capital*. Abingdon: RoutledgeCurzon
- Schmoll, Moritz; Swenson, Geoffrey (2024): Avoiding the Political Resource Curse: Evidence from a Most-Likely Case. In: *Studies in Comparative International Development* 59, 27-55.
- Soares de Oliveira, Ricardo (2007): Business success, Angola-style: postcolonial politics and the rise and rise of Sonangol. In: *Modern African Studies* 45 (4), 595-619.
- Søreide, Tina (2006): *Is it wrong to rank? A critical assessment of corruption indices*. Bergen: Chr. Michelsen Institute (CMI Working Papers 2006:1).
- Sunley, Emil M. et al. (2003): Revenue from the Oil and Gas Sector: Issues and Country Experience. In: Jeffrey M. Davis et al. (eds.): *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*. Washington, DC: International Monetary Fund, 155-162.
- Travin, Dmitry; Marganiya, Otar (2010): Resource Curse. Rethinking the Soviet Experience. In: Vladimir Gel'man, Otar Marganiya (eds.): *Resource Curse and Post-Soviet Eurasia. Oil, Gas, and Modernization*. Lanham, MD: Lexington Books, 23-48.
- Totaro, Maurizio; Sorbello, Paolo (2022): Oil, Capital and Labour around the Caspian. In: Rico Isaacs, Erica Marat (eds.): *Routledge Handbook of Contemporary Central Asia*. Abingdon/New York, NY: Routledge, 303-318.
- Upham, Frank K. (2017): Lessons from Chinese Growth. Rethinking the Role of Property Rights in Development. In: Weitseng Chen (ed.): *The Beijing Consensus? How China has Changed Western Ideas of Law and Economic Development*. Cambridge: Cambridge University Press, 119-143.
- Wakeman-Linn, John et al. (2003): Oil Funds in Transition Economies: Azerbaijan and Kazakhstan. In: Jeffrey M. Davis et al. (eds.): *Fiscal Policy Formulation and Implementation in Oil-Producing Countries*. Washington, DC: International Monetary Fund, 339-358.
- Werenfels, Isabelle (2002): Obstacles to Privatisation of State-Owned Industries in Algeria: the Political Economy of a Distributive Conflict. In: *The Journal of North African Studies* 7 (1), 1-28.
- Yates, Douglas A. (1996): *The Rentier State in Africa. Oil Rent Dependency and Neocolonialism in the Republic of Gabon*. Trenton, NJ/Asmara: Africa World Press

Appendix A: Data on economic development

Indicator	Source	Variable name	Coverage
<i>GDP/capita PPP</i>	World Bank	NY.GDP.PCAP.PP.CD	1991-2024
<i>unemployment</i>	World Bank	SL.UEM.TOTL.ZS	1991-2024
<i>government debt to GDP</i>	IMF	CG_DEBT_GDP	1991-2024 (DZ, GA) 1994-2024 (AZ) 1995-2024 (AO) 1997-2024 (TM) 2000-2024 (KZ)
<i>current account balance</i>	IMF	BCA_NGDPD	1991-2024 (DZ, AO, GA) 1992-2024 (AZ, KZ) 1997-2024 (TM)
<i>net FDI inflows</i>	World Bank	BX.KLT.DINV.WD.GD.ZS	1991-2024 (DZ, AO, GA) 1992-2024 (KZ, TM) 1993-2024 (AZ)

Appendix B: Data on economic diversification

Indicator	Source	Variable name	Coverage
<i>oil and gas rents to GDP</i>	World Bank	NY.GDP.NGAS.RT.ZS + NY.GDP.PETR.RT.ZS	1991-2024
<i>ECI Trade</i>	Observatory of Economic Complexity		1998-2023 (DZ, AO, GA, KZ) 2001-2023 (AZ, TM)
<i>ECI Research</i>	Observatory of Economic Complexity		1999-2023 (DZ, AZ, KZ) 2005-2023 (GA)
<i>Trade diversification data</i>	UN Comtrade	(tables below)	Self-reported: 1992-2017 (DZ) 2004-2024 (AO) 1993-1994, 1996-2023 (GA) 1996-2024 (AZ) 1995-2024 (KZ) Mirror: 2018-2024 (DZ) 1992-2003 (AO) 1992, 1995, 2024 (GA) 1992-1995 (AZ) 1992-1994 (KZ) 1992-2024 (TM)

AZ Year	Total exports	HS27	HS27 share	Non-HS27	Share	Top2 HS	Sum	Top2 share	Top3 HS	Sum	Top3 share	Top4 HS	Sum	Top4 share
1992r	\$ 43 431 200	\$ 468 481	1,08%	\$ 42 962 719	98,92%	52 top1!	\$ 26 753 010	61,60%	74 top2!	\$ 4 515 933	10,40%	76 top3!	\$ 2 766 645	6,37%
1993r	\$ 73 388 717	\$ 8 733 768	11,90%	\$ 64 654 949	88,10%	52 top1!	\$ 34 667 607	47,24%	76	\$ 5 974 686	8,14%	72	\$ 5 898 865	8,04%
1994r	\$ 72 968 052	\$ 15 301 999	20,97%	\$ 57 666 053	79,03%	52 top1!	\$ 36 408 707	49,90%	57	\$ 4 675 283	6,41%	76	\$ 2 242 266	3,07%
1995r	\$ 149 256 186	\$ 32 648 212	21,87%	\$ 116 607 974	78,13%	52 top1!	\$ 52 815 109	35,39%	26	\$ 8 586 788	5,75%	73	\$ 8 072 453	5,41%
1996	\$ 631 244 846	\$ 419 113 760	66,39%	\$ 212 131 086	33,61%	52	\$ 58 745 312	9,31%	84	\$ 33 548 904	5,31%	39	\$ 23 294 488	3,69%
1997	\$ 781 308 992	\$ 480 111 328	61,45%	\$ 301 197 664	38,55%	52	\$ 123 292 000	15,78%	84	\$ 27 978 280	3,58%	39	\$ 17 996 438	2,30%
1998	\$ 606 149 440	\$ 417 854 048	68,94%	\$ 188 295 392	31,06%	52	\$ 49 334 828	8,14%	84	\$ 20 665 708	3,41%	85	\$ 12 771 986	2,11%
1999	\$ 929 225 537	\$ 730 399 528	78,60%	\$ 198 826 009	21,40%	84	\$ 24 939 275	2,68%	52	\$ 21 742 006	2,34%	24	\$ 21 381 065	2,30%
2000	\$ 1 745 251 936	\$ 1 484 903 845	85,08%	\$ 260 348 091	14,92%	52	\$ 36 541 735	2,09%	89	\$ 27 750 875	1,59%	84	\$ 25 742 512	1,48%
2001	\$ 2 314 282 345	\$ 2 113 594 461	91,33%	\$ 200 687 884	8,67%	84	\$ 28 823 241	1,25%	24	\$ 24 603 184	1,06%	52	\$ 15 189 513	0,66%
2002	\$ 2 167 500 086	\$ 1 927 359 067	88,92%	\$ 240 141 019	11,08%	84	\$ 26 757 357	1,23%	08	\$ 22 976 155	1,06%	52	\$ 22 911 239	1,06%
2003	\$ 2 591 719 389	\$ 2 229 111 228	86,01%	\$ 362 608 161	13,99%	08	\$ 43 322 850	1,67%	15	\$ 41 091 240	1,59%	52	\$ 35 299 963	1,36%
2004	\$ 3 615 449 827	\$ 2 972 491 793	82,22%	\$ 642 958 034	17,78%	89	\$ 138 802 274	3,84%	39	\$ 67 073 421	1,86%	28	\$ 51 017 715	1,41%
2005	\$ 4 347 151 207	\$ 3 337 035 109	76,76%	\$ 1 010 116 098	23,24%	89	\$ 264 840 000	6,09%	08	\$ 146 432 366	3,37%	28	\$ 101 270 961	2,33%
2006	\$ 6 372 164 992	\$ 5 390 285 892	84,59%	\$ 981 879 100	15,41%	28	\$ 157 087 569	2,47%	39	\$ 99 869 898	1,57%	08	\$ 98 704 759	1,55%
2007	\$ 6 058 319 100	\$ 4 931 407 686	81,40%	\$ 1 126 911 414	18,60%	17	\$ 149 724 336	2,47%	08	\$ 124 519 534	2,06%	89	\$ 93 173 571	1,54%
2008	\$ 47 756 229 362	\$ 46 363 077 407	97,08%	\$ 1 393 151 955	2,92%	73	\$ 181 456 666	0,38%	08	\$ 152 254 725	0,32%	89	\$ 124 723 274	0,26%
2009	\$ 14 688 727 691	\$ 13 639 468 957	92,86%	\$ 1 049 258 734	7,14%	89	\$ 167 718 278	1,14%	08	\$ 142 241 671	0,97%	15	\$ 128 867 548	0,88%
2010	\$ 21 278 419 980	\$ 20 110 198 221	94,51%	\$ 1 168 221 759	5,49%	15	\$ 188 255 488	0,88%	89	\$ 175 797 636	0,83%	17	\$ 146 451 888	0,69%
2011	\$ 26 480 188 838	\$ 25 089 288 638	94,75%	\$ 1 390 900 200	5,25%	17	\$ 199 185 033	0,75%	15	\$ 173 756 921	0,66%	08	\$ 152 965 221	0,58%
2012	\$ 23 827 186 078	\$ 22 259 197 907	93,42%	\$ 1 567 988 171	6,58%	15	\$ 221 765 984	0,93%	17	\$ 214 911 162	0,90%	08	\$ 207 986 104	0,87%

2013	\$ 23 904 108 012	\$ 22 229 818 717	93,00%	\$ 1 674 289 295	7,00%	17	\$ 243 480 160	1,02%	15	\$ 227 883 644	0,95%	08	\$ 173 508 092	0,73%
2014	\$ 21 751 737 145	\$ 20 177 193 437	92,76%	\$ 1 574 543 708	7,24%	17	\$ 221 378 555	1,02%	08	\$ 192 165 323	0,88%	15	\$ 190 334 702	0,88%
2015	\$ 12 646 293 676	\$ 11 187 136 856	88,46%	\$ 1 459 156 820	11,54%	08	\$ 220 247 792	1,74%	99	\$ 213 502 281	1,69%	17	\$ 212 207 477	1,68%
2016	\$ 13 380 818 566	\$ 12 270 160 388	91,70%	\$ 1 110 658 178	8,30%	08	\$ 243 755 337	1,82%	07	\$ 129 022 095	0,96%	39	\$ 98 974 754	0,74%
2017	\$ 15 306 018 304	\$ 13 867 167 999	90,60%	\$ 1 438 850 305	9,40%	08	\$ 292 653 866	1,91%	07	\$ 210 089 917	1,37%	71	\$ 127 571 270	0,83%
2018	\$ 19 489 068 203	\$ 17 878 567 387	91,74%	\$ 1 610 500 816	8,26%	08	\$ 325 524 901	1,67%	07	\$ 233 331 337	1,20%	71	\$ 146 669 744	0,75%
2019	\$ 19 635 202 600	\$ 17 800 170 639	90,65%	\$ 1 835 031 961	9,35%	08	\$ 362 567 921	1,85%	07	\$ 243 242 537	1,24%	39	\$ 179 401 965	0,91%
2020	\$ 13 732 637 263	\$ 11 981 306 114	87,25%	\$ 1 751 331 149	12,75%	08	\$ 353 062 904	2,57%	07	\$ 254 392 654	1,85%	71	\$ 198 569 992	1,45%
2021	\$ 22 207 974 784	\$ 19 633 503 063	88,41%	\$ 2 574 471 721	11,59%	39	\$ 442 190 270	1,99%	08	\$ 410 127 216	1,85%	52	\$ 273 002 790	1,23%
2022	\$ 38 146 430 731	\$ 35 299 775 836	92,54%	\$ 2 846 654 895	7,46%	08	\$ 448 792 871	1,18%	39	\$ 386 215 928	1,01%	07	\$ 218 783 250	0,57%
2023	\$ 33 898 554 855	\$ 31 017 150 741	91,50%	\$ 2 881 404 114	8,50%	08	\$ 513 487 104	1,51%	39	\$ 460 787 446	1,36%	07	\$ 212 414 974	0,63%
2024	\$ 26 554 056 764	\$ 23 361 867 691	87,98%	\$ 3 192 189 073	12,02%	08	\$ 496 989 636	1,87%	39	\$ 368 887 302	1,39%	71	\$ 215 328 457	0,81%
Azerbaijan trade diversification data														

KZ Year	Total exports	HS27	HS27 share	Non-HS27	Share	Top2 HS	Sum	Top2 share	Top3 HS	Sum	Top3 share	Top4 HS	Sum	Top4 share
1992r	\$ 263 015 274	\$ 11 610 844	4,41%	\$ 251 404 430	95,59%	31 top1!	\$ 98 072 506	37,29%	72 top2!	\$ 48 694 238	18,51%	74 top3!	\$ 23 378 255	8,89%
1993r	\$ 709 080 807	\$ 44 314 739	6,25%	\$ 664 766 068	93,75%	72 top1!	\$ 227 159 356	32,04%	74 top2!	\$ 90 510 205	12,76%	71 top3!	\$ 88 831 497	12,53%
1994r	\$ 976 876 620	\$ 90 759 838	9,29%	\$ 886 116 782	90,71%	72 top1!	\$ 222 171 248	22,74%	74 top2!	\$ 158 085 862	16,18%	71 top3!	\$ 104 353 095	10,68%
1995	\$ 5 226 721 870	\$ 1 306 308 968	24,99%	\$ 3 920 412 902	75,01%	72	\$ 1 061 967 393	20,32%	74	\$ 612 852 164	11,73%	28	\$ 405 076 795	7,75%
1996	\$ 5 896 832 850	\$ 1 942 601 659	32,94%	\$ 3 954 231 191	67,06%	72	\$ 876 683 508	14,87%	74	\$ 618 776 172	10,49%	10	\$ 428 619 767	7,27%
1997	\$ 6 486 645 811	\$ 2 215 598 154	34,16%	\$ 4 271 047 657	65,84%	72	\$ 950 837 767	14,66%	74	\$ 699 967 872	10,79%	10	\$ 511 740 174	7,89%
1998	\$ 5 403 772 928	\$ 2 068 122 496	38,27%	\$ 3 335 650 432	61,73%	72	\$ 771 340 480	14,27%	74	\$ 581 564 480	10,76%	10	\$ 295 094 144	5,46%
1999	\$ 5 871 274 796	\$ 2 562 446 268	43,64%	\$ 3 308 828 528	56,36%	72	\$ 898 198 471	15,30%	74	\$ 578 578 569	9,85%	28	\$ 319 461 629	5,44%
2000	\$ 8 679 362 200	\$ 4 567 329 200	52,62%	\$ 4 112 033 000	47,38%	72	\$ 1 165 417 600	13,43%	74	\$ 730 317 000	8,41%	10	\$ 496 199 400	5,72%
2001	\$ 8 485 515 400	\$ 4 757 677 400	56,07%	\$ 3 727 838 000	43,93%	72	\$ 1 008 207 300	11,88%	74	\$ 704 126 900	8,30%	10	\$ 343 807 300	4,05%
2002	\$ 9 642 683 000	\$ 5 621 379 600	58,30%	\$ 4 021 303 400	41,70%	72	\$ 1 136 194 800	11,78%	74	\$ 715 362 800	7,42%	28	\$ 391 160 600	4,06%
2003	\$ 12 915 946 500	\$ 7 907 276 200	61,22%	\$ 5 008 670 300	38,78%	72	\$ 1 528 979 300	11,84%	74	\$ 741 580 300	5,74%	10	\$ 564 599 300	4,37%
2004	\$ 20 079 042 632	\$ 12 901 906 643 643	64,26%	\$ 7 177 135 989	35,74%	72	\$ 2 176 930 073	10,84%	74	\$ 1 198 878 552	5,97%	26	\$ 723 958 334	3,61%
2005	\$ 27 846 084 842	\$ 19 525 354 583 583	70,12%	\$ 8 320 730 259	29,88%	72	\$ 2 244 053 232	8,06%	74	\$ 1 507 500 037	5,41%	26	\$ 925 585 338	3,32%
2006	\$ 38 244 423 102	\$ 26 279 307 682 682	68,71%	\$ 11 965 115 420	31,29%	74	\$ 2 631 957 923	6,88%	72	\$ 2 333 633 101	6,10%	28	\$ 1 359 194 603	3,55%
2007	\$ 47 747 902 401	\$ 31 518 616 545 545	66,01%	\$ 16 229 285 856	33,99%	72	\$ 3 745 176 862	7,84%	74	\$ 2 805 081 877	5,87%	28	\$ 1 652 449 531	3,46%
2008	\$ 71 171 956 161	\$ 48 910 889 616 616	68,72%	\$ 22 261 066 545	31,28%	72	\$ 6 271 892 116	8,81%	74	\$ 2 906 249 880	4,08%	26	\$ 2 412 307 762	3,39%
2009	\$ 43 195 762 042	\$ 30 027 169 992 992	69,51%	\$ 13 168 592 050	30,49%	72	\$ 2 970 066 351	6,88%	28	\$ 2 141 534 867	4,96%	26	\$ 1 731 278 956	4,01%
2010	\$ 57 244 063 938	\$ 41 032 905 076 076	71,68%	\$ 16 211 158 862	28,32%	72	\$ 3 683 936 200	6,44%	28	\$ 2 609 221 313	4,56%	26	\$ 2 185 184 553	3,82%
2011	\$ 88 107 933 672	\$ 63 456 286 825 825	72,02%	\$ 24 651 646 847	27,98%	72	\$ 6 122 328 190	6,95%	26	\$ 4 428 111 617	5,03%	74	\$ 3 294 368 125	3,74%
2012	\$ 92 281 520 630	\$ 64 485 650 420 420	69,88%	\$ 27 795 870 210	30,12%	72	\$ 5 890 384 760	6,38%	26	\$ 3 994 003 170	4,33%	74	\$ 3 770 430 830	4,09%

2013	\$ 84 698 536 279	\$ 64 621 311 133	76,30%	\$ 20 077 225 146	23,70%	72	\$ 3 252 494 243	3,84%	28	\$ 3 129 128 949	3,69%	74	\$ 2 921 916 927	3,45%
2014	\$ 79 458 749 145	\$ 60 700 570 856	76,39%	\$ 18 758 178 289	23,61%	72	\$ 3 383 106 874	4,26%	28	\$ 2 839 228 906	3,57%	26	\$ 2 603 412 023	3,28%
2015	\$ 45 954 426 051	\$ 31 119 562 305	67,72%	\$ 14 834 863 746	32,28%	28	\$ 3 105 803 215	6,76%	72	\$ 2 500 772 198	5,44%	74	\$ 2 008 899 405	4,37%
2016	\$ 36 775 323 403	\$ 22 334 960 815	60,73%	\$ 14 440 362 588	39,27%	72	\$ 2 750 894 853	7,48%	28	\$ 2 413 026 785	6,56%	74	\$ 1 918 988 166	5,22%
2017	\$ 48 502 738 958	\$ 30 715 287 929	63,33%	\$ 17 787 451 029	36,67%	72	\$ 4 193 678 689	8,65%	74	\$ 2 543 531 837	5,24%	28	\$ 2 166 916 711	4,47%
2018	\$ 61 108 294 589	\$ 42 796 415 168	70,03%	\$ 18 311 879 421	29,97%	72	\$ 4 167 051 523	6,82%	74	\$ 2 549 144 288	4,17%	28	\$ 2 138 055 354	3,50%
2019	\$ 58 065 248 748	\$ 38 462 878 193	66,24%	\$ 19 602 370 555	33,76%	72	\$ 3 485 132 009	6,00%	74	\$ 2 737 380 657	4,71%	26	\$ 2 727 132 483	4,70%
2020	\$ 47 874 386 710	\$ 27 381 233 570	57,19%	\$ 20 493 153 140	42,81%	26	\$ 3 539 057 953	7,39%	72	\$ 2 508 812 938	5,24%	28	\$ 2 369 116 115	4,95%
2021	\$ 53 068 759 291	\$ 34 818 874 634	65,61%	\$ 18 249 884 657	34,39%	26	\$ 4 173 496 770	7,86%	72	\$ 4 061 182 650	7,65%	28	\$ 2 511 508 213	4,73%
2022	\$ 76 139 804 973	\$ 51 788 935 962	68,02%	\$ 24 350 869 011	31,98%	72	\$ 4 557 811 157	5,99%	26	\$ 4 145 383 625	5,44%	28	\$ 3 574 079 660	4,69%
2023	\$ 78 735 590 866	\$ 46 399 281 047	58,93%	\$ 32 336 309 819	41,07%	26	\$ 4 978 095 302	6,32%	28	\$ 4 347 322 214	5,52%	72	\$ 4 346 880 992	5,52%
2024	\$ 81 612 893 051	\$ 46 290 762 497	56,72%	\$ 35 322 130 554	43,28%	28	\$ 5 484 357 275	6,72%	26	\$ 4 917 152 435	6,02%	72	\$ 4 409 259 143	5,40%
Kazakhstan trade diversification data														

TM Year	Total exports	HS27	HS27 share	Non-HS27	Share	Top2 HS	Sum	Top2 share	Top3 HS	Sum	Top3 share	Top4 HS	Sum	Top4 share
1992r	\$ 62 777 357	\$ 26 529 233	42,26%	\$ 36 248 124	57,74%	52 top1!	\$ 28 921 248	46,07%	57	\$ 1 991 660	3,17%	87	\$ 1 393 398	2,22%
1993r	\$ 192 984 040	\$ 36 567 227	18,95%	\$ 156 416 813	81,05%	52 top1!	\$ 143 947 869	74,59%	57	\$ 2 966 701	1,54%	12	\$ 2 359 255	1,22%
1994r	\$ 366 270 604	\$ 31 346 859	8,56%	\$ 334 923 745	91,44%	52 top1!	\$ 315 667 849	86,18%	41	\$ 4 844 633	1,32%	57	\$ 3 112 144	0,85%
1995r	\$ 693 419 801	\$ 318 317 170	45,91%	\$ 375 102 631	54,09%	52 top1!	\$ 332 692 795	47,98%	41	\$ 6 079 262	0,88%	16	\$ 5 995 231	0,86%
1996r	\$ 2 160 068 108	\$ 1 887 181 330	87,37%	\$ 272 886 778	12,63%	52	\$ 213 467 746	9,88%	25	\$ 10 193 376	0,47%	41	\$ 8 003 232	0,37%
1997r	\$ 1 420 126 933	\$ 1 215 748 246	85,61%	\$ 204 378 687	14,39%	52	\$ 128 986 160	9,08%	57	\$ 11 540 114	0,81%	25	\$ 8 695 176	0,61%
1998r	\$ 322 921 150	\$ 143 022 895	44,29%	\$ 179 898 255	55,71%	52	\$ 106 576 464	33,00%	25	\$ 9 137 590	2,83%	57	\$ 7 844 262	2,43%
1999r	\$ 1 015 398 787	\$ 730 459 315	71,94%	\$ 284 939 472	28,06%	52	\$ 204 625 865	20,15%	88	\$ 17 401 500	1,71%	60	\$ 8 769 449	0,86%
2000r	\$ 1 945 663 173	\$ 1 201 460 780	61,75%	\$ 744 202 393	38,25%	52	\$ 229 225 401	11,78%	61	\$ 20 216 493	1,04%	88	\$ 10 849 380	0,56%
2001r	\$ 2 313 998 866	\$ 2 055 661 994	88,84%	\$ 258 336 872	11,16%	52	\$ 162 484 667	7,02%	61	\$ 26 678 694	1,15%	88	\$ 13 697 373	0,59%
2002r	\$ 2 645 711 378	\$ 2 368 428 039	89,52%	\$ 277 283 339	10,48%	52	\$ 117 582 774	4,44%	61	\$ 32 228 675	1,22%	39	\$ 22 122 848	0,84%
2003r	\$ 2 679 786 463	\$ 2 380 285 767	88,82%	\$ 299 500 696	11,18%	52	\$ 134 996 710	5,04%	39	\$ 38 538 748	1,44%	61	\$ 36 464 030	1,36%
2004r	\$ 3 572 165 242	\$ 3 145 604 358	88,06%	\$ 426 560 884	11,94%	52	\$ 210 844 490	5,90%	39	\$ 46 625 887	1,31%	61	\$ 36 248 808	1,01%
2005r	\$ 4 823 806 210	\$ 4 374 016 270	90,68%	\$ 449 789 940	9,32%	52	\$ 201 883 961	4,19%	39	\$ 63 816 406	1,32%	88	\$ 40 520 611	0,84%
2006r	\$ 5 451 124 001	\$ 4 719 631 850	86,58%	\$ 731 492 151	13,42%	89	\$ 269 614 612	4,95%	52	\$ 250 856 176	4,60%	39	\$ 65 856 340	1,21%
2007r	\$ 6 489 530 057	\$ 5 936 265 542	91,47%	\$ 553 264 515	8,53%	52	\$ 326 393 162	5,03%	39	\$ 70 619 029	1,09%	63	\$ 32 237 394	0,50%
2008r	\$ 9 209 153 721	\$ 7 545 296 461	81,93%	\$ 1 663 857 260	18,07%	99	\$ 1 116 857 665	12,13%	52	\$ 295 978 551	3,21%	39	\$ 89 750 073	0,97%
2009r	\$ 2 281 194 042	\$ 1 623 973 999	71,19%	\$ 657 220 043	28,81%	52	\$ 213 838 343	9,37%	99	\$ 211 772 801	9,28%	39	\$ 72 591 516	3,18%
2010r	\$ 2 680 208 936	\$ 1 851 589 109	69,08%	\$ 828 619 827	30,92%	52	\$ 486 386 132	18,15%	39	\$ 97 816 567	3,65%	63	\$ 32 849 165	1,23%
2011r	\$ 7 434 917 540	\$ 6 721 829 330	90,41%	\$ 713 088 210	9,59%	52	\$ 417 273 962	5,61%	39	\$ 75 706 620	1,02%	63	\$ 44 510 199	0,60%
2012r	\$ 10 773 268 188 502	\$ 9 958 233 502	92,43%	\$ 815 034 686	7,57%	52	\$ 482 008 938	4,47%	39	\$ 134 883 205	1,25%	63	\$ 45 513 414	0,42%

2013r	\$ 11 705 623 424	\$ 10 372 923 676	88,61%	\$ 1 332 699 748	11,39%	52	\$ 629 188 130	5,38%	71	\$ 263 052 607	2,25%	39	\$ 107 356 961	0,92%
2014r	\$ 11 944 385 386	\$ 10 841 255 203	90,76%	\$ 1 103 130 183	9,24%	52	\$ 643 295 580	5,39%	39	\$ 105 873 626	0,89%	63	\$ 61 640 854	0,52%
2015r	\$ 10 109 353 531	\$ 9 408 367 758	93,07%	\$ 700 985 773	6,93%	52	\$ 614 106 220	6,07%	25	\$ 88 521 197	0,88%	39	\$ 87 590 084	0,87%
2016r	\$ 8 059 511 792	\$ 6 803 592 311	84,42%	\$ 1 255 919 481	15,58%	52	\$ 528 057 955	6,55%	89	\$ 219 584 467	2,72%	39	\$ 78 711 992	0,98%
2017r	\$ 8 496 755 411	\$ 7 578 139 276	89,19%	\$ 918 616 135	10,81%	52	\$ 462 217 158	5,44%	31	\$ 103 032 462	1,21%	39	\$ 69 472 173	0,82%
2018r	\$ 8 567 908 041	\$ 7 624 693 052	88,99%	\$ 943 214 989	11,01%	52	\$ 376 509 793	4,39%	31	\$ 114 964 342	1,34%	25	\$ 97 451 982	1,14%
2019r	\$ 12 243 612 131	\$ 11 340 593 342	92,62%	\$ 903 018 789	7,38%	52	\$ 253 100 657	2,07%	31	\$ 167 865 228	1,37%	39	\$ 127 141 099	1,04%
2020r	\$ 10 259 096 411	\$ 9 255 906 743	90,22%	\$ 1 003 189 668	9,78%	31	\$ 202 280 256	1,97%	99	\$ 196 402 022	1,91%	52	\$ 180 689 402	1,76%
2021r	\$ 9 481 590 700	\$ 8 182 029 277	86,29%	\$ 1 299 561 423	13,71%	31	\$ 335 507 867	3,54%	52	\$ 335 057 302	3,53%	39	\$ 170 347 524	1,80%
2022r	\$ 14 270 730 020	\$ 12 757 541 672	89,40%	\$ 1 513 188 348	10,60%	31	\$ 701 622 264	4,92%	52	\$ 273 753 475	1,92%	39	\$ 114 887 190	0,81%
2023r	\$ 15 340 878 441	\$ 14 197 300 791	92,55%	\$ 1 143 577 650	7,45%	31	\$ 698 584 044	4,55%	52	\$ 137 643 911	0,90%	28	\$ 57 675 384	0,38%
2024r	\$ 13 519 663 285	\$ 12 479 942 303	92,31%	\$ 1 039 720 982	7,69%	31	\$ 590 776 900	4,37%	52	\$ 119 171 482	0,88%	28	\$ 84 521 248	0,63%
Turkmenistan trade diversification data														

DZ Year	Total exports	HS27	HS27 share	Non-HS27	Share	Top2 HS	Sum	Top2 share	Top3 HS	Sum	Top3 share	Top4 HS	Sum	Top4 share
1992	\$ 11 136 801 792	\$ 10 759 055 360	96,61%	\$ 377 746 432	3,39%	84	\$ 75 270 840	0,68%	08	\$ 58 821 084	0,53%	72	\$ 50 771 376	0,46%
1993	\$ 10 097 665 024	\$ 9 679 204 352	95,86%	\$ 418 460 672	4,14%	28	\$ 112 786 240	1,12%	72	\$ 62 032 996	0,61%	08	\$ 55 378 088	0,55%
1994	\$ 8 593 806 336	\$ 8 341 998 080	97,07%	\$ 251 808 256	2,93%	72	\$ 56 448 716	0,66%	29	\$ 43 624 124	0,51%	28	\$ 27 616 936	0,32%
1995	\$ 9 356 680 192	\$ 8 909 009 920	95,22%	\$ 447 670 272	4,78%	08	\$ 78 802 040	0,84%	72	\$ 72 013 856	0,77%	29	\$ 45 749 272	0,49%
1996	\$ 11 099 222 016	\$ 10 312 689 664	92,91%	\$ 786 532 352	7,09%	33	\$ 193 987 552	1,75%	39	\$ 93 470 288	0,84%	72	\$ 73 515 544	0,66%
1997	\$ 13 894 123 520	\$ 13 504 073 728	97,19%	\$ 390 049 792	2,81%	28	\$ 78 538 912	0,57%	72	\$ 70 944 880	0,51%	29	\$ 51 373 292	0,37%
1998	\$ 9 838 587 904	\$ 9 543 972 864	97,01%	\$ 294 615 040	2,99%	28	\$ 57 198 764	0,58%	72	\$ 31 721 816	0,32%	25	\$ 29 963 048	0,30%
1999	\$ 12 525 276 632	\$ 12 167 197 361	97,14%	\$ 358 079 271	2,86%	28	\$ 65 012 568	0,52%	72	\$ 43 914 671	0,35%	29	\$ 42 248 361	0,34%
2000	\$ 22 031 287 644	\$ 21 609 834 612	98,09%	\$ 421 453 032	1,91%	28	\$ 77 989 446	0,35%	72	\$ 67 544 943	0,31%	29	\$ 61 614 884	0,28%
2001	\$ 19 147 619 190	\$ 18 692 303 572	97,62%	\$ 455 315 618	2,38%	28	\$ 77 703 199	0,41%	29	\$ 66 158 051	0,35%	72	\$ 53 163 252	0,28%
2002	\$ 18 832 409 255	\$ 18 239 671 059	96,85%	\$ 592 738 196	3,15%	28	\$ 147 198 305	0,78%	72	\$ 141 555 972	0,75%	29	\$ 39 575 096	0,21%
2003	\$ 24 653 655 793	\$ 24 170 900 153	98,04%	\$ 482 755 640	1,96%	28	\$ 116 423 953	0,47%	72	\$ 59 200 694	0,24%	31	\$ 43 994 944	0,18%
2004	\$ 32 076 791 698	\$ 31 485 970 161	98,16%	\$ 590 821 537	1,84%	72	\$ 159 938 217	0,50%	28	\$ 135 347 022	0,42%	31	\$ 44 617 131	0,14%
2005	\$ 46 001 735 483	\$ 45 264 246 598	98,40%	\$ 737 488 885	1,60%	28	\$ 191 420 181	0,42%	72	\$ 162 265 455	0,35%	31	\$ 54 380 088	0,12%
2006	\$ 54 612 721 784	\$ 53 549 474 408	98,05%	\$ 1 063 247 376	1,95%	72	\$ 262 942 009	0,48%	28	\$ 186 316 461	0,34%	74	\$ 105 755 138	0,19%
2007	\$ 60 163 160 346	\$ 59 187 580 206	98,38%	\$ 975 580 140	1,62%	72	\$ 258 974 723	0,43%	28	\$ 197 773 703	0,33%	74	\$ 82 148 412	0,14%
2008	\$ 79 297 591 513	\$ 77 822 473 213	98,14%	\$ 1 475 118 300	1,86%	28	\$ 355 993 579	0,45%	72	\$ 312 558 838	0,39%	25	\$ 189 578 133	0,24%
2009	\$ 45 193 920 241	\$ 44 443 036 596	98,34%	\$ 750 883 645	1,66%	28	\$ 194 457 778	0,43%	72	\$ 105 002 848	0,23%	25	\$ 93 848 108	0,21%
2010	\$ 57 050 973 573	\$ 56 087 312 993	98,31%	\$ 963 660 580	1,69%	28	\$ 240 990 621	0,42%	17	\$ 233 695 313	0,41%	72	\$ 77 452 847	0,14%
2011	\$ 73 436 306 091	\$ 72 212 502 376	98,33%	\$ 1 223 803 715	1,67%	28	\$ 412 481 502	0,56%	17	\$ 267 776 935	0,36%	25	\$ 140 655 866	0,19%
2012	\$ 71 865 748 994	\$ 70 716 188 574	98,40%	\$ 1 149 560 420	1,60%	28	\$ 447 968 939	0,62%	17	\$ 212 025 973	0,30%	25	\$ 157 012 528	0,22%

2013	\$ 65 998 137 595	\$ 64 902 417 480	98,34%	\$ 1 095 720 115	1,66%	28	\$ 949 778 159	1,44%	17	\$ 275 679 039	0,42%	25	\$ 100 252 633	0,15%
2014	\$ 60 387 689 304	\$ 58 713 994 470	97,23%	\$ 1 673 694 834	2,77%	28	\$ 634 907 125	1,05%	31	\$ 311 125 814	0,52%	17	\$ 230 789 180	0,38%
2015	\$ 34 795 951 491	\$ 33 348 366 636	95,84%	\$ 1 447 584 855	4,16%	28	\$ 506 950 425	1,46%	31	\$ 420 989 611	1,21%	17	\$ 150 808 195	0,43%
2016	\$ 29 992 101 470	\$ 28 585 808 907	95,31%	\$ 1 406 292 563	4,69%	31	\$ 447 564 191	1,49%	28	\$ 347 657 312	1,16%	17	\$ 233 922 895	0,78%
2017	\$ 35 191 117 416	\$ 33 822 732 722	96,11%	\$ 1 368 384 694	3,89%	28	\$ 382 935 868	1,09%	31	\$ 327 040 558	0,93%	17	\$ 228 351 017	0,65%
2018r	\$ 42 137 084 336	\$ 39 564 394 131	93,89%	\$ 2 572 690 205	6,11%	31	\$ 926 349 750	2,20%	28	\$ 620 786 887	1,47%	17	\$ 164 665 017	0,39%
2019r	\$ 36 328 110 858	\$ 33 692 458 572	92,74%	\$ 2 635 652 286	7,26%	31	\$ 877 654 838	2,42%	28	\$ 547 198 501	1,51%	17	\$ 197 739 503	0,54%
2020r	\$ 22 125 995 580	\$ 19 782 217 968	89,41%	\$ 2 343 777 612	10,59%	31	\$ 927 182 413	4,19%	28	\$ 395 897 755	1,79%	17	\$ 250 099 826	1,13%
2021r	\$ 38 607 310 790	\$ 33 862 949 619	87,71%	\$ 4 744 361 171	12,29%	31	\$ 1 382 392 871	3,58%	28	\$ 939 382 286	2,43%	72	\$ 889 525 673	2,30%
2022r	\$ 65 208 936 745	\$ 58 033 045 336	89,00%	\$ 7 175 891 409	11,00%	31	\$ 2 305 588 466	3,54%	28	\$ 1 603 795 220	2,46%	72	\$ 1 056 486 423	1,62%
2023r	\$ 55 786 882 891	\$ 50 483 741 479	90,49%	\$ 5 303 141 412	9,51%	31	\$ 1 364 509 352	2,45%	72	\$ 1 141 328 754	2,05%	25	\$ 906 634 372	1,63%
2024r	\$ 48 276 562 839	\$ 43 741 701 297	90,61%	\$ 4 534 861 542	9,39%	31	\$ 1 048 466 734	2,17%	28	\$ 1 039 967 970	2,15%	72	\$ 731 036 954	1,51%
Algeria trade diversification data														

AO Year	Total exports	HS27	HS27 share	Non-HS27	Share	Top2 HS	Sum	Top2 share	Top3 HS	Sum	Top3 share	Top4 HS	Sum	Top4 share
1992r	\$ 2 894 879 058	\$ 2 840 895 916	98,14%	\$ 53 983 142	1,86%	71	\$ 24 621 574	0,85%	03	\$ 10 788 941	0,37%	09	\$ 6 135 424	0,21%
1993r	\$ 2 865 810 215	\$ 2 829 960 114	98,75%	\$ 35 850 101	1,25%	03	\$ 14 124 726	0,49%	71	\$ 6 371 008	0,22%	99	\$ 4 510 504	0,16%
1994r	\$ 3 056 539 197	\$ 2 996 904 902	98,05%	\$ 59 634 295	1,95%	03	\$ 24 220 115	0,79%	71	\$ 16 194 900	0,53%	99	\$ 5 282 349	0,17%
1995r	\$ 3 606 036 203	\$ 3 384 478 059	93,86%	\$ 221 558 144	6,14%	71	\$ 161 741 917	4,49%	03	\$ 31 243 389	0,87%	99	\$ 5 861 531	0,16%
1996r	\$ 4 670 605 429	\$ 4 353 112 448	93,20%	\$ 317 492 981	6,80%	71	\$ 253 573 449	5,43%	03	\$ 31 027 223	0,66%	99	\$ 10 814 132	0,23%
1997r	\$ 4 702 848 573	\$ 4 299 563 551	91,42%	\$ 403 285 022	8,58%	71	\$ 322 973 497	6,87%	03	\$ 38 330 729	0,82%	09	\$ 6 171 448	0,13%
1998r	\$ 3 827 972 357	\$ 3 402 868 899	88,89%	\$ 425 103 458	11,11%	71	\$ 352 733 636	9,21%	03	\$ 32 466 555	0,85%	84	\$ 10 860 843	0,28%
1999r	\$ 4 787 988 022	\$ 4 174 179 426	87,18%	\$ 613 808 596	12,82%	71	\$ 551 142 335	11,51%	03	\$ 24 140 369	0,50%	84	\$ 6 248 164	0,13%
2000r	\$ 7 986 491 423	\$ 7 278 158 639	91,13%	\$ 708 332 784	8,87%	71	\$ 637 585 314	7,98%	03	\$ 36 435 339	0,46%	99	\$ 6 015 753	0,08%
2001r	\$ 6 574 195 508	\$ 5 940 338 003	90,36%	\$ 633 857 505	9,64%	71	\$ 556 900 708	8,47%	03	\$ 41 826 559	0,64%	99	\$ 6 265 320	0,10%
2002r	\$ 7 937 658 451	\$ 7 345 599 156	92,54%	\$ 592 059 295	7,46%	71	\$ 495 134 099	6,24%	03	\$ 43 080 077	0,54%	84	\$ 17 537 900	0,22%
2003r	\$ 9 322 134 085	\$ 8 973 687 527	96,26%	\$ 348 446 558	3,74%	71	\$ 277 254 616	2,97%	73	\$ 13 036 834	0,14%	03	\$ 8 730 043	0,09%
2004	\$ 13 253 616 784	\$ 12 385 219 025	93,45%	\$ 868 397 759	6,55%	71	\$ 765 225 998	5,77%	84	\$ 37 844 425	0,29%	03	\$ 33 343 920	0,25%
2005	\$ 23 668 205 179	\$ 22 558 576 892	95,31%	\$ 1 109 628 287	4,69%	71	\$ 965 812 011	4,08%	03	\$ 57 164 905	0,24%	84	\$ 48 593 973	0,21%
2006	\$ 31 844 185 776	\$ 30 548 441 305	95,93%	\$ 1 295 744 471	4,07%	71	\$ 1 144 951 936	3,60%	84	\$ 54 537 093	0,17%	73	\$ 27 848 337	0,09%
2007?	\$ 44 177 783 071	\$ 42 952 519 227	97,23%	\$ 1 225 263 844	2,77%	71	\$ 1 181 943 962	2,68%	03	\$ 42 575 360	0,10%	09	\$ 413 269	0,00%
2008	\$ 65 772 699 298	\$ 63 682 209 683	96,82%	\$ 2 090 489 615	3,18%	71	\$ 1 239 911 709	1,89%	89	\$ 501 969 930	0,76%	84	\$ 152 882 501	0,23%
2009?	\$ 40 639 411 732	\$ 39 792 628 598	97,92%	\$ 846 783 134	2,08%	71	\$ 813 613 812	2,00%	03	\$ 32 169 994	0,08%	09	\$ 810 420	0,00%
2010?	\$ 52 612 114 761	\$ 51 511 230 653	97,91%	\$ 1 100 884 108	2,09%	71	\$ 1 072 039 839	2,04%	03	\$ 28 075 125	0,05%	09	\$ 569 625	0,00%
2011?	\$ 66 427 390 220	\$ 65 192 495 550	98,14%	\$ 1 234 894 670	1,86%	71	\$ 1 209 184 374	1,82%	03	\$ 24 749 315	0,04%	09	\$ 960 981	0,00%
2012?	\$ 70 863 076 413	\$ 69 708 124 751	98,37%	\$ 1 154 951 662	1,63%	71	\$ 1 110 222 942	1,57%	03	\$ 43 681 174	0,06%	09	\$ 1 047 546	0,00%

2013?	\$ 67 712 526 547	\$ 66 505 388 303	98,22%	\$ 1 207 138 244	1,78%	71	\$ 1 156 063 734	1,71%	03	\$ 49 146 741	0,07%	44	\$ 1 336 889	0,00%
2014?	\$ 58 672 369 190	\$ 57 336 235 615	97,72%	\$ 1 336 133 575	2,28%	71	\$ 1 274 009 584	2,17%	03	\$ 48 757 176	0,08%	25	\$ 7 199 794	0,01%
2015	\$ 33 924 937 478	\$ 31 894 838 588	94,02%	\$ 2 030 098 890	5,98%	71	\$ 1 087 529 125	3,21%	84	\$ 272 421 773	0,80%	89	\$ 249 358 253	0,74%
2016	\$ 28 057 499 522	\$ 26 009 598 468	92,70%	\$ 2 047 901 054	7,30%	71	\$ 978 584 560	3,49%	84	\$ 869 647 891	3,10%	73	\$ 137 327 013	0,49%
2017	\$ 34 904 881 109	\$ 33 051 869 064	94,69%	\$ 1 853 012 045	5,31%	71	\$ 1 131 454 644	3,24%	84	\$ 203 419 135	0,58%	44	\$ 90 583 669	0,26%
2018	\$ 40 664 718 815	\$ 38 904 303 030	95,67%	\$ 1 760 415 785	4,33%	71	\$ 1 180 883 245	2,90%	44	\$ 151 718 454	0,37%	84	\$ 109 590 252	0,27%
2019	\$ 35 432 454 858	\$ 33 387 700 563	94,23%	\$ 2 044 754 295	5,77%	71	\$ 1 229 993 203	3,47%	89	\$ 651 538 602	1,84%	84	\$ 137 347 742	0,39%
2020	\$ 22 134 505 473	\$ 19 687 858 157	88,95%	\$ 2 446 647 316	11,05%	71	\$ 1 108 221 882	5,01%	89	\$ 950 427 492	4,29%	84	\$ 82 950 854	0,37%
2021	\$ 34 472 161 956	\$ 31 318 918 599	90,85%	\$ 3 153 243 357	9,15%	71	\$ 1 537 399 842	4,46%	89	\$ 1 166 123 104	3,38%	84	\$ 84 258 685	0,24%
2022	\$ 51 274 951 711	\$ 47 576 310 443	92,79%	\$ 3 698 641 268	7,21%	71	\$ 1 987 537 792	3,88%	83	\$ 1 100 889 529	2,15%	84	\$ 129 666 207	0,25%
2023	\$ 39 505 783 208	\$ 35 115 546 788	88,89%	\$ 4 390 236 420	11,11%	89	\$ 2 103 734 746	5,33%	71	\$ 1 590 770 254	4,03%	84	\$ 163 816 766	0,41%
2024	\$ 39 250 263 061	\$ 34 198 326 779	87,13%	\$ 5 051 936 282	12,87%	89	\$ 2 713 951 808	6,91%	71	\$ 1 534 209 088	3,91%	84	\$ 192 296 210	0,49%
Angola trade diversification data														

GA Year	Total exports	HS27	HS27 share	Non-HS27	Share	Top2 HS	Sum	Top2 share	Top3 HS	Sum	Top3 share	Top4 HS	Sum	Top4 share
1992r	\$ 1 604 164 676	\$ 1 376 298 459	85,80%	\$ 227 866 217	14,20%	44	\$ 109 420 556	6,82%	26	\$ 89 777 036	5,60%	28	\$ 5 387 209	0,34%
1993	\$ 2 637 019 136	\$ 2 355 388 160	89,32%	\$ 281 630 976	10,68%	26	\$ 161 002 320	6,11%	44	\$ 80 475 168	3,05%	28	\$ 15 119 497	0,57%
1994	\$ 2 391 037 952	\$ 2 070 655 616	86,60%	\$ 320 382 336	13,40%	44	\$ 211 116 896	8,83%	26	\$ 81 288 208	3,40%	28	\$ 8 364 556	0,35%
1995r	\$ 2 724 766 138	\$ 1 982 874 807	72,77%	\$ 741 891 331	27,23%	44	\$ 469 273 453	17,22%	26	\$ 185 835 989	6,82%	28	\$ 49 575 825	1,82%
1996	\$ 3 145 602 816	\$ 2 608 624 512	82,93%	\$ 536 978 304	17,07%	44	\$ 423 678 496	13,47%	26	\$ 63 308 896	2,01%	28	\$ 11 684 875	0,37%
1997	\$ 2 631 111 668	\$ 2 041 793 247	77,60%	\$ 589 318 421	22,40%	44	\$ 371 518 820	14,12%	26	\$ 150 117 438	5,71%	28	\$ 9 804 434	0,37%
1998	\$ 2 602 773 532	\$ 2 162 785 073	83,10%	\$ 439 988 459	16,90%	44	\$ 274 862 841	10,56%	26	\$ 68 567 533	2,63%	88	\$ 23 231 209	0,89%
1999	\$ 2 072 117 903	\$ 1 626 127 071	78,48%	\$ 445 990 832	21,52%	44	\$ 309 271 354	14,93%	26	\$ 47 757 107	2,30%	88	\$ 28 374 042	1,37%
2000	\$ 2 601 484 084	\$ 2 167 699 867	83,33%	\$ 433 784 217	16,67%	44	\$ 341 889 233	13,14%	26	\$ 44 404 497	1,71%	03	\$ 12 558 089	0,48%
2001	\$ 2 520 872 259	\$ 2 091 074 073	82,95%	\$ 429 798 186	17,05%	44	\$ 331 089 389	13,13%	26	\$ 37 556 262	1,49%	03	\$ 9 748 147	0,39%
2002	\$ 2 411 129 826	\$ 2 020 960 439	83,82%	\$ 390 169 387	16,18%	44	\$ 291 081 933	12,07%	26	\$ 42 210 245	1,75%	88	\$ 11 843 966	0,49%
2003	\$ 2 826 852 075	\$ 2 498 127 013	88,37%	\$ 328 725 062	11,63%	44	\$ 206 252 450	7,30%	89	\$ 35 629 163	1,26%	26	\$ 29 356 487	1,04%
2004	\$ 2 786 374 933	\$ 2 122 757 776	76,18%	\$ 663 617 157	23,82%	44	\$ 373 182 871	13,39%	26	\$ 151 488 238	5,44%	88	\$ 30 301 628	1,09%
2005	\$ 5 068 411 758	\$ 4 259 663 728	84,04%	\$ 808 748 030	15,96%	44	\$ 475 161 769	9,37%	26	\$ 178 755 987	3,53%	84	\$ 24 756 031	0,49%
2006	\$ 6 015 409 905	\$ 5 149 847 520	85,61%	\$ 865 562 385	14,39%	44	\$ 501 806 666	8,34%	26	\$ 186 750 515	3,10%	88	\$ 65 199 474	1,08%
2007	\$ 6 302 024 820	\$ 5 256 718 357	83,41%	\$ 1 045 306 463	16,59%	44	\$ 664 573 792	10,55%	26	\$ 222 960 517	3,54%	88	\$ 46 864 764	0,74%
2008	\$ 9 565 944 258	\$ 8 530 160 703	89,17%	\$ 1 035 783 555	10,83%	44	\$ 633 631 741	6,62%	26	\$ 206 861 880	2,16%	40	\$ 55 891 269	0,58%
2009	\$ 5 355 977 813	\$ 4 453 018 307	83,14%	\$ 902 959 506	16,86%	44	\$ 558 463 858	10,43%	26	\$ 159 040 861	2,97%	84	\$ 64 438 522	1,20%
2010	\$ 8 686 266 905	\$ 7 819 709 432	90,02%	\$ 866 557 473	9,98%	44	\$ 413 641 421	4,76%	26	\$ 211 587 343	2,44%	90	\$ 46 603 755	0,54%
2011	\$ 5 204 267 218	\$ 4 467 984 230	85,85%	\$ 736 282 988	14,15%	44	\$ 300 198 871	5,77%	26	\$ 196 975 793	3,78%	40	\$ 85 997 477	1,65%
2012	\$ 12 128 808 585	\$ 8 647 844 684	71,30%	\$ 3 480 963 901	28,70%	89	\$ 2 567 582 194	21,17%	44	\$ 259 187 440	2,14%	84	\$ 204 213 094	1,68%

2013	\$ 13 039 305 888	\$ 8 576 912 869	65,78%	\$ 4 462 393 019	34,22%	89	\$ 3 617 324 704	27,74%	44	\$ 260 289 656	2,00%	26	\$ 180 645 806	1,39%
2014	\$ 13 913 850 951	\$ 7 979 129 249	57,35%	\$ 5 934 721 702	42,65%	89	\$ 4 944 370 554	35,54%	44	\$ 318 298 479	2,29%	84	\$ 162 543 376	1,17%
2015	\$ 10 653 514 596	\$ 4 469 659 772	41,95%	\$ 6 183 854 824	58,05%	89 top1!	\$ 4 916 294 229	46,15%	84	\$ 375 503 018	3,52%	44	\$ 317 275 308	2,98%
2016	\$ 9 503 498 983	\$ 2 934 904 307	30,88%	\$ 6 568 594 676	69,12%	89 top1!	\$ 5 366 935 578	56,47%	44	\$ 484 581 155	5,10%	84	\$ 210 053 853	2,21%
2017	\$ 5 771 027 203	\$ 3 595 039 649	62,29%	\$ 2 175 987 554	37,71%	89	\$ 1 258 225 182	21,80%	44	\$ 468 069 032	8,11%	26	\$ 180 639 656	3,13%
2018	\$ 8 583 858 209	\$ 4 588 740 071	53,46%	\$ 3 995 118 138	46,54%	89	\$ 1 866 691 007	21,75%	84	\$ 1 002 926 324	11,68%	44	\$ 579 341 644	6,75%
2019	\$ 7 713 542 886	\$ 4 232 088 547	54,87%	\$ 3 481 454 339	45,13%	89	\$ 1 842 156 484	23,88%	44	\$ 610 532 195	7,92%	84	\$ 496 224 964	6,43%
2020	\$ 7 344 786 430	\$ 3 886 819 738	52,92%	\$ 3 457 966 692	47,08%	89	\$ 1 869 420 153	25,45%	44	\$ 709 158 168	9,66%	26	\$ 448 647 157	6,11%
2021	\$ 8 031 167 846	\$ 4 201 994 198	52,32%	\$ 3 829 173 648	47,68%	89	\$ 1 967 552 773	24,50%	44	\$ 883 655 334	11,00%	26	\$ 537 932 975	6,70%
2022	\$ 10 470 456 478	\$ 7 041 198 031	67,25%	\$ 3 429 258 447	32,75%	89	\$ 1 015 391 153	9,70%	44	\$ 975 677 652	9,32%	26	\$ 667 991 957	6,38%
2023	\$ 12 694 967 528	\$ 6 853 576 667	53,99%	\$ 5 841 390 861	46,01%	26	\$ 2 952 947 837	23,26%	89	\$ 1 622 659 276	12,78%	44	\$ 837 254 916	6,60%
2024r?	\$ 8 060 095 686	\$ 5 439 397 472	67,49%	\$ 2 620 698 214	32,51%	26	\$ 1 700 235 700	21,09%	44	\$ 716 728 367	8,89%	15	\$ 112 841 180	1,40%
Gabon trade diversification data														

Legend:

YYYYr = mirror data

YYYY? = likely incomplete dataset

HS code legend:

03 Fish and crustaceans, molluscs and other aquatic invertebrates

07 Edible vegetables and certain roots and tubers

08 Edible fruits and nuts; peel of citrus fruit or melons

09 Coffee, tea, maté and spices

10 Cereals

12 Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit, industrial or medicinal plants; straw and fodder

15 Animal, vegetable or microbial fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes

16 Meat, fish or crustaceans, molluscs or other aquatic invertebrates; preparations thereof

17 Sugars and sugar confectionery

24 Tobacco and manufactured tobacco substitutes; products, whether or not containing nicotine, intended for inhalation without combustion; other nicotine containing products intended for the intake of nicotine into the human body

25 Salt; sulphur; earths, stone; plastering materials, lime and cement

26 Ores, slag and ash

27 Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes

28 Inorganic chemicals; organic or inorganic compounds of precious metals, of rare-earth metals, of radioactive elements or of isotopes

29 Organic chemicals

31 Fertilizers

33 Essential oils and resinoids; perfumery, cosmetic or toilet preparations

39 Plastics and articles thereof

40 Rubber and articles thereof

41 Raw hides and skins (other than furskins) and leather

44 Wood and articles of wood; wood charcoal

52 Cotton

57 Carpets and other textile floor coverings

60 Fabrics; knitted or crocheted

61 Apparel and clothing accessories; knitted or crocheted

63 Textiles, made up articles; sets; worn clothing and worn textile articles; rags

71 Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metals and articles thereof; imitation jewellery; coin

72 Iron and steel

73 Articles of iron or steel

74 Copper and articles thereof

76 Aluminium and articles thereof

83 Miscellaneous articles of base metal

84 Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof

85 Electrical machinery and equipment and parts thereof; sound recorders and reproducers, television image and sound recorders and reproducers, and parts and accessories of such articles

87 Vehicles; other than railway or tramway rolling stock, and parts and accessories thereof

88 Aircraft, spacecraft and parts thereof

89 Ships, boats and floating structures

90 Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts and accessories thereof

99 Commodities not specified according to kind

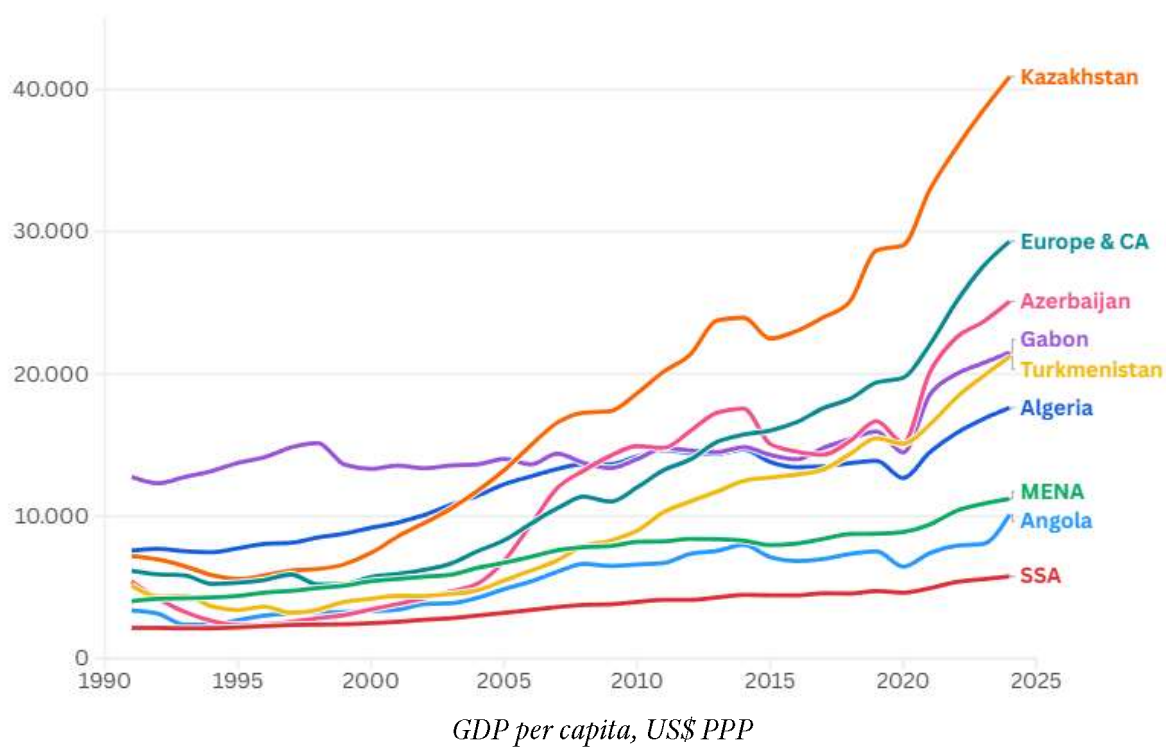
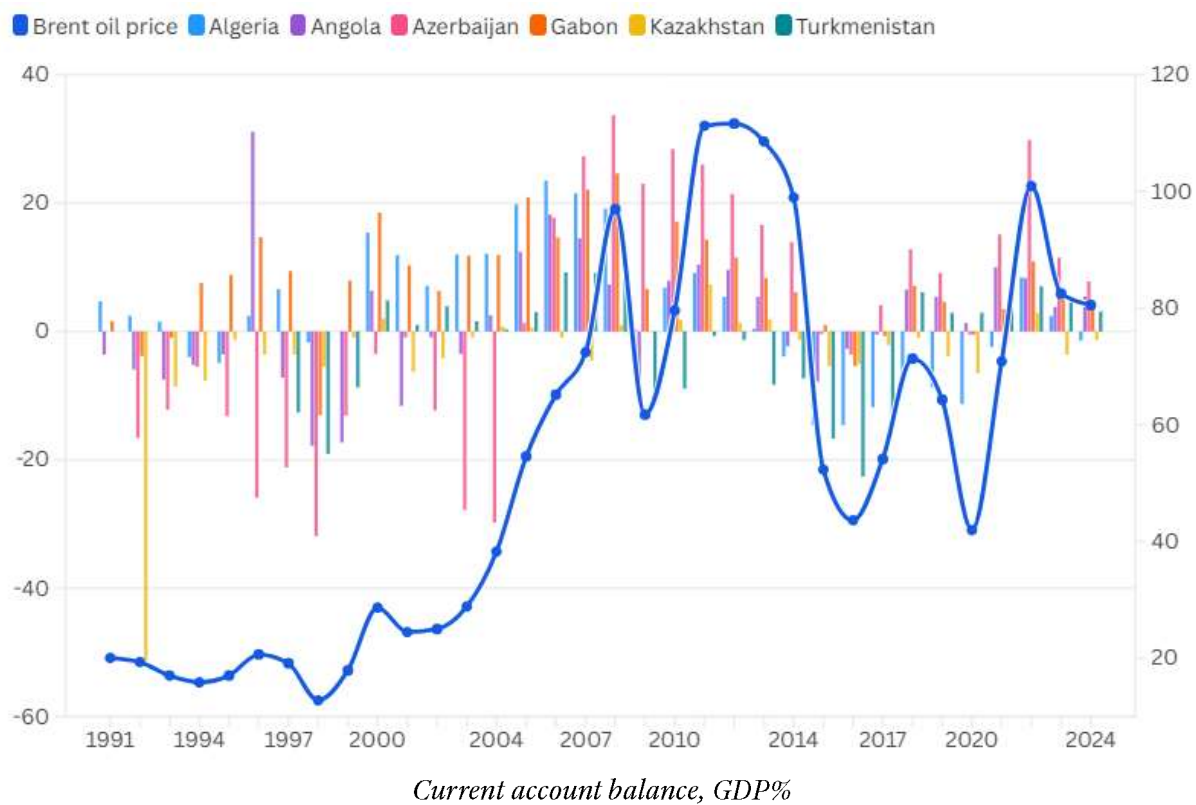
Appendix C: Data on social development

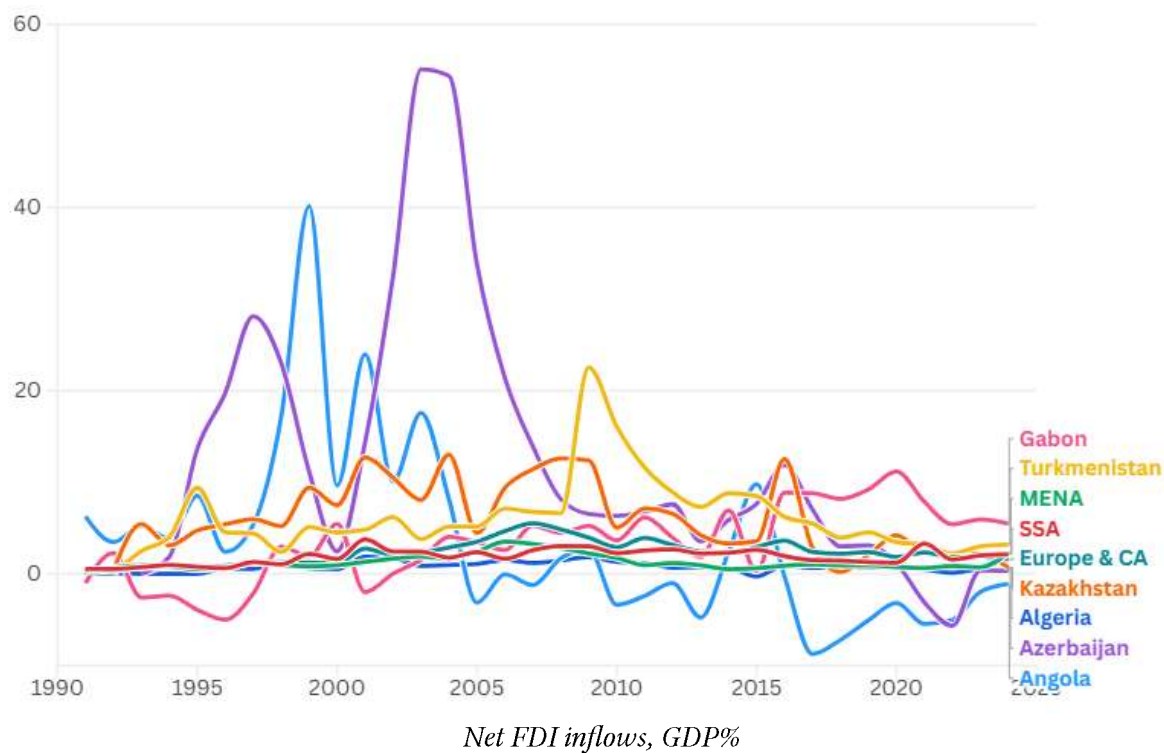
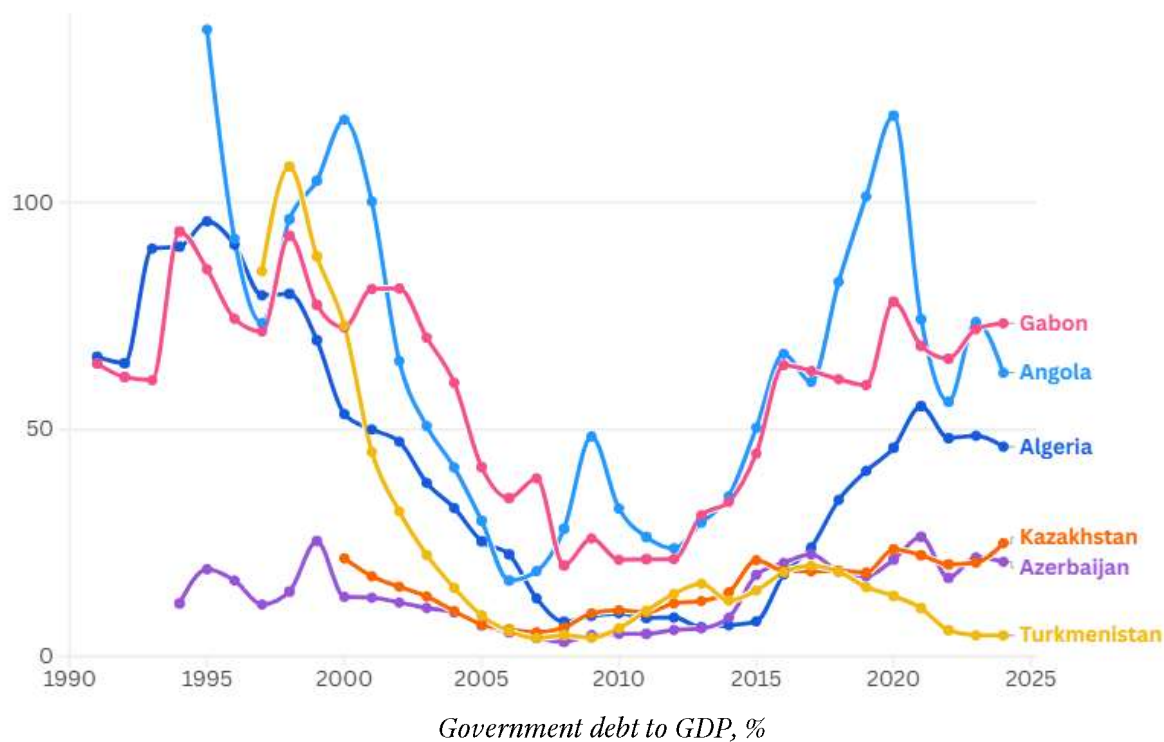
Indicator	Source	Coverage
<i>HDI</i>	UNDP	1991-2023 (DZ, GA, AZ, KZ) 1999-2023 (AO) 2004-2022 (TM)
<i>poverty headcount ratio at \$3.65/day</i>	World Data Lab for Sustainable Development Report 2025	2000-2025 no data (TM)
<i>neonatal mortality per 1000 live births</i>	UN Inter-agency Group for Child Mortality estimation for Sustainable Development Report 2025	2000-2023
<i>life expectancy at birth</i>	UNDESA for Sustainable Development Report 2025	2000-2023
<i>population using at least basic drinking water services</i>	JMP for Sustainable Development Report 2025	2000-2022 (DZ, AO, GA, AZ, TM) 2000-2021 (KZ)
<i>population using at least basic sanitation services</i>	JMP for Sustainable Development Report 2025	2000-2022 (DZ, AO, GA, KZ, TM) 2000-2019 (AZ)
<i>population with access to electricity</i>	IEA, IRENA, UNSD, World Bank, WHO for Sustainable Development Report 2025	2000-2022
<i>internet users</i>	World Bank IT.NET.USER.ZS	1994-2023 (DZ, AO, GA, AZ, KZ) 1994-2017 (TM)
<i>government spending on health and education</i>	UNESCO for Sustainable Development Report 2025	2000-2023 (AZ) 2000-2022 (AO, GA, KZ) 2008-2023 (DZ) 2012-2023 (TM)

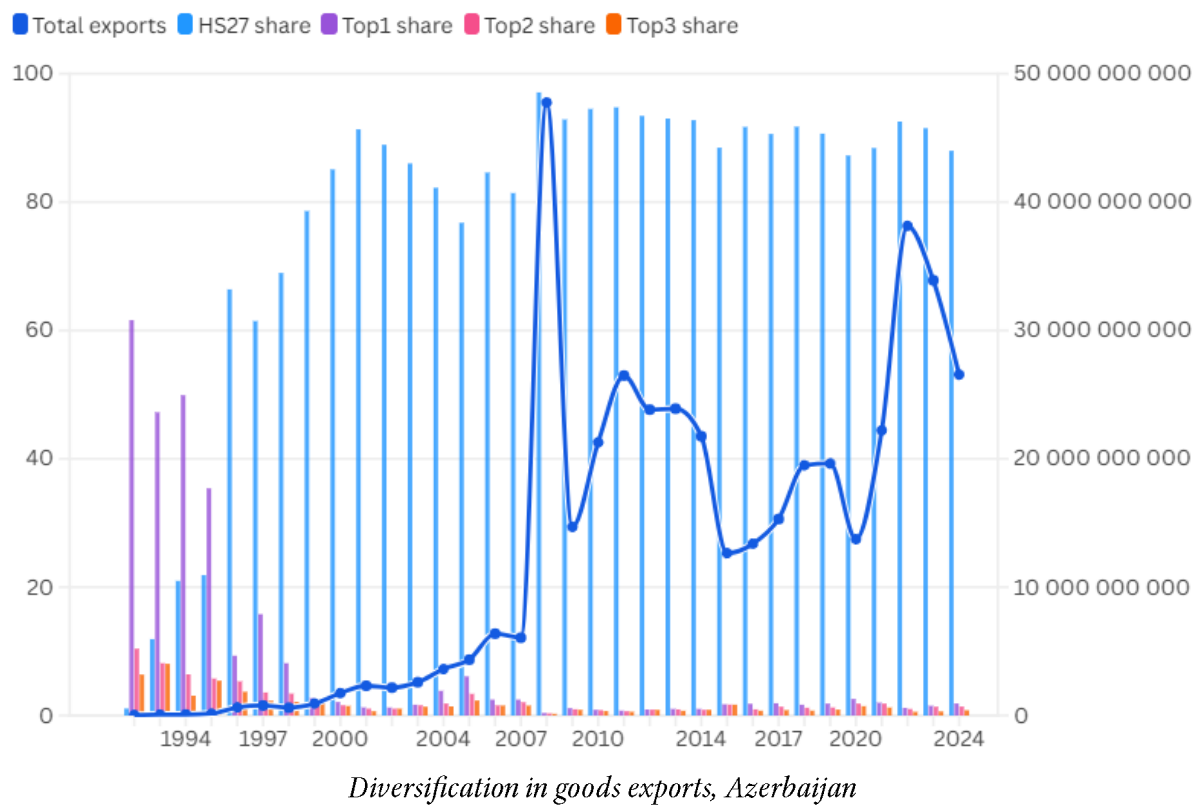
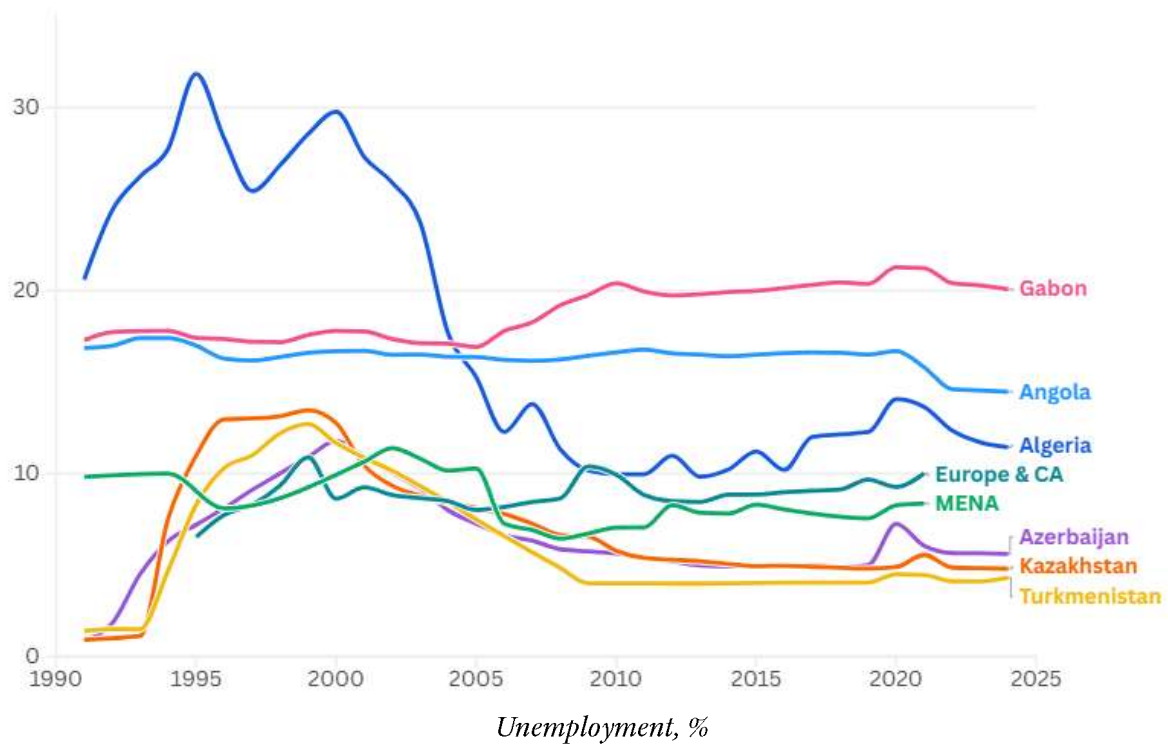
Appendix D: Data on governance

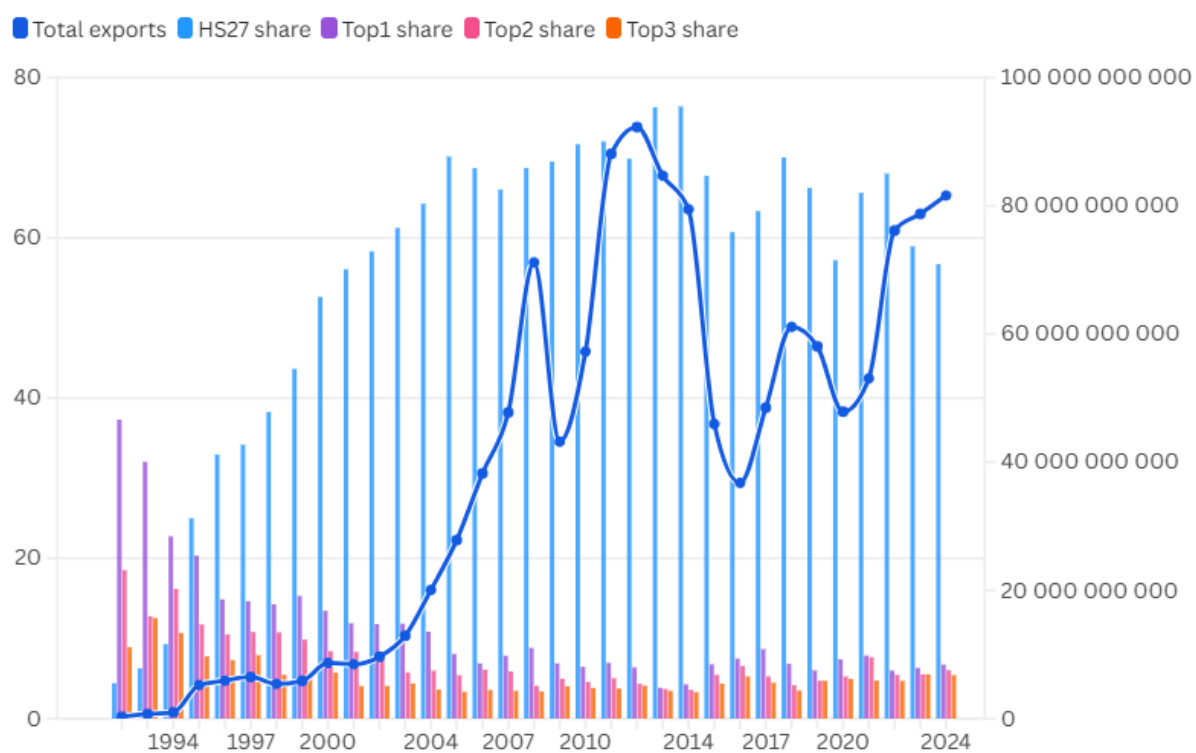
Indicator	Source	Variable name
<i>government effectiveness</i>	World Bank	GE.PER.RNK
<i>regulatory quality</i>	World Bank	RQ.PER.RNK
<i>control of corruption</i>	World Bank	CC.PER.RNK
<i>voice and accountability</i>	World Bank	VA.PER.RNK
<i>rule of law</i>	World Bank	RL.PER.RNK
<i>political stability</i>	World Bank	PS.PER.RNK
<i>Corruption Perceptions Index</i>	Transparency International	
<i>Press Freedom Index</i>	Reporters sans frontières	

Appendix E: Data visualizations

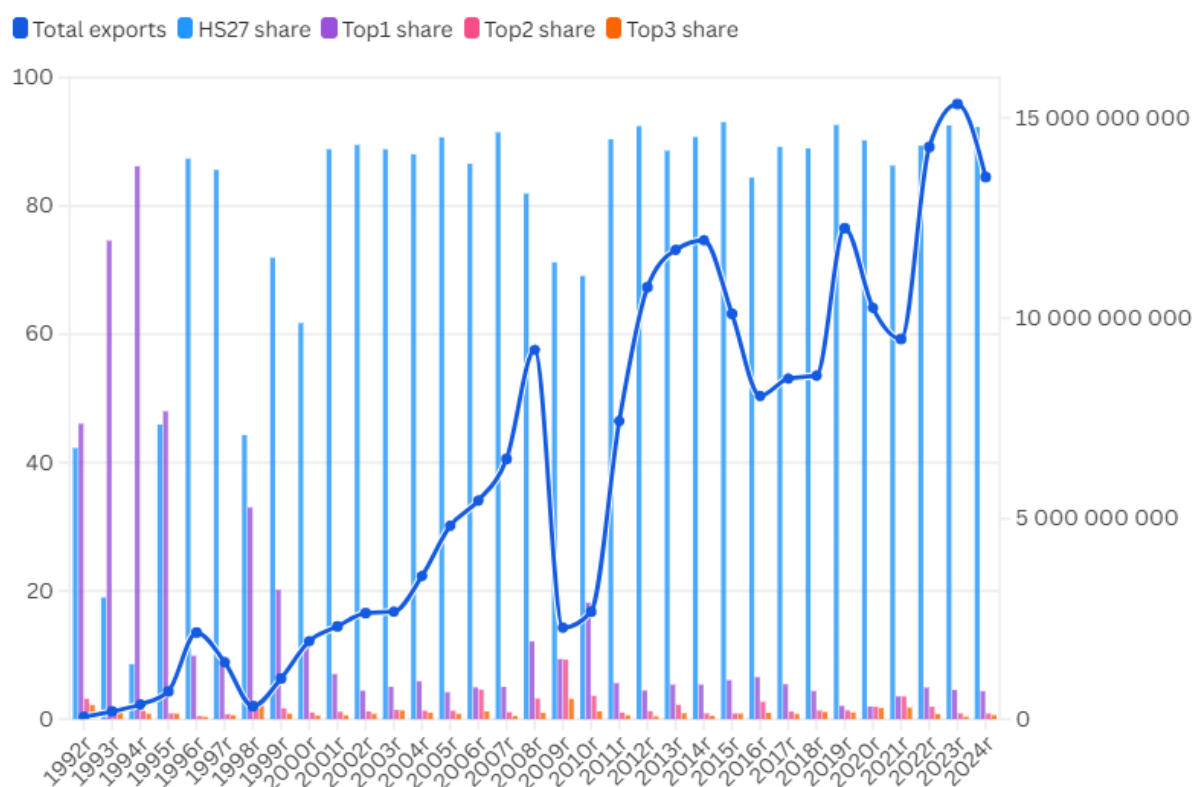




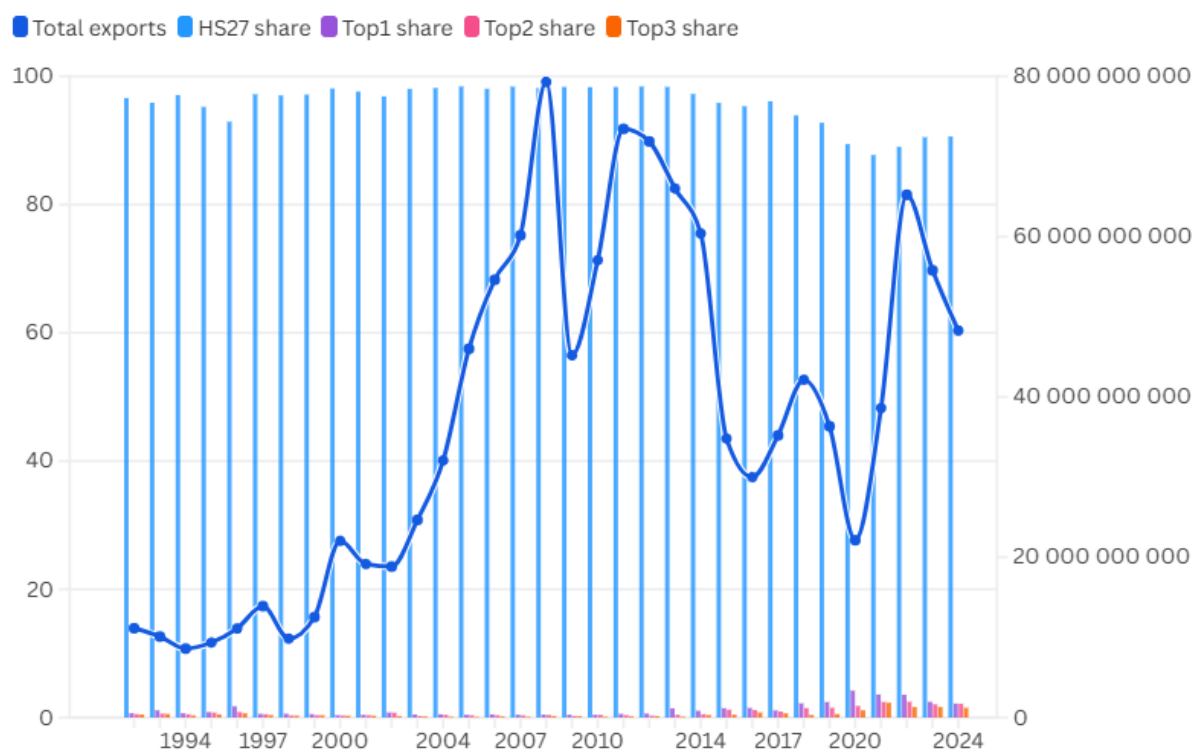




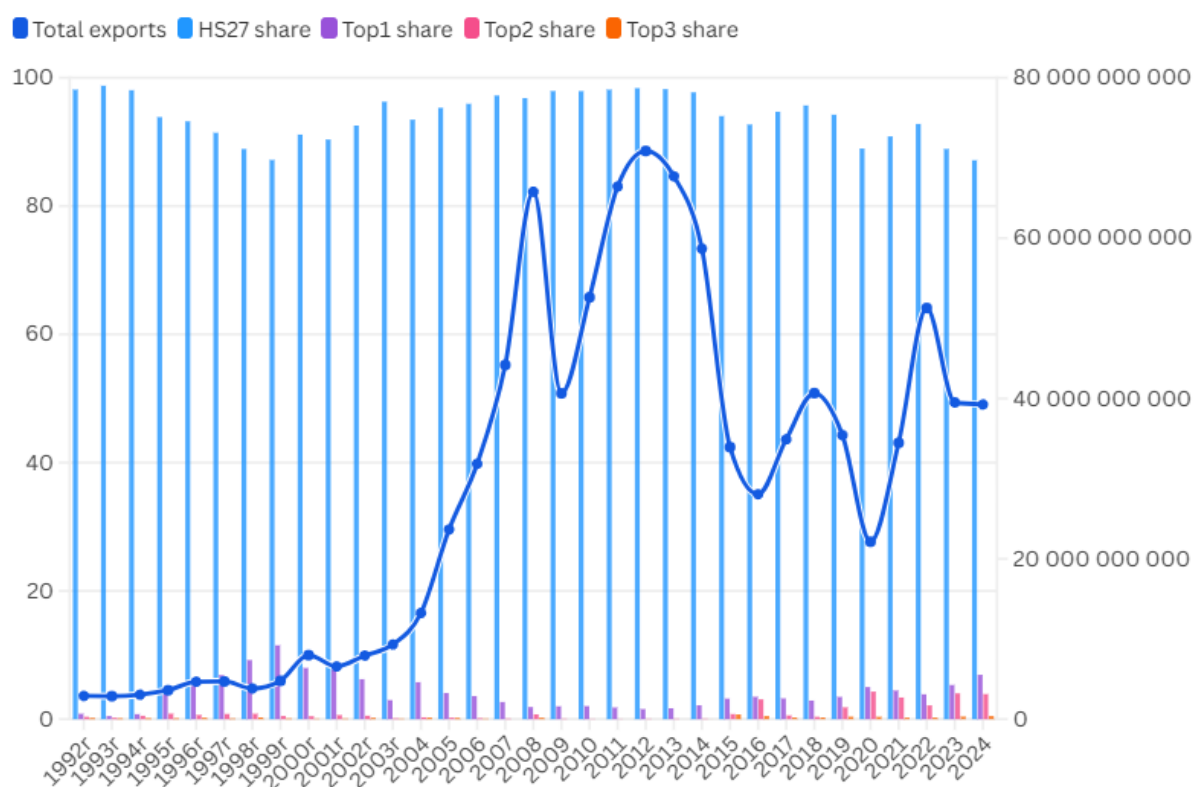
Diversification in goods exports, Kazakhstan



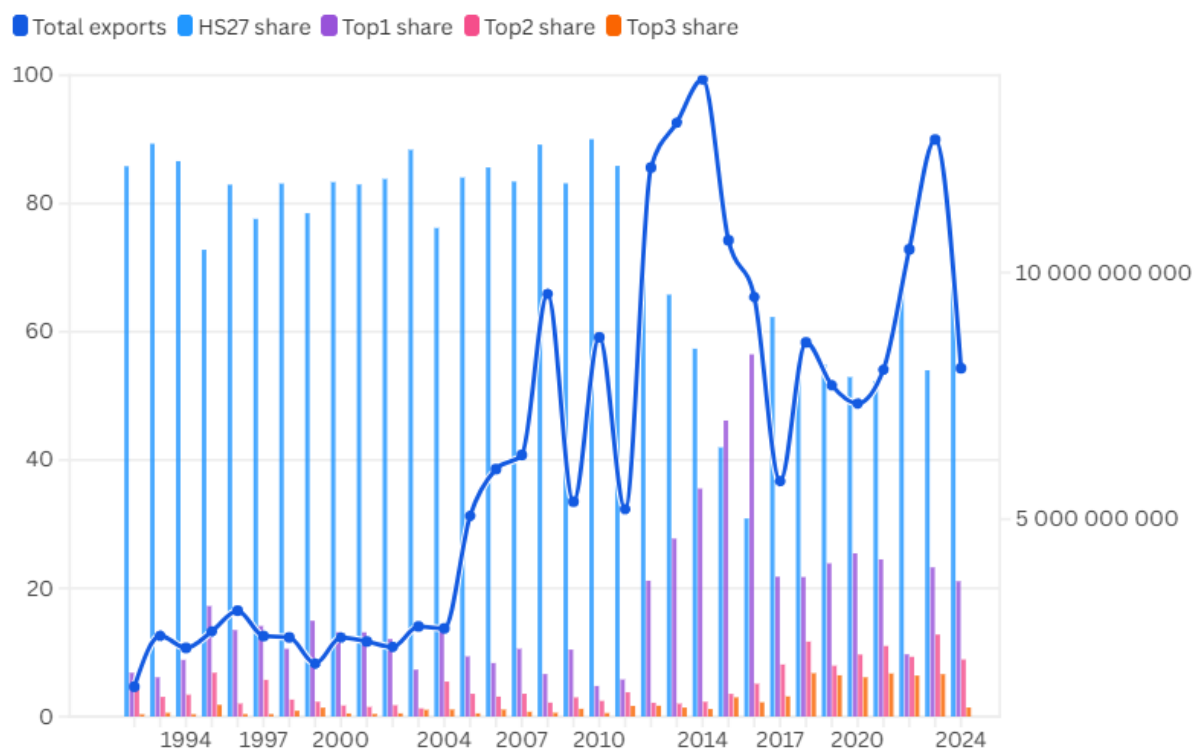
Diversification in goods exports, Turkmenistan



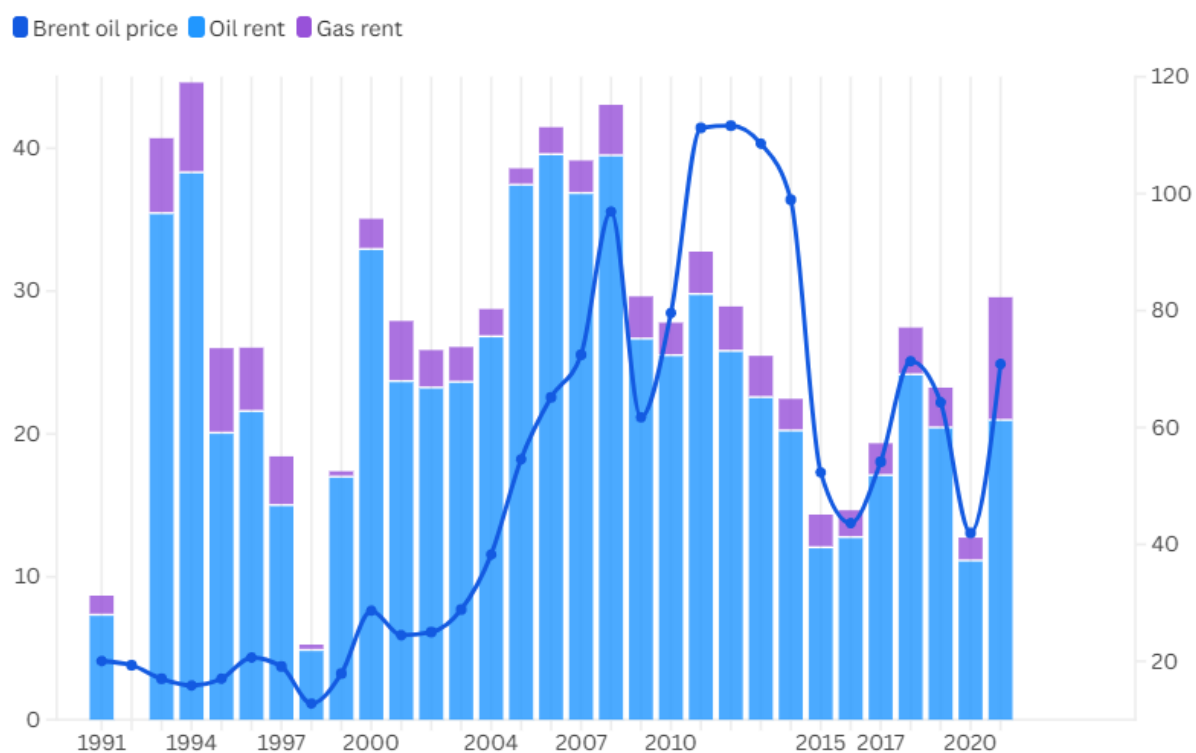
Diversification in goods exports, Algeria



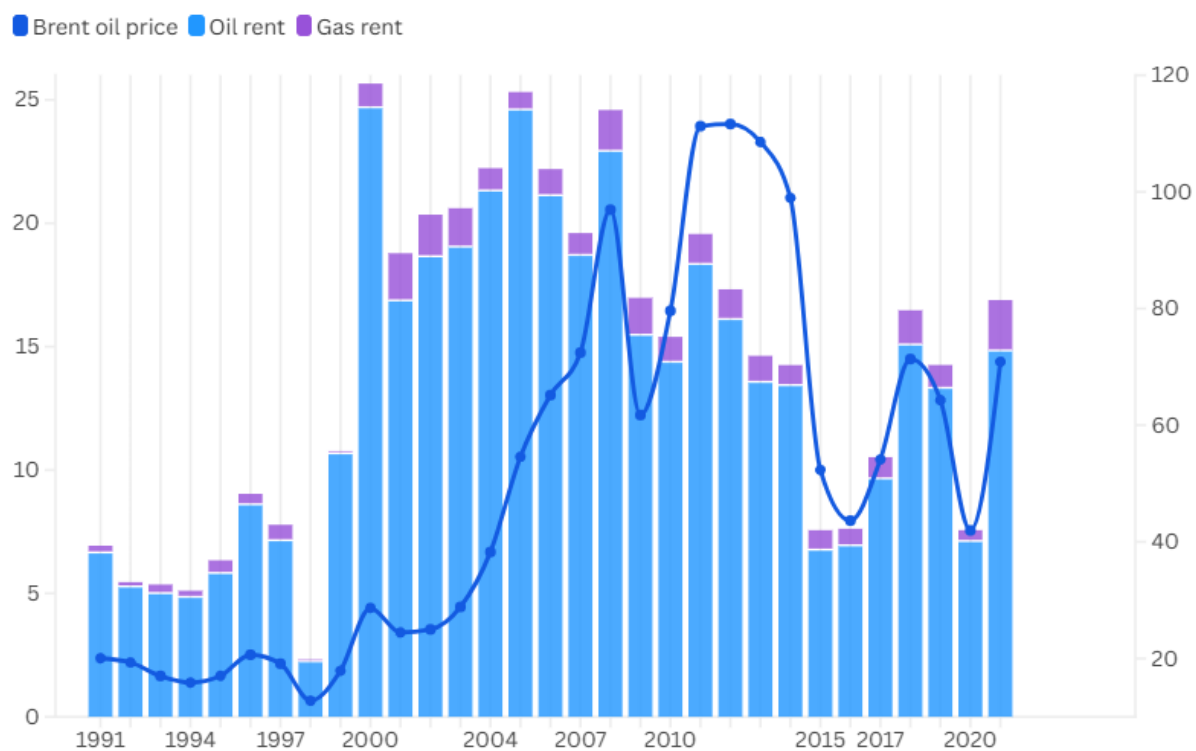
Diversification in goods exports, Angola



Diversification in goods exports, Gabon



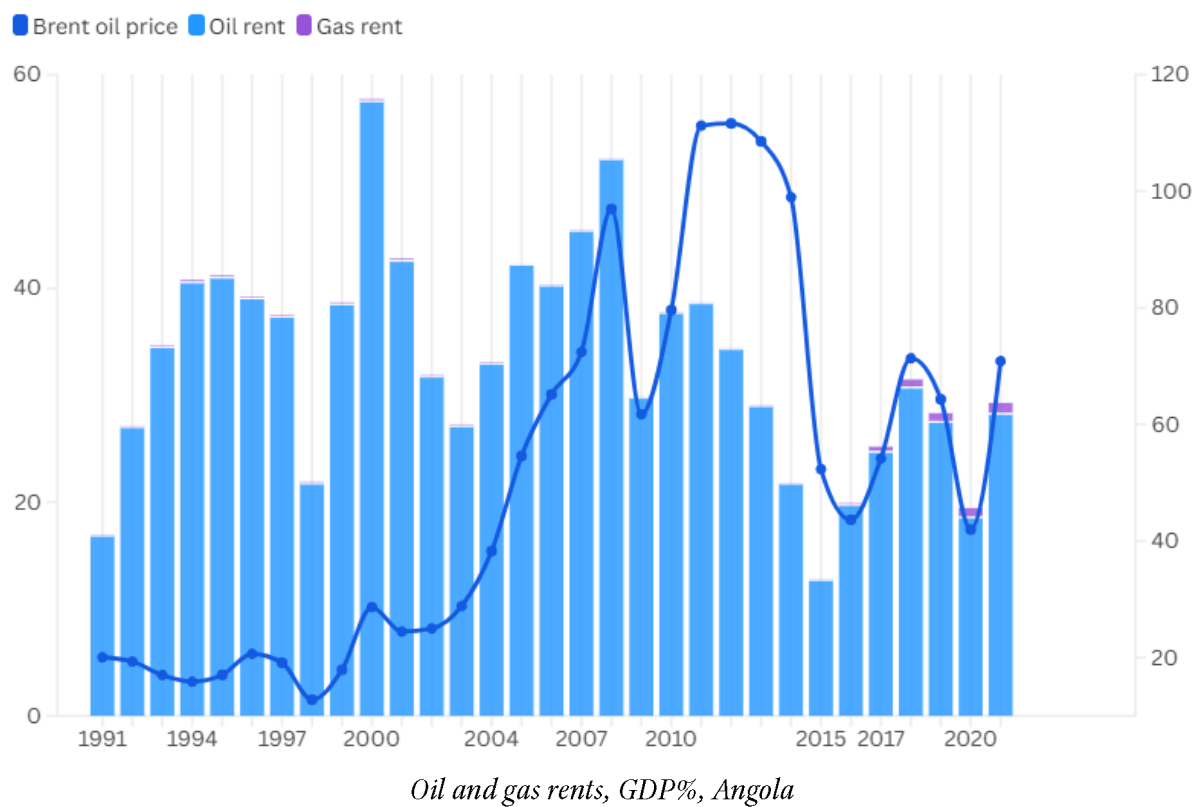
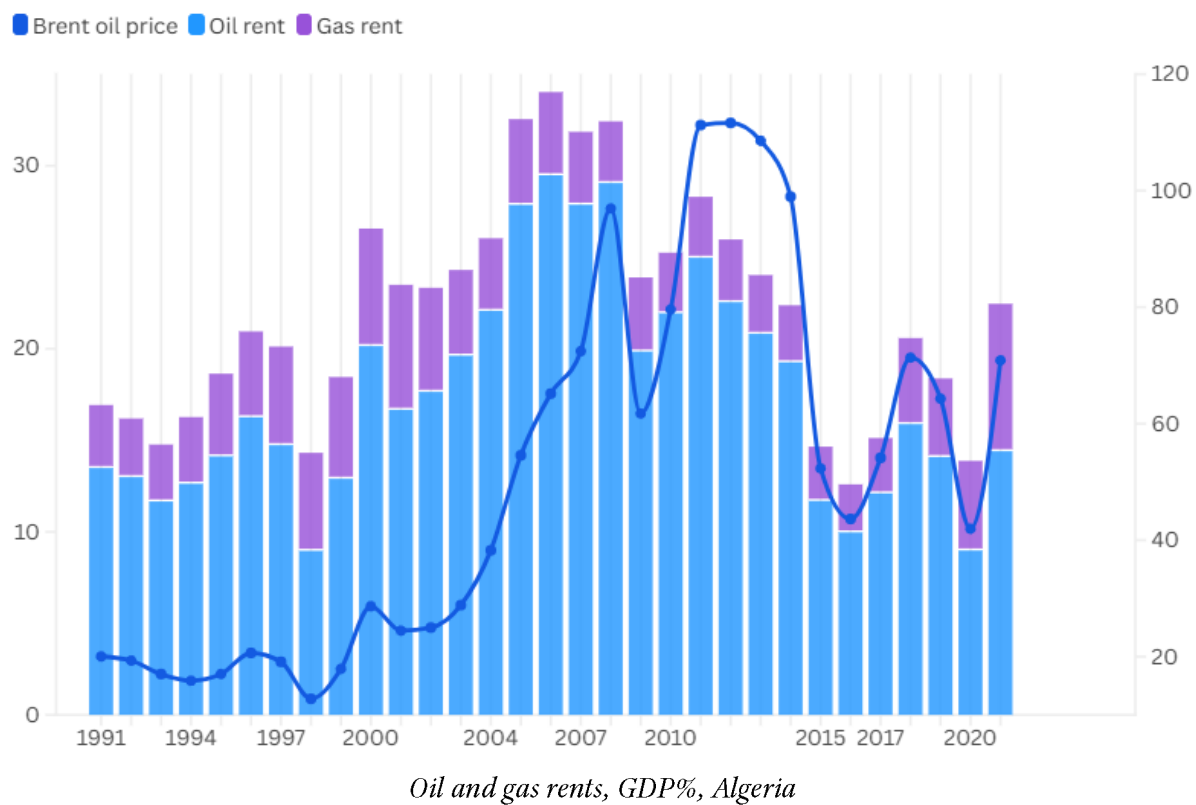
Oil and gas rents, GDP%, Azerbaijan

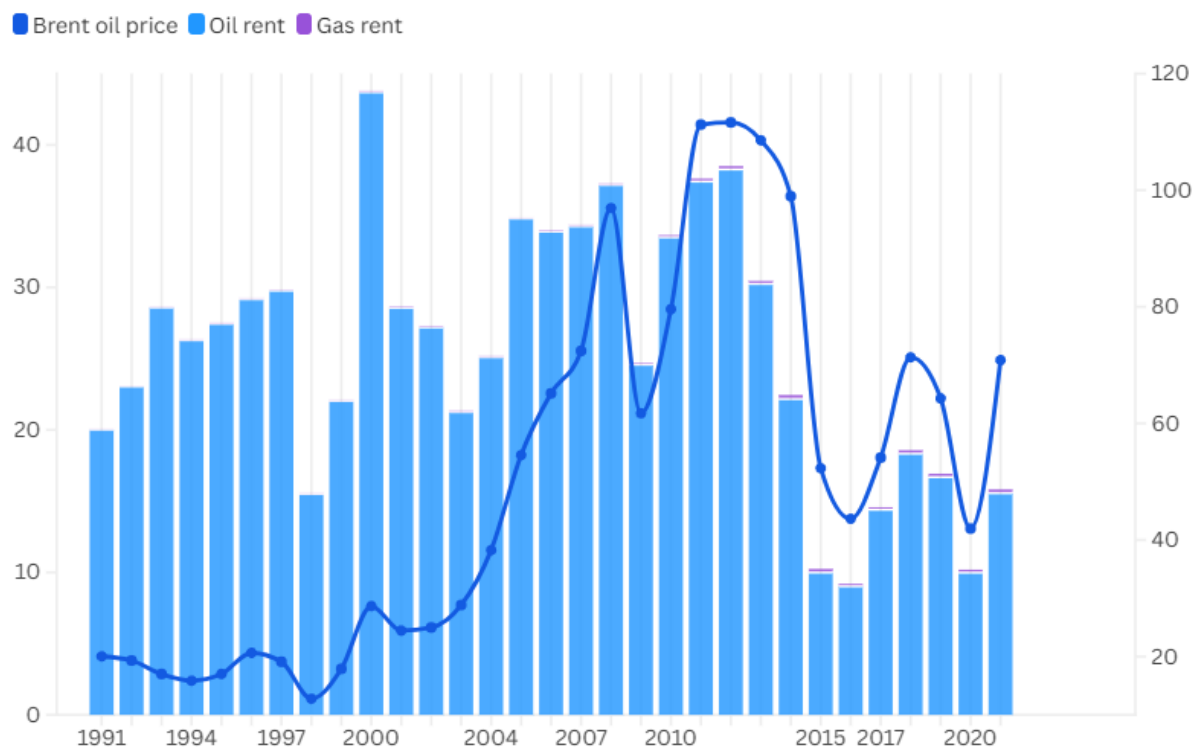


Oil and gas rents, GDP%, Kazakhstan

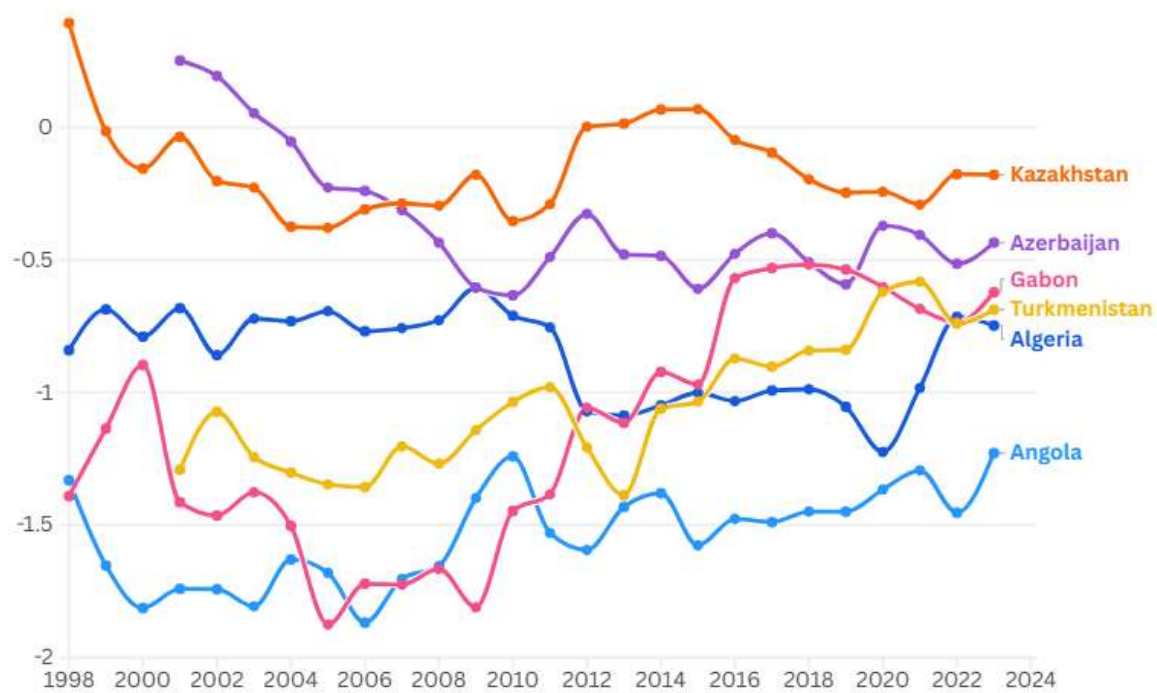


Oil and gas rents, GDP%, Turkmenistan

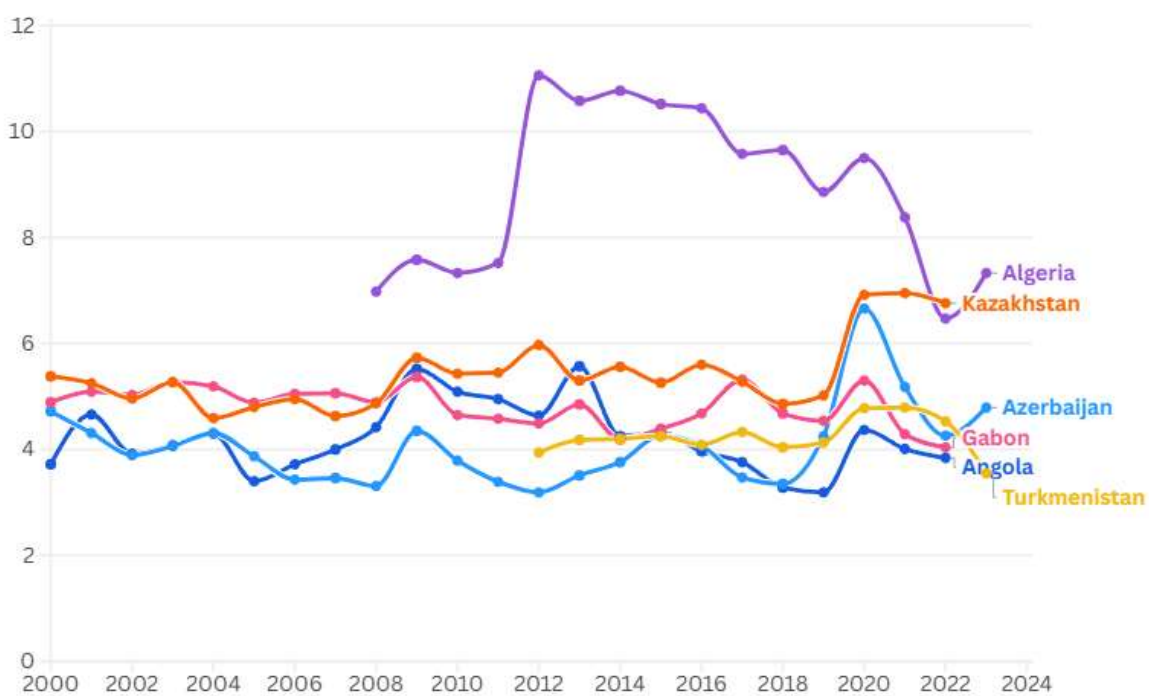




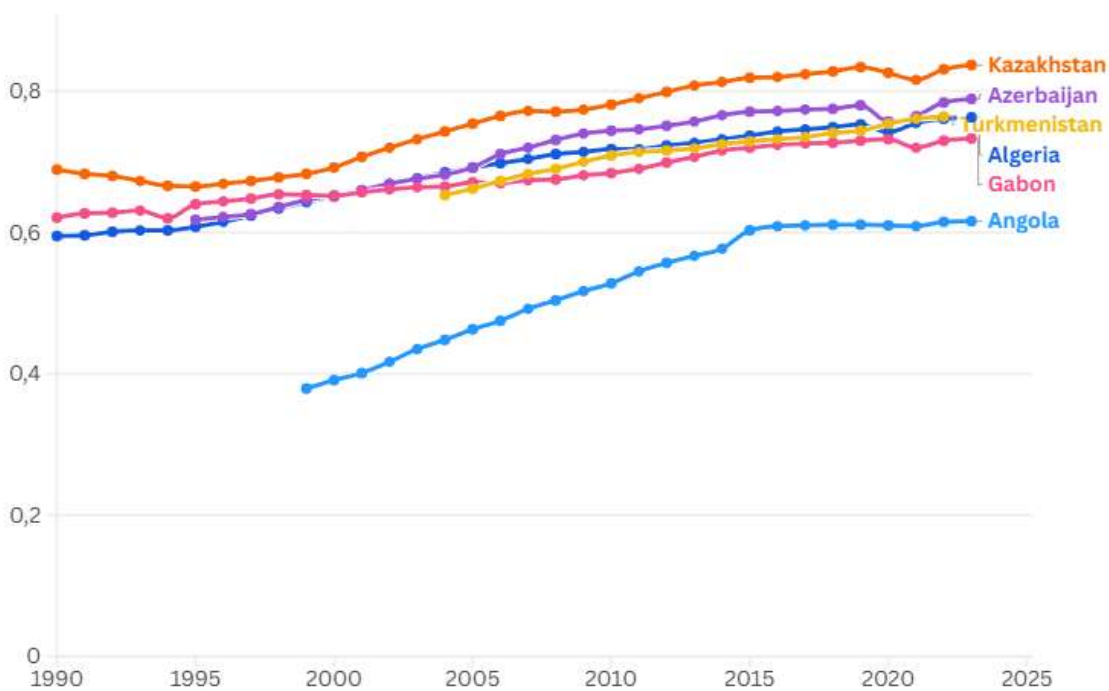
Oil and gas rents, GDP%, Gabon



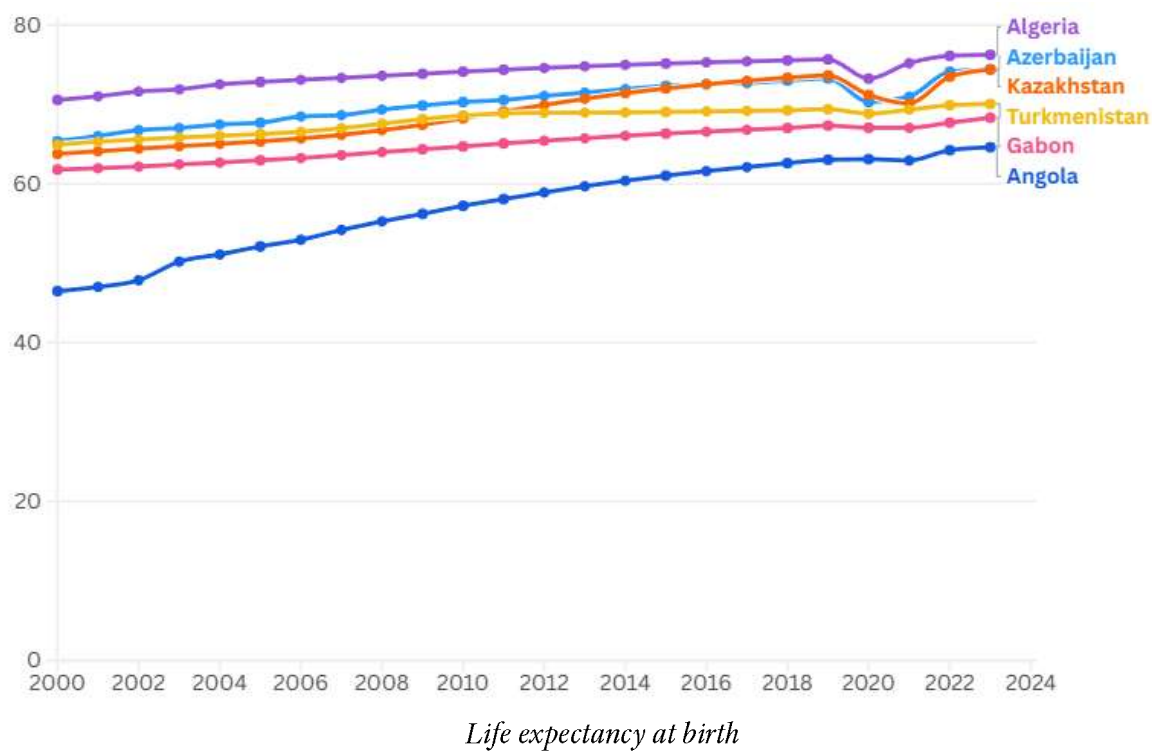
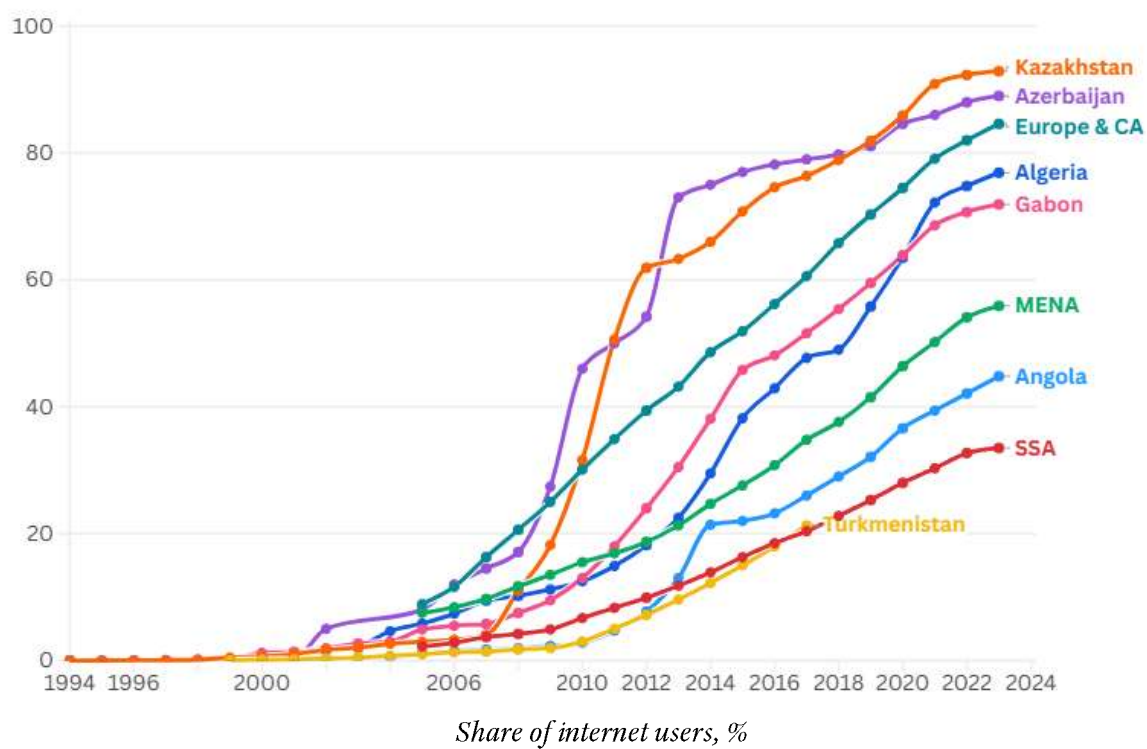
Economic Complexity Index, Trade dimension

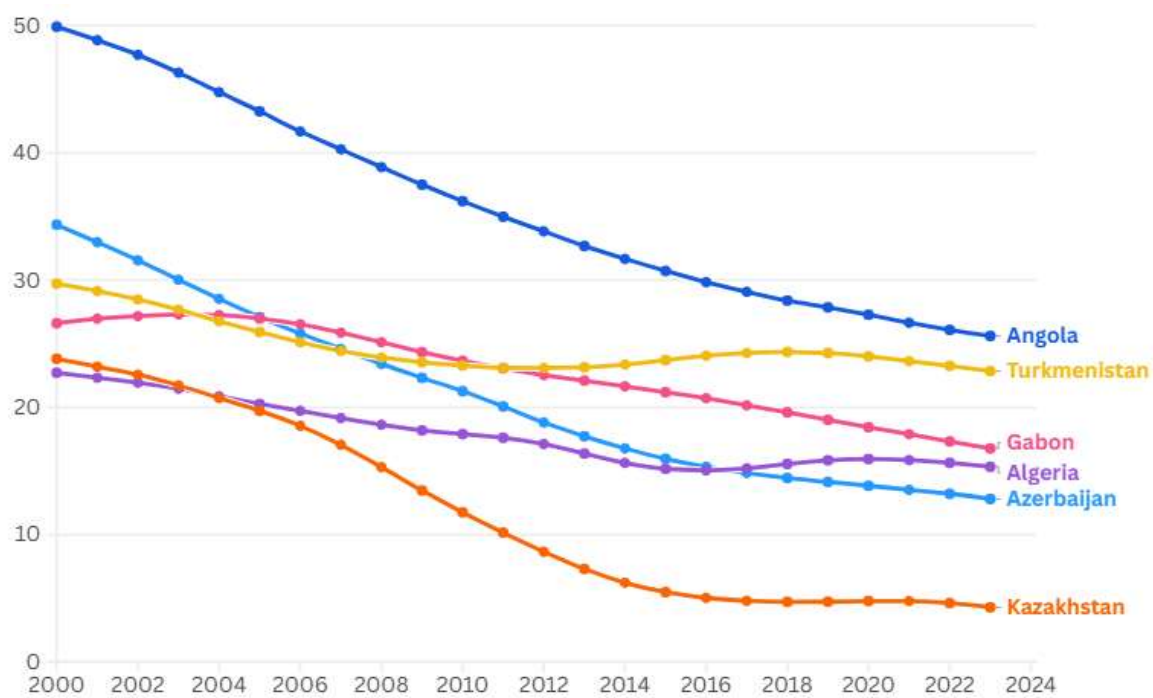


Government spending on health and education, GDP%

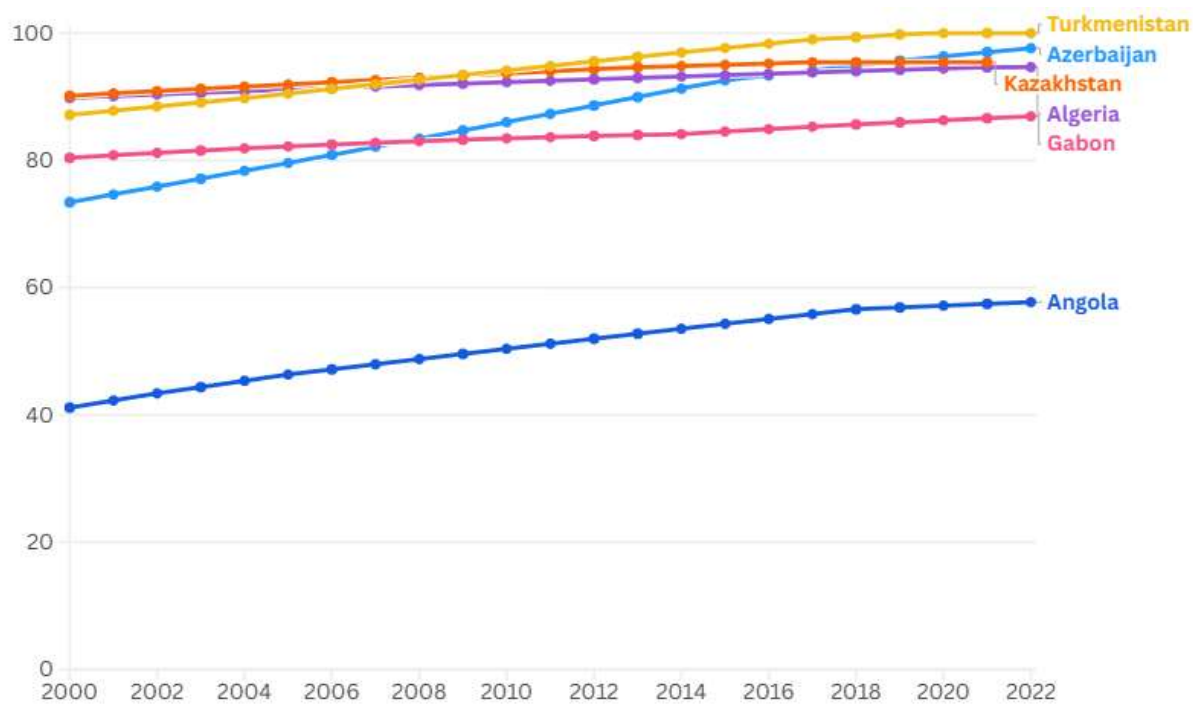


HDI

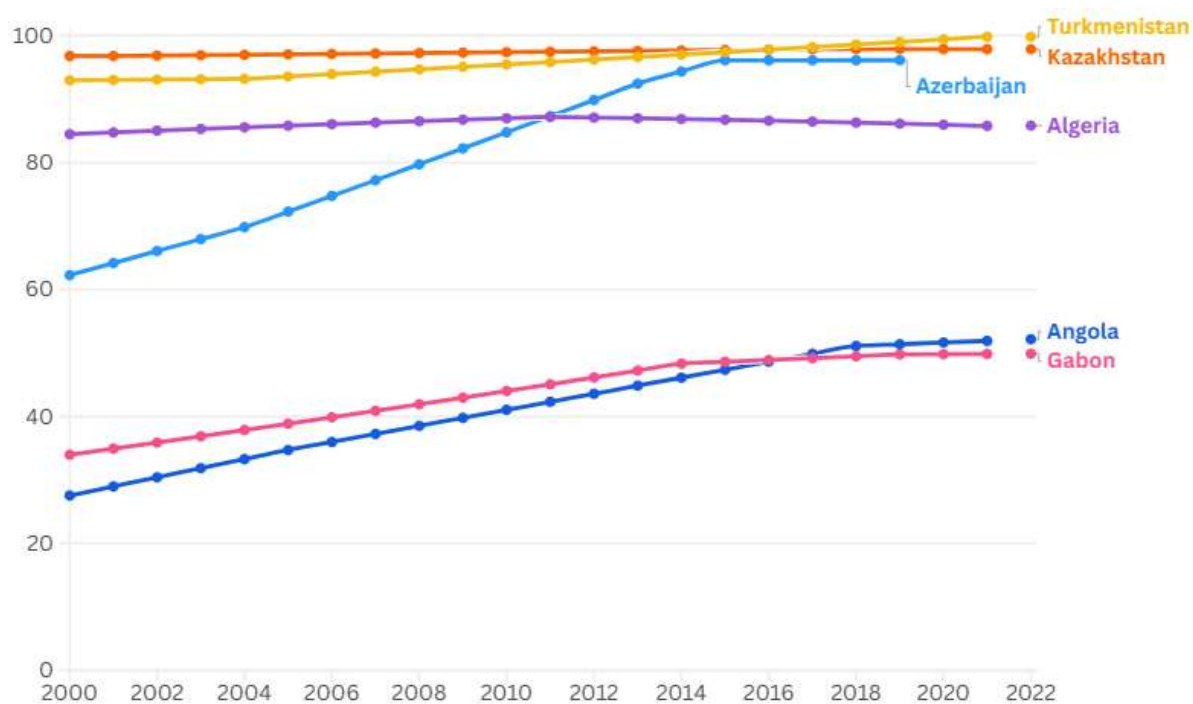




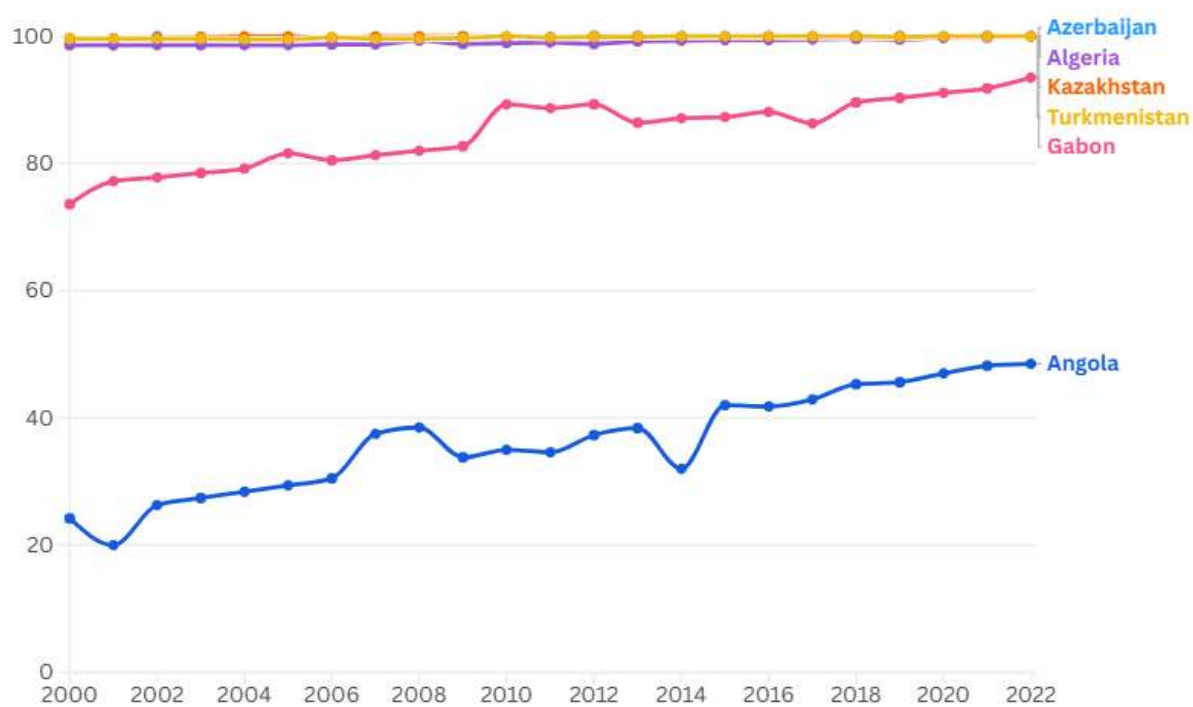
Neonatal mortality per 1000 live births



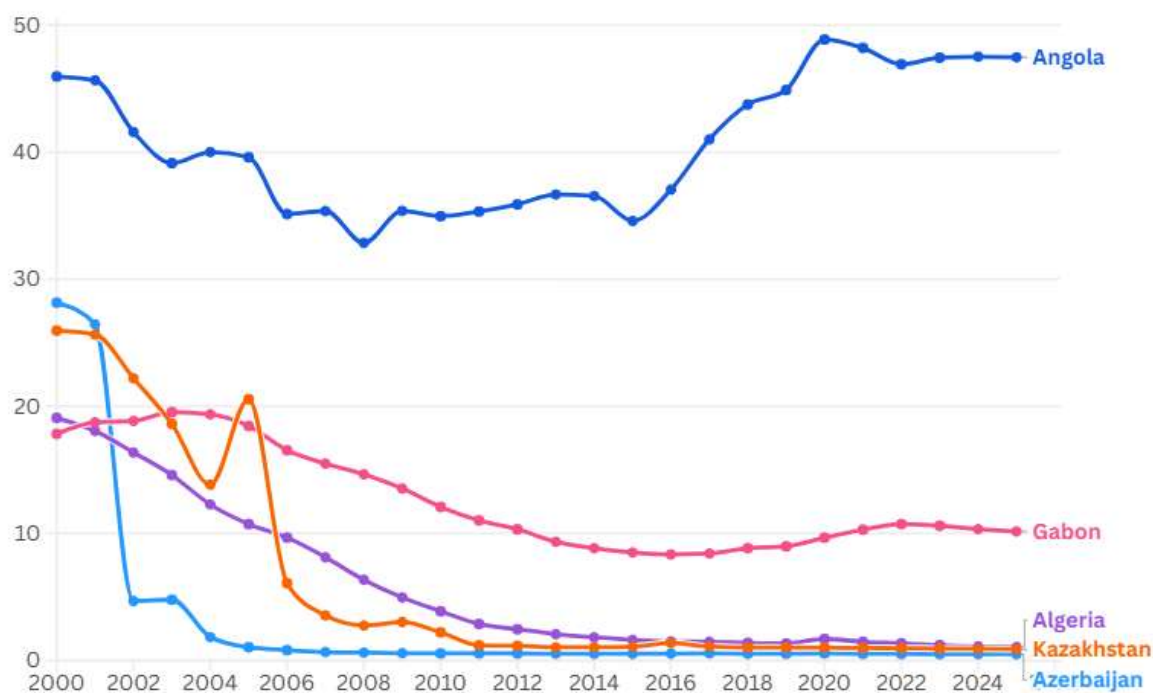
Population using at least basic drinking water services, %



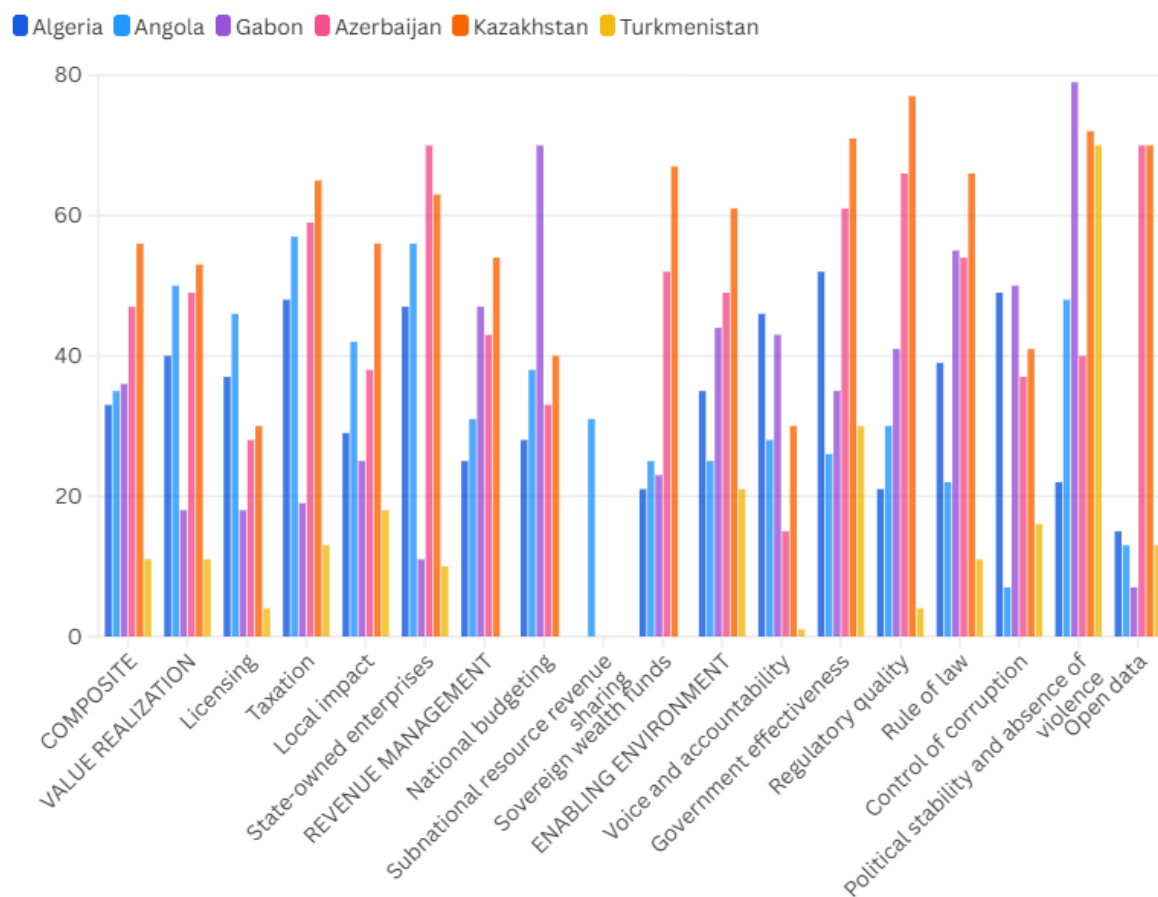
Population using at least basic sanitation services, %



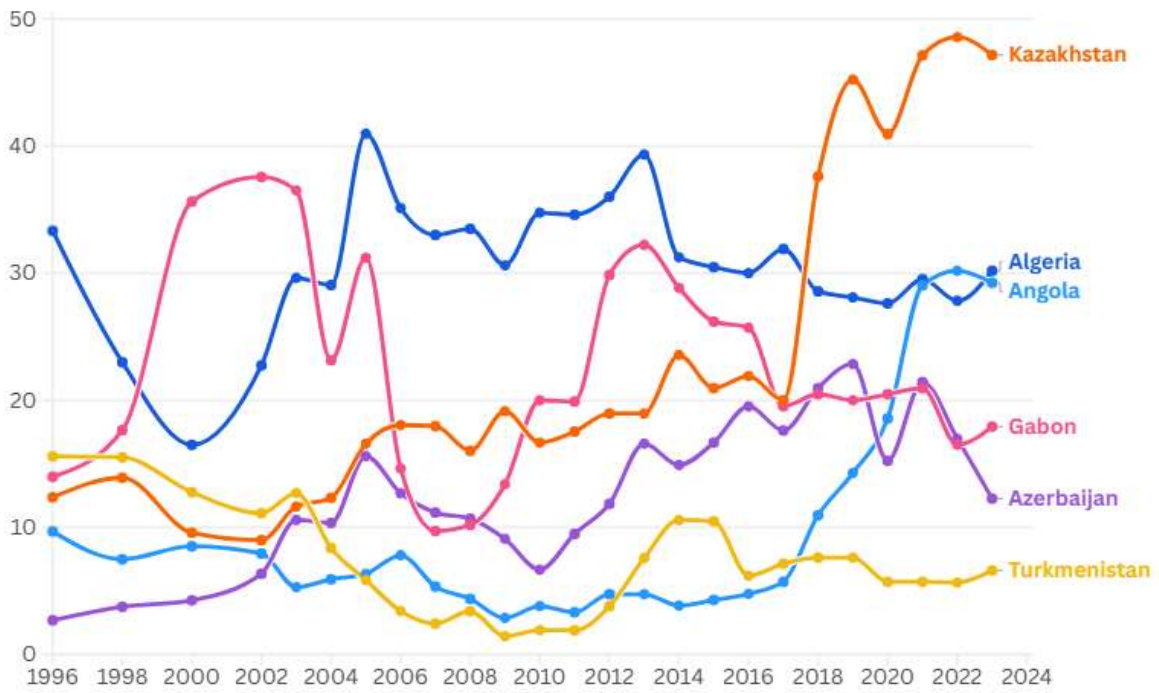
Population with access to electricity, %



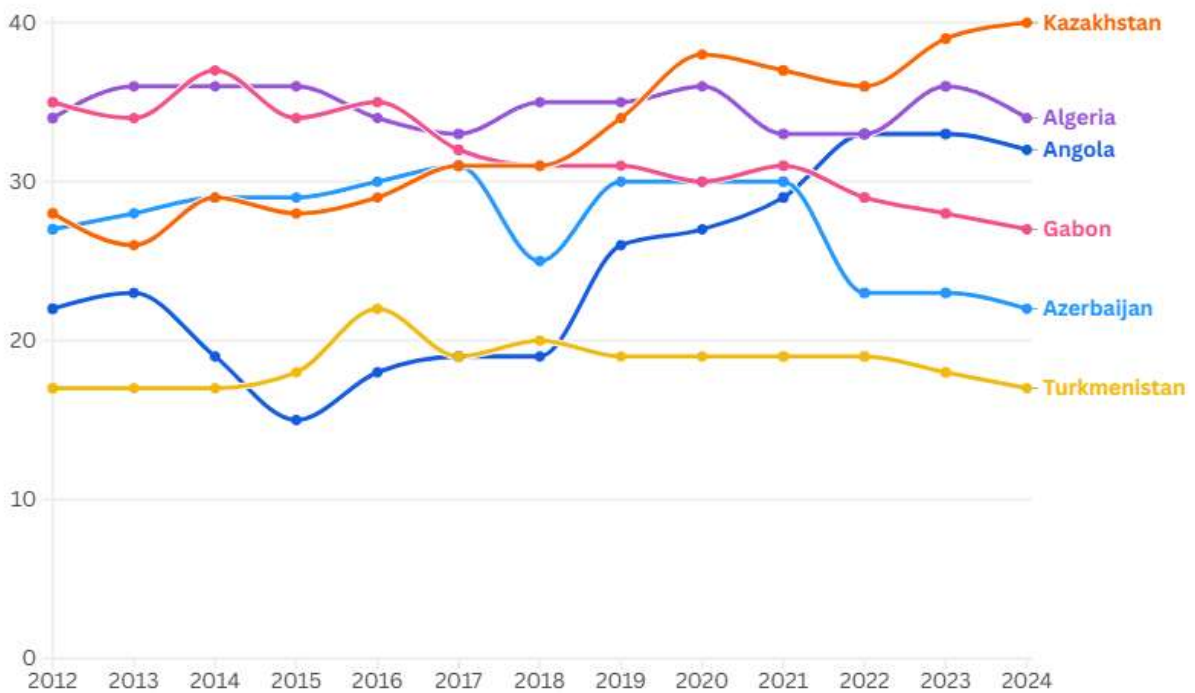
Poverty headcount ratio at US\$3.65 per day, %



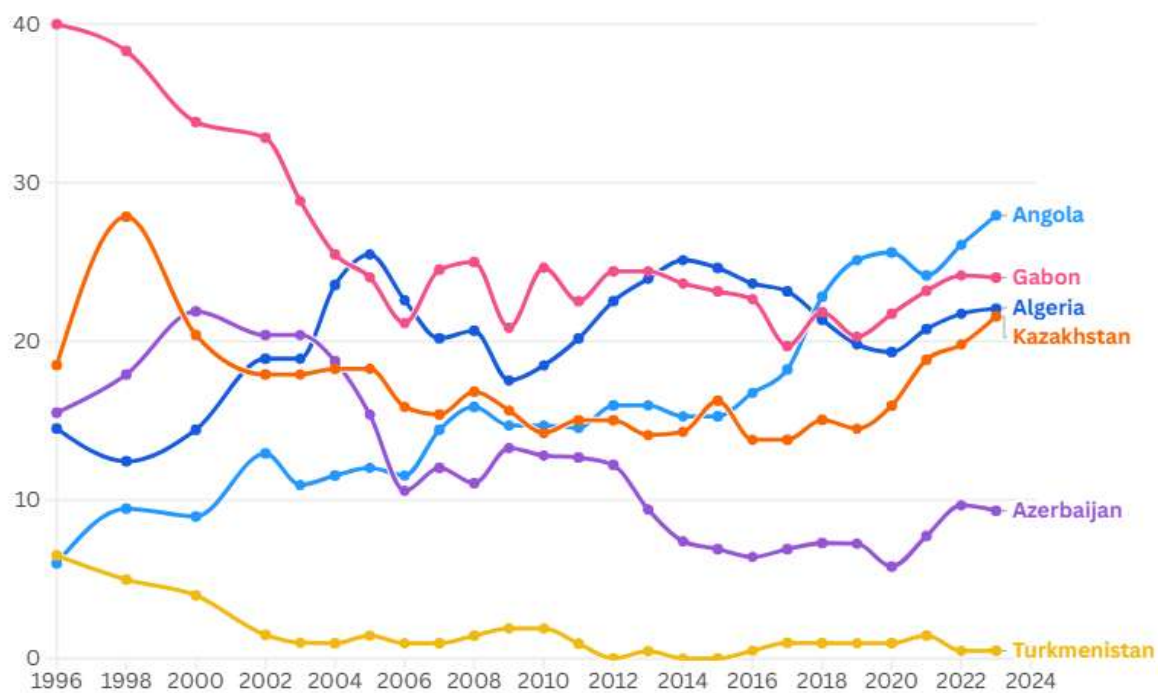
Resource Governance Index 2017



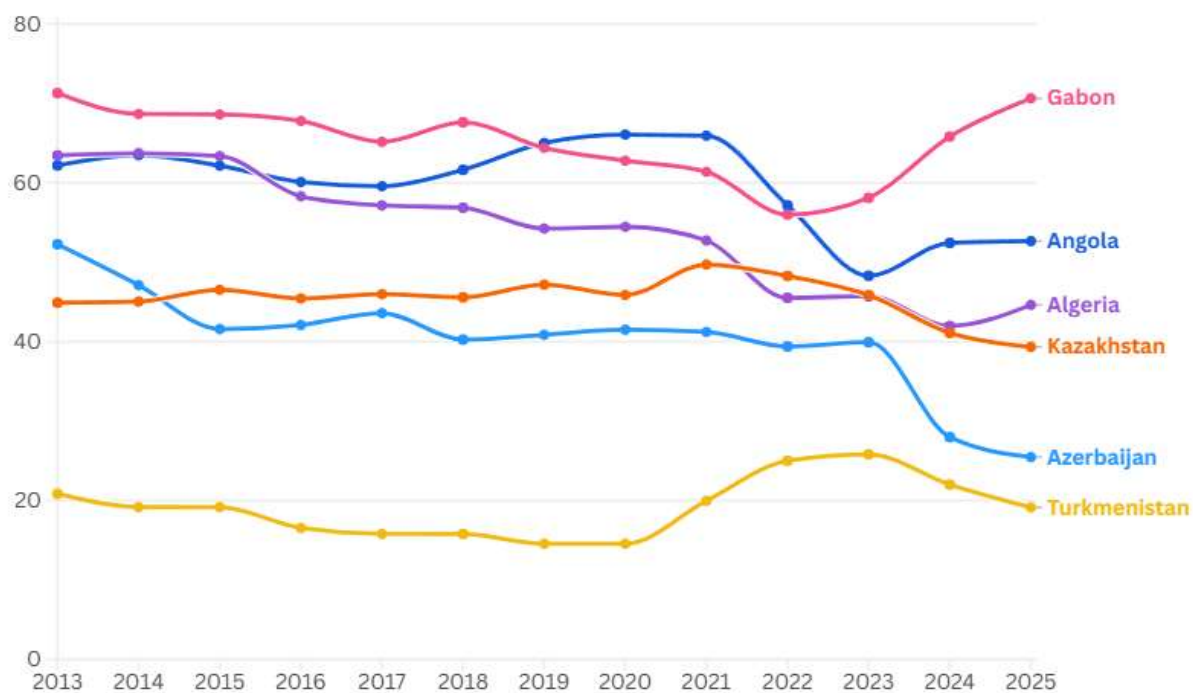
WGI Control of Corruption, percentile rank



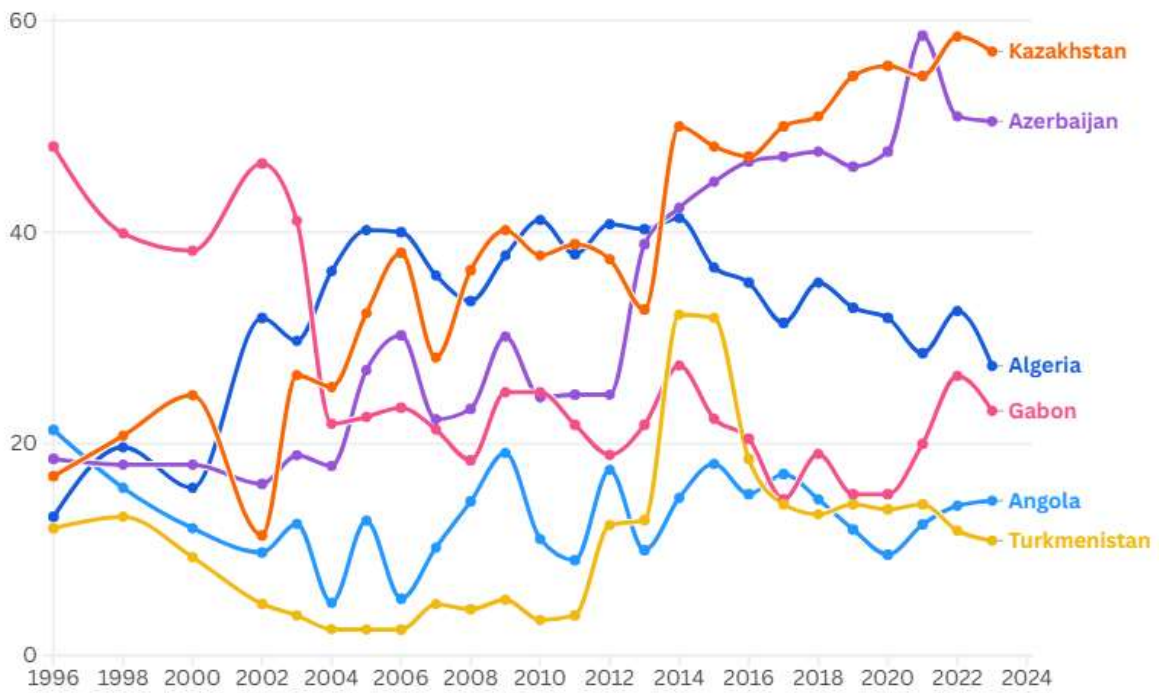
Transparency International Corruption Perceptions Index, percentile rank



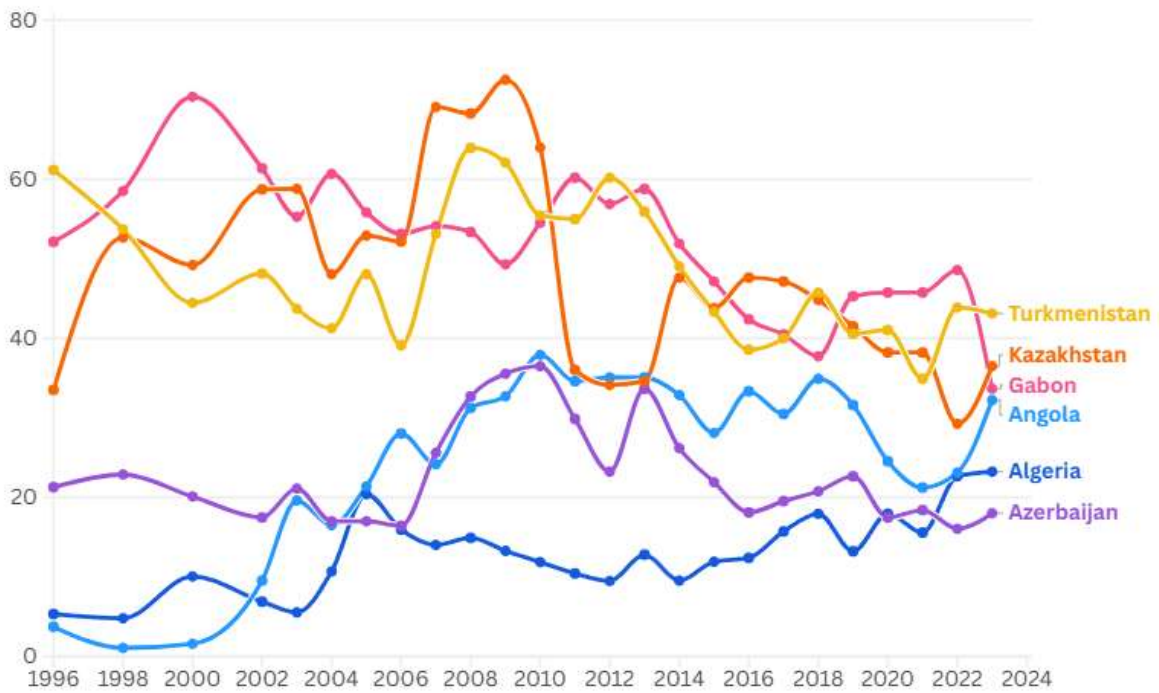
WGI Voice and Accountability, percentile rank



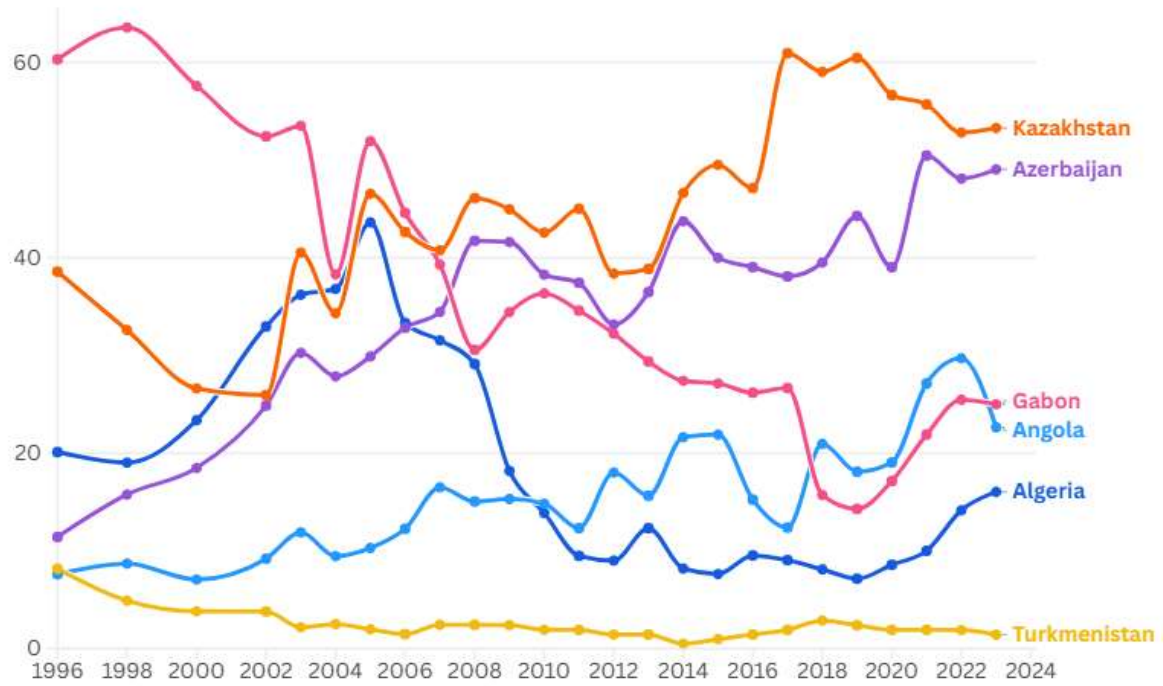
RSF Press Freedom Index, percentile rank



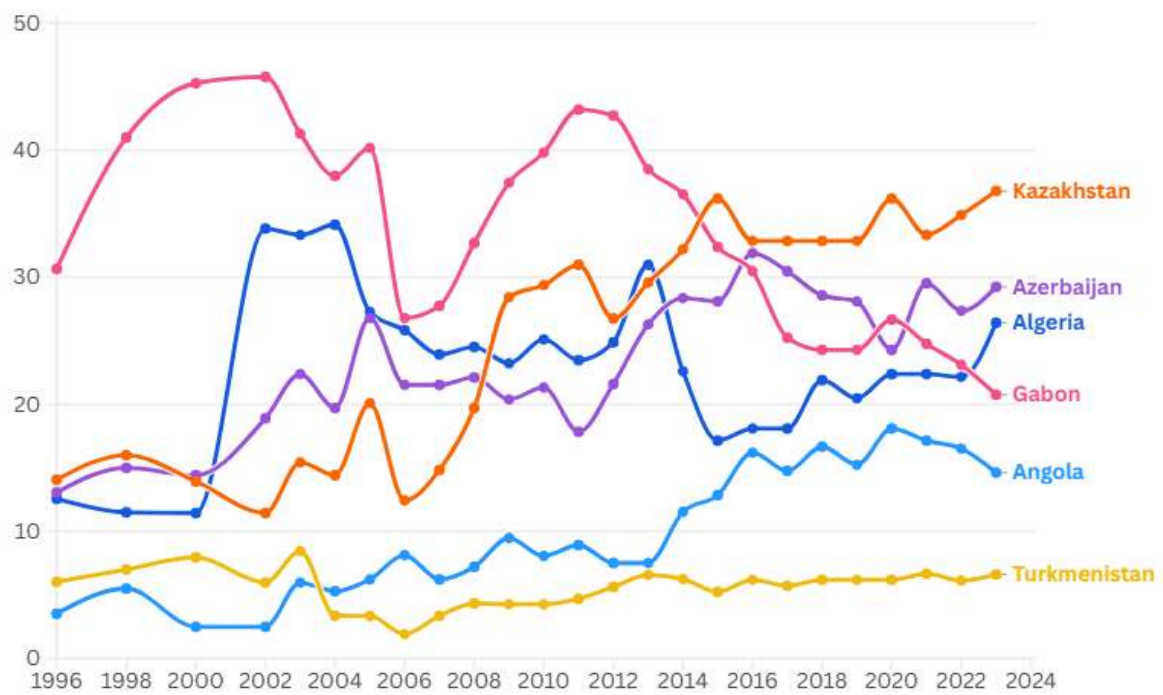
WGI Government Effectiveness, percentile rank



WGI Political Stability, percentile rank



WGI Regulatory Quality, percentile rank



WGI Rule of Law, percentile rank