UNIVERSITY OF CENTRAL ASIA
GRADUATE SCHOOL OF DEVELOPMENT
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Public Finance and Technological Development in Central Asia

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Abstract: This paper discusses the current situation with government revenue, expenditure, and deficits in the economies of Central Asia and considers the options available to use fiscal policy to support the technological development of these economies. It analyses contemporary issues in the public finances of these countries including the size of their governments, efficiency losses due to uneven taxation of different sectors and entities, ineffective foreign aid, and government expenditure inefficiency. The paper provides recommendations for the modification of fiscal policies to promote economic diversification and productivity growth in Central Asia.

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Table of Contents

Figures

Tables

Abbreviations

CA	Central Asian
DAC	Development Assistance Committee
EAEU	Eurasian Economic Union
ER	Exchange rate
FDI	Foreign direct investments
GDP	Gross domestic product
ICT	Information and communication technologies
IMF	International Monetary Fund
KGS	Kyrgyz som
MSMEs	Micro-, small and medium enterprises
NFKR	National Fund of the Republic of Kazakhstan
NGOs	Non-governmental organizations
NSC	National Statistical Committee of the Kyrgyz Republic
ODA	Official development assistance
OECD	Organization for Economic Cooperation and Development
PIP	Public investment programme
PISA	Programme for International Student Assessment
PPP	Purchasing power parity
R&D	Research and development
STS	State Tax Service of the Kyrgyz Republic
UAPF	Unified Accumulative Pension Fund (of the Republic of Kazakhstan)
UNESCO	United Nations Educational, Scientific and Cultural Organization
USD	United States dollar
VAT	Value-added tax
WDI	World Development Indicators
WEO	World Economic Outlook
WIPO	World Intellectual Property Organization

1. Introduction

In the mid-2010s, the countries of Central Asia entered a new stage of their economic development. In the 1990s, these economies went through an acute crisis associated with the transition from a planned to a market economy. This was followed by a post-transition recovery and fast economic growth in 2000-2013. Growth was driven mostly by the adaptation of the population to market economy conditions and high international prices for natural resources (oil, gas, gold, other metals), which benefited most of these economies either directly (energy exporters) or indirectly (recipients of labour migrants' remittances from neighbouring energy-rich countries). The fall of international energy prices in 2014 adversely affected these countries. In 2015-2018, Central Asian GDP growth rates fell by several percentage points in comparison to 2000-2014. This suggests that the economic development model based on the reliance on one's own or neighbours' natural resources may need to be replaced by a different model focusing on labour productivity and its major driver – technological development.

In general, this is well understood by the Central Asian governments. These countries' national development strategies/policies[1] emphasize the need to diversify the economies from reliance on the extractive industries and low productivity agriculture to more technologically advanced manufacturing, services and higher-value-added agriculture. Various economic policies are needed to support this shift. Among them, fiscal policy stands out as one of the most powerful government tools. Therefore, this paper looks at current fiscal policies in the countries of the region and their possible modifications to enhance technological development. Technological development is understood here in a broad sense. Recent discussions of technologies often focus on information and communication technologies (ICT) and the digital economy. However, in the Central Asian context it seems relevant to advance a broader understanding of technologies which, of course, includes ICT/digitalization, but also covers more traditional technologies such as improved inputs and land cultivation techniques in agriculture, modern equipment and processing methods in manufacturing, energy-saving approaches.

In this paper, fiscal policy encompasses all policies related to the management of government budget revenue, expenditure, deficit/surplus including tax policy, government borrowing and debt policy, sectoral spending policies, etc. Fiscal policy is seen from the enterprise/household perspective, which are technological development's main agents of change and for which fiscal activities at all levels matter. The paper concentrates on general government budgets, which include the central government budget, local budgets, and governments' extra-budgetary funds. The aim is not to provide a comprehensive description of all tax, expenditure and deficit financing details for all economies of Central Asia; rather to identify and analyse key policy trends and issues typical for the region.

The paper covers Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. This is a rather heterogeneous group with vastly different levels of development and economic challenges, but also with a substantial degree of geographical, historical, institutional and cultural proximity. Their current economic, social and political interactions are also significant. This proximity allows for some cross-learning. Central Asian societies should also be aware of their neighbours' situation and policies to properly coordinate and maximise the benefits of regional cooperation. Afghanistan as a conflict-affected country is difficult to directly compare with other economies in

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1   E.g. State Programme of Industrial and Innovation Development of the Republic of Kazakhstan for 2015-2019, National Development Strategy of the Kyrgyz Republic for 2018-2040, National Development Strategy of the Republic of Tajikistan till 2030.

the region and beyond. Nonetheless, it makes sense to apply to Afghanistan's public finance the same metrics and analysis as to other Central Asian countries since this can give a better understanding of issues and available options after peace is achieved.

2.   Trends in Public Finance of Central Asian Economies

2.1. Level of Economic Development and Growth

The scope and scale of fiscal activities depend on the level of a country's economic development. Economies of the region vary from low-income (Afghanistan and Tajikistan) to lower-middle-income (Kyrgyzstan and Uzbekistan) to upper-middle-income (Kazakhstan).[2] Kazakhstan, the only major energy exporter in the group, is much richer than the others. Accounting for Central Asia's (CA) geography and history, 'emerging and developing Europe'[3] and 'emerging and developing Asia'[4] seem to be natural comparators for the CA economies. Based on GDP per capita (Figure 1), Kazakhstan's level of economic development is similar to that of emerging and developing Europe, while Afghanistan, Kyrgyzstan, Tajikistan and Uzbekistan have values of GDP per capita which are several times below the average for the economies of emerging and developing Asia.

Typically, the economic growth rate of a country is negatively correlated with its level of development – it is easier to grow from a low base. This rule generally holds in Central Asia (Figure 1), but with some reservations. For the decade 2009-2018, Afghanistan, Kyrgyzstan, Tajikistan and Uzbekistan had growth rates lower than the average for countries in the much richer emerging and developing Asia category. Kyrgyzstan's GDP growth rate lags behind that of Kazakhstan, an economy with seven times higher GDP per capita. Kazakhstan's growth rates are roughly consistent with its level of economic development, while other countries of the region, especially Kyrgyzstan, grow slower than their level of economic development would suggest.

Figure 1. GDP growth rate and GDP per capita
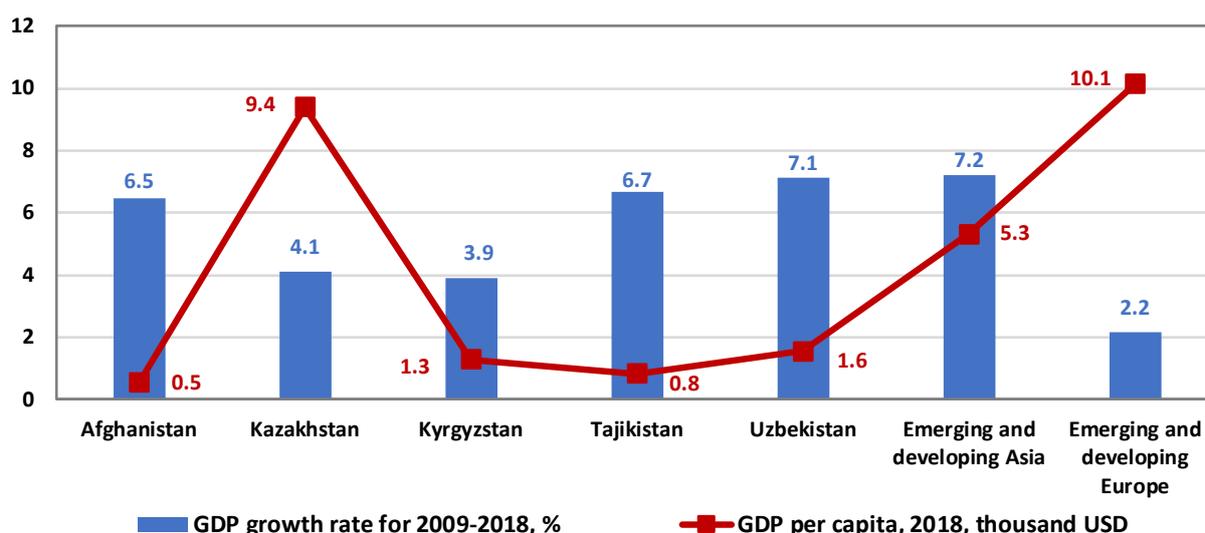
Sources: IMF WEO database, World Development Indicators (WDI)

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2   According to the World Bank's classification of economies by income group, 2019.

3   Post-socialist economies of Central and South-East Europe in the International Monetary Fund (IMF) World Economic Outlook (WEO)'s "Emerging and developing Europe" group.

4   Most countries of Asia and Pacific (except East Asian developed economies and West Asia) included in the WEO's "Emerging and developing Asia" group.

2.2. General Government Budget Trends

According to the IMF WEO database, the countries of the region vary greatly in terms of the scale of the general government budget (Figures 2, 3). Total government expenditures in Kyrgyzstan and Tajikistan regularly exceed 30% of GDP and, at times, close to 40% of GDP, which is quite high relative to these economies' level of development. This makes them comparable to post-socialist countries in Europe. On the other hand, Kazakhstan and, to a lesser extent, Uzbekistan have levels of government expenditure well below emerging and developing Europe and emerging and developing Asia.

The high levels of government expenditures in Kyrgyzstan and Tajikistan are financed by high levels of government revenue (especially in Kyrgyzstan) and government budget deficit (in the case of Tajikistan). In Afghanistan, government expenditure usually does not deviate much from revenue for reasons explained below.

Figure 2. General government revenue, expenditure, and deficit, 2018
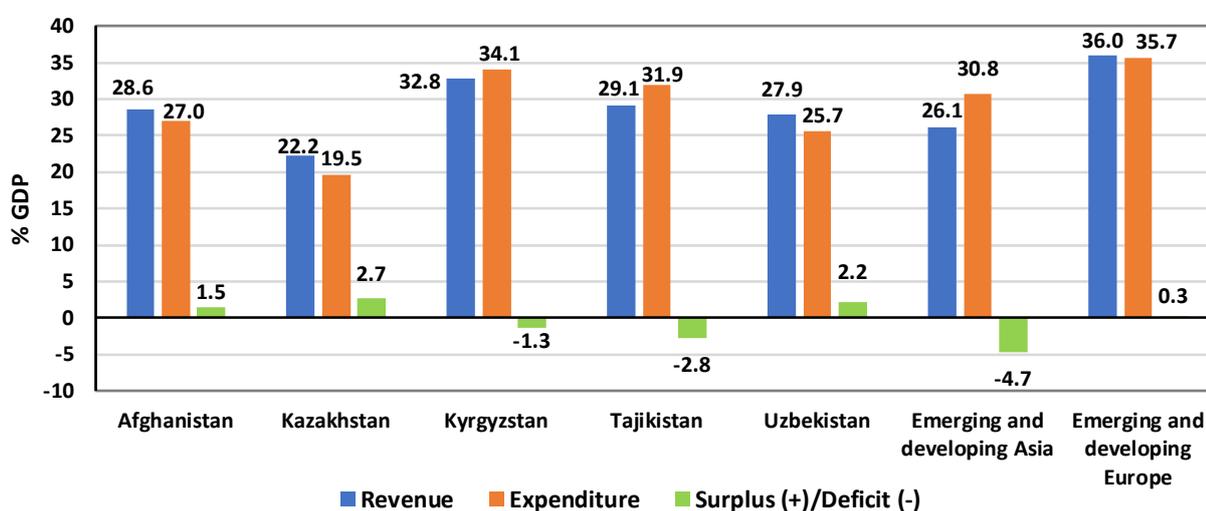
Source: IMF WEO database

General government expenditures an upwards trend in all countries of the region since 2005 (Figures 3a-3e). In absolute terms (at a constant exchange rate and prices), for the period 2005-2018 expenditures almost doubled in Kazakhstan, more than doubled in Kyrgyzstan and Uzbekistan, and tripled or quadrupled in Afghanistan and Tajikistan. In Afghanistan, Kyrgyzstan and Tajikistan government expenditures also increased as a percent of GDP. In other words, the expenditures in these countries grew much faster than their GDPs. By contrast, Uzbekistan's government expenditures fell by 3 GDP percentage points between 2005 and 2018.

The revenue dynamics in all these countries were similar to those of expenditures. Afghanistan, Kyrgyzstan and Tajikistan typically had either government budget deficits or near-zero budget balances. The government budgets of Kazakhstan and Uzbekistan mostly had positive balances (in Kazakhstan, except 2009 and 2015-2017 when the budget was in deficit due to unusually low revenues). In Kazakhstan, it is government policy to accumulate resources in a sovereign wealth fund called the National Fund of the Republic of Kazakhstan (NFRK) when energy prices are high[5] and to spend the savings when prices and current revenues fall to smooth the government's

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5   Taxation of oil production and exports is the main source of the government revenue in this country.

expenditure and the economy's dynamics, in general. Similarly, Uzbekistan has the Fund for Reconstruction and Development of the Republic of Uzbekistan. All governments of the region were prudent enough to avoid running increasing government deficits.

Figure 3. Evolution of general government budget indicators, 2005-2018

a) Afghanistan

b) Kazakhstan

c) Kyrgyzstan

d) Tajikistan

e) Uzbekistan
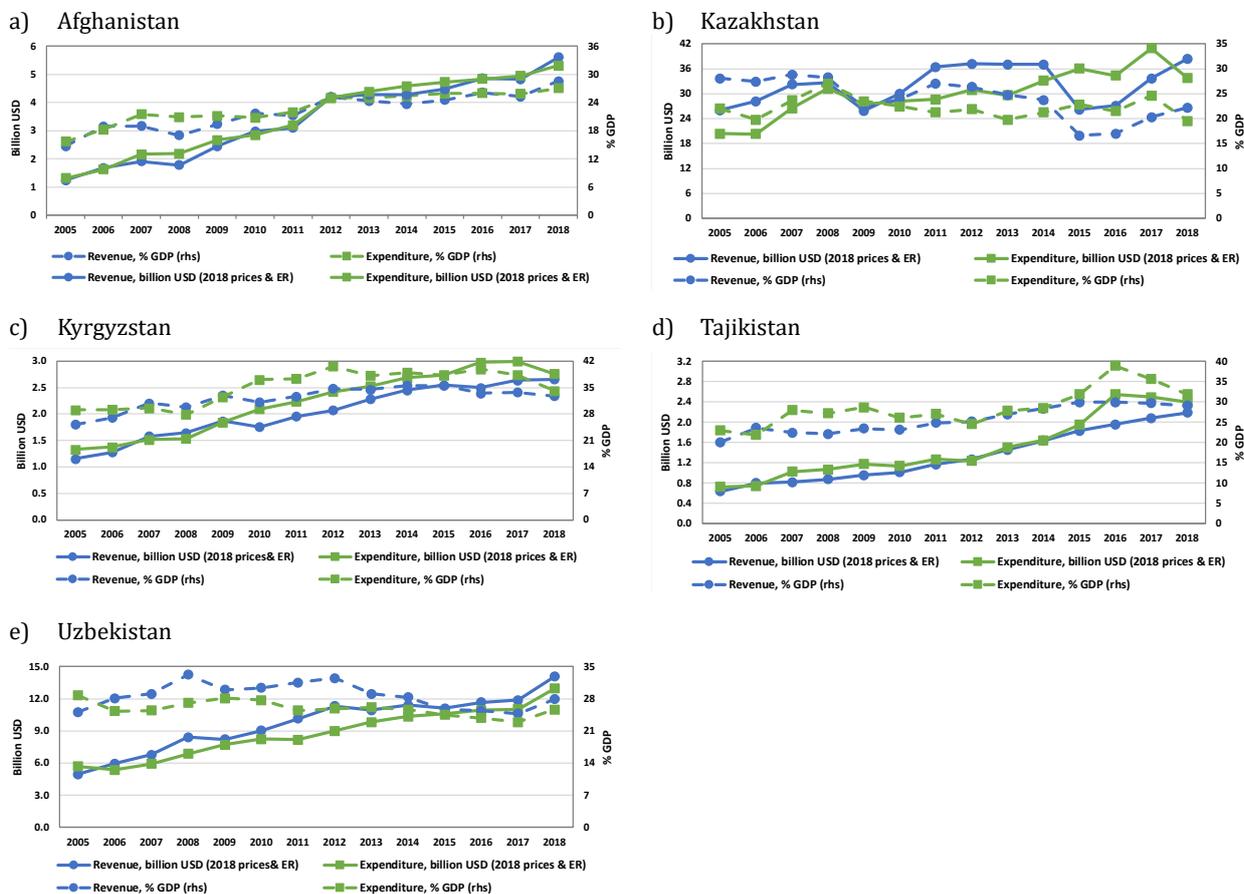
Source: IMF WEO database

2.3. Government Revenue

Government revenues in Central Asia consist of taxes and social contributions, non-tax revenue (income from property and paid services, fees, etc.) and, in Afghanistan, Kyrgyzstan and Tajikistan, foreign aid in the form of grants. Due to the importance of foreign aid, it is discussed separately in section 3.3 below.

The structure of domestic revenue by the source is shown in Figure 4. The primary source of government revenue in Kyrgyzstan, Tajikistan and Uzbekistan is taxes on goods and services – value-added tax (VAT) on imports and domestic production, excises on imports and on domestic production, sales tax[6] and some other indirect taxes. In the case of these countries, the collections of taxes on goods and services exceed 10% of GDP providing around one-third of domestic revenue.[7] Indirect taxes are also important in Afghanistan and Kazakhstan (about 4% of GDP in each case). Among all taxes on goods and services, VAT on imports is the largest[8] generating up

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6   In Kyrgyzstan, VAT and sales tax are applied simultaneously.

7   Here and below in section 2 all quantitative estimates are for 2017.

8   Except Afghanistan where VAT has not been introduced yet (expected by the end of 2020).

to half of all collection of taxes on goods and services. This is due to the large scale of imports (20-60% of these countries' GDP) and better administration of taxes collected at the borders as compared to taxes on domestic production.

Figure 4. Domestic revenue, 2017
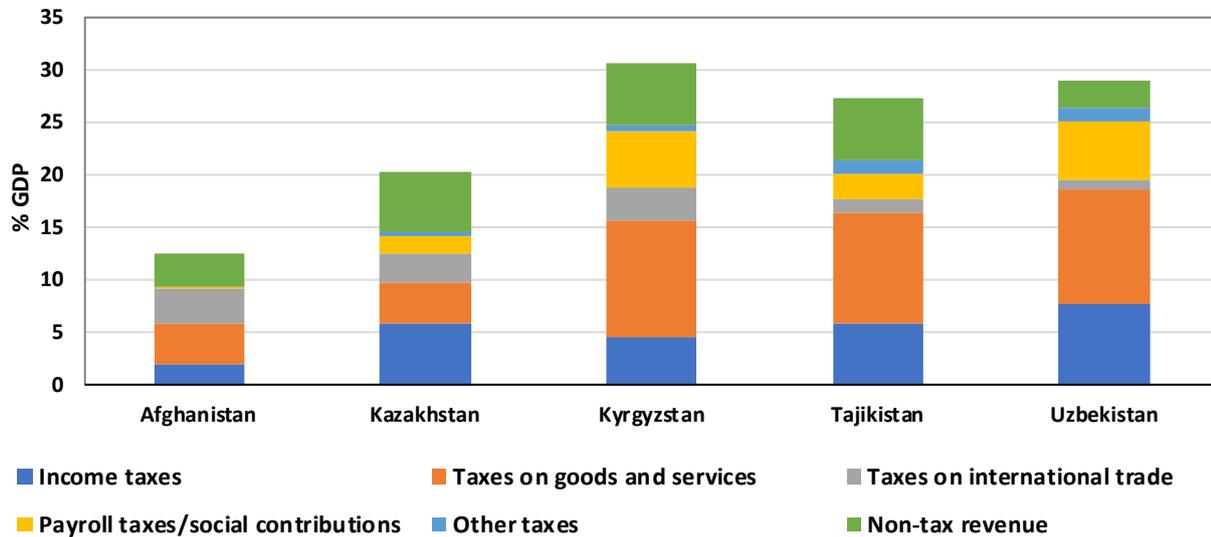
Sources: IMF Government Finance Statistics database, IMF WEO database, Ministry of Finance of the Republic of Tajikistan

Income taxes are the largest source of government revenue in Kazakhstan (almost 6% of GDP or 29% of total domestic revenue). This is due to the development of the corporate sector in Kazakhstan, now a key player in the extractive industry and metallurgy and the backbone of the economy. Uzbekistan collects even more income taxes than Kazakhstan[9] (almost 8% of GDP or 28% of domestic revenue), but this is only the country's second largest revenue source after taxes on goods and services. In the other three countries, the corporate sector is less developed with government-owned and micro, small and medium enterprises (MSMEs) playing a larger role and paying little or no income/profit taxes. Nonetheless, taxation of mining enterprises and individuals' incomes keeps income taxes as the second/third largest source of domestic revenue in Afghanistan, Kyrgyzstan and Tajikistan.

Taxes on international trade (import duties and, in some countries, export duties) are important in Afghanistan, Kazakhstan and Kyrgyzstan (some 2.7-3.3% of GDP) and rather low in Tajikistan and Uzbekistan (1.1% of GDP). In Afghanistan and Kyrgyzstan, the reasons for the large collection of these taxes are the same as for VAT on imports – large imports and better tax administration at the borders. In Kazakhstan, it is not import duties, but rather export duties on crude oil and oil products that generate most of the revenue from taxes on international trade. Kazakhstan and Kyrgyzstan, being members of the Eurasian Economic Union (EAEU), also benefit from the import duty revenue sharing scheme adopted that allocates fixed shares of the union's total import duty collections for each country. Estimated net transfers received by Kazakhstan and Kyrgyzstan from other EAEU members (mostly Belarus and the Russian Federation[10]) are sum-

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9   If collections are measured in GDP percentage points.

10   Reflecting this situation, on 1 October 2019 the Supreme Eurasian Economic Council (composed by the presidents of EAEU member states) has reduced the share of Kazakhstan by 0.1 percentage point in favour of Belarus. This change becomes effective since 1 January 2020.

marized in Table 1. These transfers appear to be rather small in comparison to these countries' total general government revenue (except for perhaps Kyrgyzstan in 2017).

Table 1. Net transfers received by the government budgets of Kazakhstan and Kyrgyzstan due to the EAEU import duty revenue sharing scheme

Kazakhstan	2016	2017	2018
Million USD	141	185	236
% of own import duty collections	25.4	29.0	37.6
% of total general government revenue	0.64	0.56	0.68

Kyrgyzstan			
Million USD	12	41	8
% of own import duty collections	7.2	22.8	3.4
% of total general government revenue	0.55	1.79	0.34

Sources: Ministries of Finance of Kazakhstan and Kyrgyzstan, IMF WEO database, author's calculations

In Kyrgyzstan, the second largest source of general government revenue is social taxes/contributions, which were equivalent to 5.5% of GDP in 2017. Social contributions are also very significant in Uzbekistan (5.4% of GDP). For comparison, these are much smaller in Tajikistan (2.4% of GDP) and in Kazakhstan (1.6% of GDP). Interestingly, the collection of social taxes in Kazakhstan—the richest country of the region—is well below their level in much poorer Kyrgyzstan, Tajikistan and Uzbekistan (there is no such type of tax/mandatory payment in Afghanistan). This relatively low social tax collection rate in Kazakhstan is partially explained by the fact that part of its pension system is fully-funded and functions outside the general government budget. This fully-funded pillar was initially private and was then consolidated into the government-owned Unified Accumulative Pension Fund (UAPF) without integration into the government budget[11]. The government budget includes only the solidary/non-contributory part of the system. According to UAPF reports, total collections of contributions to the fully-funded pillar of the pension system in 2017 were equivalent to 1.4% of GDP. Thus, accounting for contributions to this pillar, total social contributions in Kazakhstan were 3.0% of GDP, i.e. these constitute a much smaller portion of GDP than in Kyrgyzstan and Uzbekistan. The other internal revenue item, non-tax revenue, combines assorted revenue items; it produced more than 20% of total domestic revenue in all these countries except Uzbekistan.

2.4. Government Expenditure

The bulk of government spending in Central Asia is on social protection, education and support to the economy (Figure 5). These three functions consume more than 60% of total expenditure. The only exception in this regard is Afghanistan where, due to conflict, more than half of budget resources is spent on defence, public order and security.

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11   See details in (Maltseva & Janenova, 2018).

Figure 5. General government expenditure by function
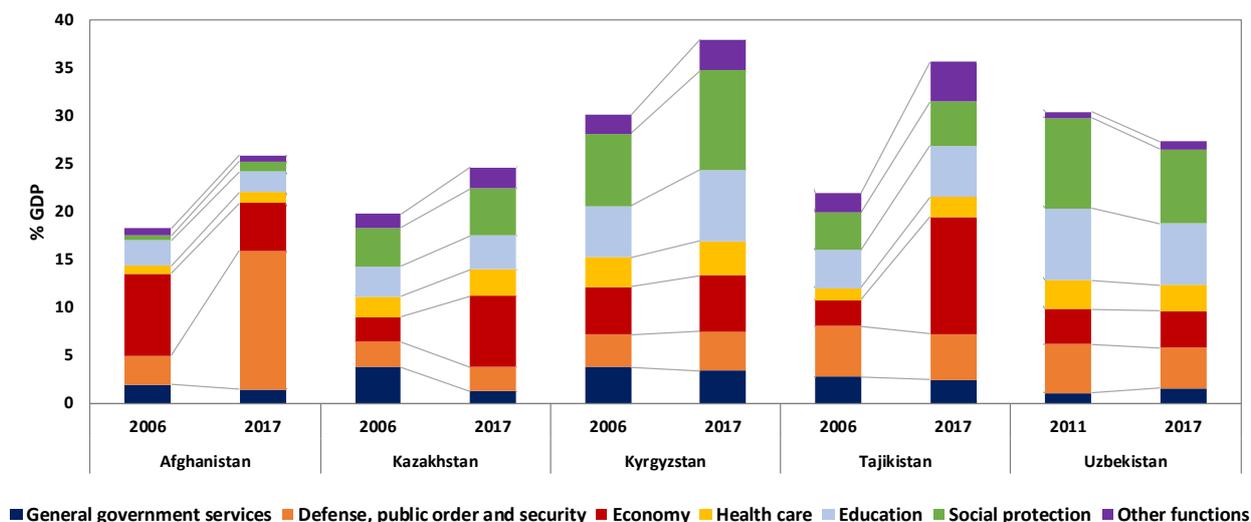
Sources: IMF, ministries of finance and statistical agencies of the countries of the region

The largest expenditure item in Kyrgyzstan and Uzbekistan is social protection (inclusive of social insurance). In 2017, Kyrgyzstan and Uzbekistan spent 10.4% of GDP and 7.7% of GDP respectively on this item; Kazakhstan and Tajikistan, by contrast, spent less than 5% of their GDPs on these purposes. Most of the expenditure on social protection (up to 80%) in all these countries is on pensions for the elderly. Other social protection/insurance programmes (non-contributory social benefits for vulnerable groups of the population, employment-related social benefits, etc.) are relatively small. This is an example of the budget scale/structure similarity between Central Asia economies and those of the emerging and developing Europe category that is explained by their common socialist past and the universal coverage of old-age pension insurance inherited from those times. All five countries of the region increased their social protection spending between 2006 and 2017; in per capita terms and constant prices, it more than doubled in Afghanistan (from a very low base), almost doubled in Kyrgyzstan and Tajikistan, increased by two thirds in Kazakhstan and by 20% in Uzbekistan.

Supporting education is the second largest expenditure item in Kyrgyzstan, Tajikistan and Uzbekistan. Kyrgyzstan and Tajikistan considerably increased their education spending between 2006 and 2017. In Afghanistan and Kazakhstan, education expenditure is the third largest item.[12]

In 2017, there were different levels of government spending on supporting the economy: in Kazakhstan and Tajikistan, supporting the economy was the largest item, the second largest in Afghanistan, the third largest in Kyrgyzstan and only the fourth largest in Uzbekistan (after social protection, education, and defence, public order and security). This spending item includes capital investments in public infrastructure (roads, energy systems, etc.). As infrastructure projects are often expensive and their dynamics are uneven, expenditure increases when a project is at the peak of its implementation and declines when it ends. This explains the spike in spending on the economy in Tajikistan[13] and its relative decline in Afghanistan in 2017.

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12   A more detailed discussion of education expenditure is provided in section 3.4.

13   For the last few years, the government of Tajikistan has considerably increased investments into Rogun Hydropower Plant, which is the main item of spending on the economy.

Other considerable spending functions in these countries are health care, general government services (administration, public debt servicing, and some other types of expenditures), defence, and public order and security.

Another way to look at government expenditure is to consider its structure by economic type (Figure 6) – compensation of government employees, use of goods and services, social benefits to citizens, capital investments and some other items (subsidies, interest payments, etc.). All countries except for Kazakhstan (there is no dynamic data for Uzbekistan) increased their spending on government employees' salaries; the increase was very significant (doubled, if measured in GDP percentage points) in Kyrgyzstan and Tajikistan. In Kyrgyzstan, public sector salaries (including those of teachers, medical workers, civil servants and some other categories of employees) are now the most significant spending item constituting a third of total general government expenditure. This is a very high share by international standards having important (and controversial) implications for the efficiency of government expenditure (see section 3.4).

Spending on goods and services (purchases of necessary materials, medicines, food, utility, transport and communication services, etc.) is the largest item in Afghanistan and Kazakhstan and the second largest in Tajikistan; this spending is rather small in Kyrgyzstan and Uzbekistan. This is the reverse side of very high spending on employees' salaries – little money is left to purchase goods and services.

Social benefits consume a large share of government expenditures in all countries except Afghanistan, reflecting the massive spending on pensions mentioned above. Government-financed capital investments vary from 3-4% of GDP in Kazakhstan to 12-13% of GDP in Tajikistan; this expenditure item is well correlated with the government spending on the economy discussed above. It is worth noting that interest payments (part of other expenditures in Figure 6) have not been sizeable in Central Asian countries – from 0.1-0.2% of total government expenditure in Afghanistan and Uzbekistan to 3.7% of the total in Tajikistan.[14] Neither of these governments spend much money on subsidies to enterprises – the share of this spending varies from 0.5% of total government expenditure (Uzbekistan) to 3.7% of total expenditure (Kazakhstan).

Figure 6. General government expenditure by economic type
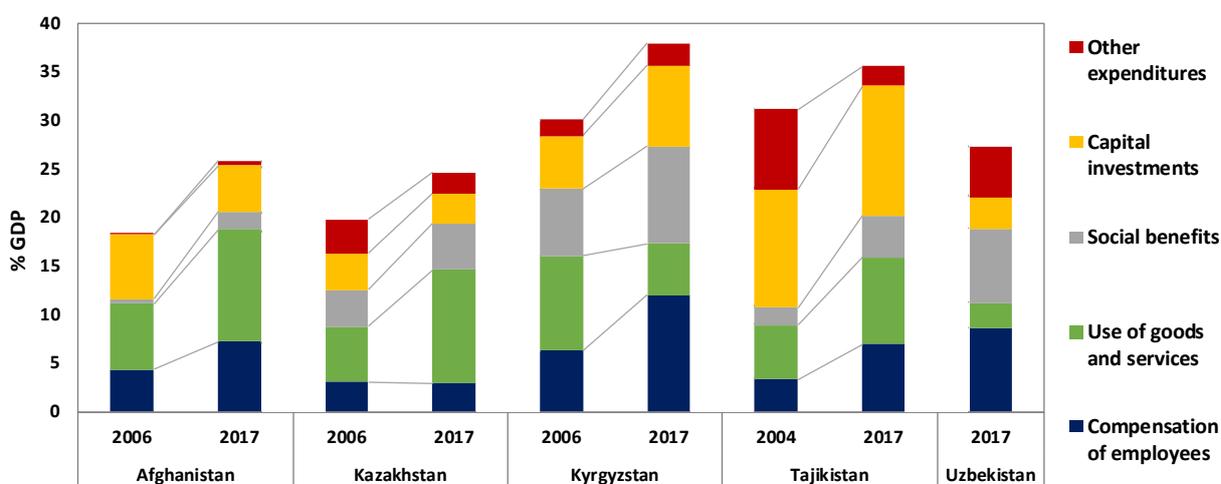
Sources: IMF, ministries of finance and statistical agencies of the countries of the region

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14   The interest payments' share increased even more in Tajikistan since 2018 when the government started servicing its USD-denominated bonds (see the next section).

2.5. Budget Deficit and Government Debt

As previously noted (section 2.2 and Figures 2a-2e), general government budget deficits in Central Asia vary greatly from country to country. Afghanistan usually has a near-zero government balance (foreign aid comes mostly in the form of grants), Kazakhstan and Uzbekistan typically run a positive balance, and the government budgets of Kyrgyzstan and Tajikistan are mostly in deficit.

These differences are largely determined by the ability of the respective governments to finance the deficit. These countries, except Kazakhstan, at their current level of economic development and public finances, have limited or no access to borrowing on international financial markets. Uzbekistan, Kyrgyzstan and Tajikistan have speculative sovereign ratings from Moody's: *B1 stable* for Uzbekistan (as of 13/02/2019), *B2 stable* for Kyrgyzstan and *B3 negative* for Tajikistan (as of 31/12/2018 for both countries). Afghanistan and Kyrgyzstan have never borrowed on international markets. Tajikistan borrowed once in 2017, issuing Eurobonds worth USD500 million with 10-year maturity and an interest rate of 7.125% (source: Financial Times, 7/09/2017). Uzbekistan issued Eurobonds in 2019 in two tranches of USD500 million with 5-year maturity at an interest rate of 4.75% and USD500 million with 10-year maturity at an interest rate of 5.375% (source: Financial Times, 14/02/2019). Kyrgyzstan and Tajikistan keep borrowing on the small domestic financial markets at a high price. For example, in Kyrgyzstan during the period of active domestic borrowing (2015) the weighted average yields on 12-months T-bills reached a record-high level of 13.0%, on 2-year T-bonds – 15.5%, and on 5-year T-bonds – 17.8% (source: NBKR). Uzbekistan launched a domestic borrowing mechanism through T-bonds only at the end of 2018.

Kyrgyzstan and Tajikistan borrow mostly from international financial institutions (World Bank, Asian Development Bank, etc.) or bilateral donors (China, Japan, etc.) on highly concessional terms;[15] this is a form of foreign aid received by these economies. As such, this borrowing is subject to negotiation between the governments and their donors. The scale and timelines of this aid are determined by long term considerations and have no direct relationship to the short-term needs of the budget and the economy. Contrary to conventional understanding, government deficit in these CA countries is not really a discretionary variable managed by governments to smoothen trends in expenditure and, if needed, provide a fiscal stimulus to their economies. In the case of Afghanistan, most of the foreign aid is received in the form of grants, not loans, that is why its government budget deficit is close to zero.

Kazakhstan's situation with government borrowing is different. As mentioned above, during times the period of high oil prices, the government budget had a substantial positive balance (in 2011 and 2013 exceeding 6% of GDP) accumulated in the NFRK. By the end of 2018, the NFRK's resources were USD67.8 billion or 44% of GDP. In a period of relatively low oil prices, the gap between current government budget revenue and expenditure is mostly covered by transfers from the NFKR (equivalent to 4.4% of GDP in 2017). The government still borrows some resources from the domestic financial market and international financial organizations. Moody's sovereign rating of Kazakhstan has an investment grade – *Baa3 stable* (as of 31/12/2018); however, the government has not borrowed recently on international markets.

The government debt situation in the countries of the region is presented in Figure 7. It is a result of the borrowing policy described above. According to the IMF, the public debt burden/ distress is low in Kazakhstan and Uzbekistan, moderate in Kyrgyzstan and high in Afghanistan and Tajikistan. This assessment provides an idea about the room for government borrowing: all

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15   Typically, 20+ years of loan maturity, a grace period of 5-11 years and interest rate of 0.5-2.5 percent.

except Kazakhstan and Uzbekistan should be very cautious in accumulating debt, especially denominated in foreign currency. For Kazakhstan, the IMF has noted that the sustainability of debt can be impacted by shocks in the real exchange rate[16] and for Uzbekistan, the IMF recommends maintaining some modesty in external borrowing.[17]

Figure 7. Government debt as of end-2018
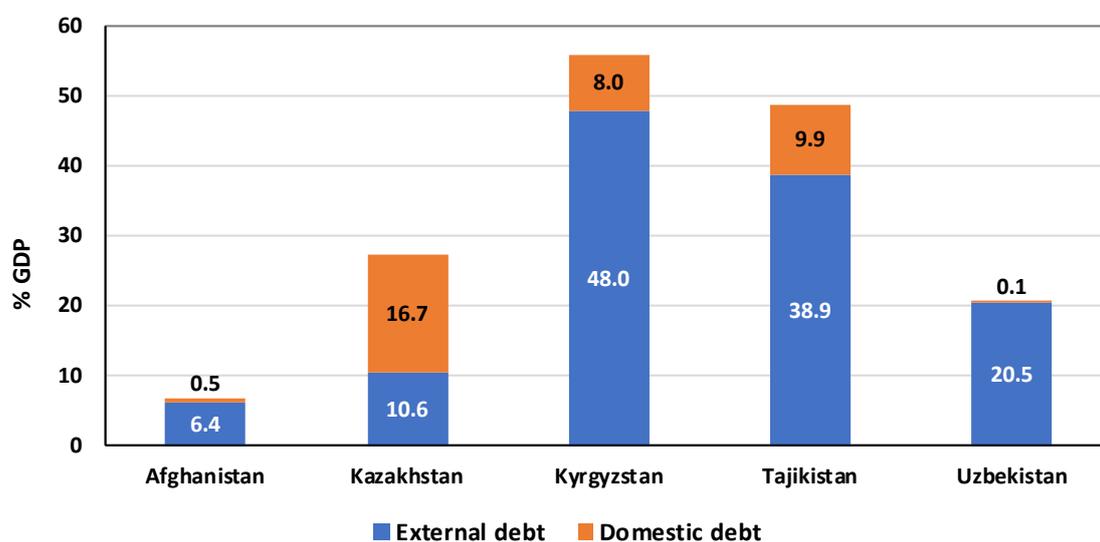
Sources: IMF, ministries of finance of the countries of the region

3.   Selected Issues of Fiscal Policy

3.1. Size of the Government Budget

There is a well-known empirical positive relationship between the level of a country's economic development (e.g. measured by GDP per capita) and the role the country's government plays in its economy (measured by the share of total general government expenditure in GDP), see Figure 8. The trend line slope shown in the figure suggests that, on average, the level of government expenditure increases by 0.8% of GDP as the country's GDP per capita increases by USD1,000. A possible explanation of this relationship is that government efficiency tends to grow as the country's level of development increases whereby the government gradually acquires the necessary capacity for a useful absorption of increased resources. Another explanation refers to increasing the government's resource mobilization capacity through either better tax collection or easier/cheaper borrowing; this type of capacity also seems to improve with higher levels of economic development. Of course, this is a statistical relationship and one could observe multiple and major deviations from this pattern in both directions.

Nonetheless, this line of thinking suggests that governments with expenditure levels too high for their level of development are at risk of spending resources with inadequate efficiency or even wasting resources. At the same time, low-spending governments can be at risk of under provid-

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16   (IMF, 2018).

17   (IMF, 2019).

ing public goods such as education and health services, infrastructure, etc. Both these outcomes are undesirable and pose risks to the sustainable development of these economies.

Flowing from previous discussions (section 2) and Figure 8, it is apparent that the governments of Kyrgyzstan and Tajikistan have a level of government expenditure too high relative to their level of GDP while the governments of Kazakhstan and especially Afghanistan spend too little. These economies' deviations from the trend are in the range of 8-14 GDP percentage points or 25-50% of total government expenditure that is typical for their current level of development. Uzbekistan seems to be the only country in the region reasonably close to the trend line. However, even for this country, it should be noted that some government functions are implemented by state-owned enterprises so that the government budget does not fully consolidate all fiscal activities of the state; this is also the case in Kazakhstan, Kyrgyzstan and Tajikistan (e.g. the widely discussed issue of artificially low energy tariffs in Kyrgyzstan[18]). If these quasi-fiscal activities are considered, government expenditures in these four economies appear to be larger than presented in official statistics.

Figure 8. Relationship between government budget size and GDP per capita
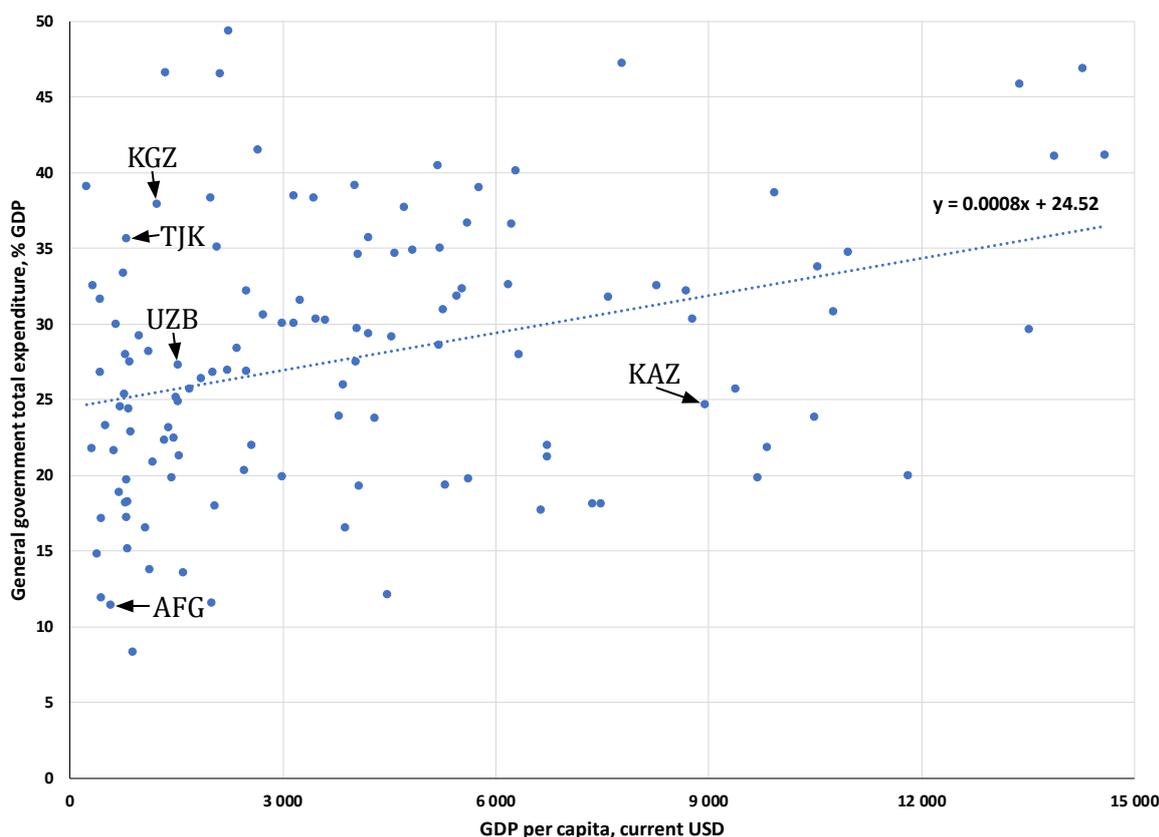
Notes:

    1) 2017 data for 123 countries with GDP per capita below USD15,00019 (some conflict-affected countries and economies with a population less than 0.2 million excluded);
    2) for Afghanistan, only non-security expenditure is considered

Source: IMF WEO database

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18   See (World Bank, 2017).

19   That is the group of countries to which all economies of the region belong now and will continue to stay in for at least another 8-10 years. Hence, this group seems to provide an appropriate reference for Central Asian countries.

The reasons behind these large deviations from the typical international spending patterns differ by country. Kyrgyzstan, Tajikistan and Uzbekistan struggle to meet their inherited vast commitments in the social sector (universal access to electricity, basic/general secondary education, health care, old-age pension coverage, etc.). In this sense, these countries face the issue of a "premature welfare state";[20] namely, when governments try to maintain Western-Europe-style government commitments with many times smaller resources than developed economies have or continue spending levels inherited from the Soviet period. In the Central Asian context, this very high level of expenditure is maintained by substantial inflows of foreign aid, risky borrowing strategies, distortive tax systems, etc.; it is accompanied by suboptimal government spending patterns (see below sections 3.2-3.4). This size of government budget for low or lower-middle income economies does not seem to be sustainable. This means that if some reduction of government expenditure is not achieved in a controlled and gradual manner, it may result in an abrupt contraction of this expenditure since there is always the risk that current government revenues or borrowing can experience abrupt downturns.

The populations of these economies maintain high expectations of their governments in preserving decent access to a reasonable quality of education, health care, social protection and infrastructure. Although downscaling or narrowing down these expectations remains on the agenda of CA governments, implementing such measures is politically difficult. Significant downscaling had occurred in the early years of independence when some countries replaced mandatory general secondary education (11 grades) with basic secondary (9 grades); similar measures were taken in some other sectors (increase in pensionable age, limiting the scope of free health care services, etc.). However, much more needs to be achieved, given the state of the economies. This is a challenging task since fiscal downscaling efforts should not result in the elimination of the most important social achievements of these societies, which are essential for the further sustainable development of these countries. Thus, the governments need to (i) find the most harmless ways to reduce or cap government spending on the economy, the social sector, administration, security and debt service; a task that requires a very careful analysis of government expenditure and its efficiency, and (ii) convince their societies that these measures are for the people's benefit in the long term. However, even if this downscaling is not politically feasible at present, it seems obvious that further expansion of government spending in these economies is undesirable and hardly possible in the long term or even the medium term.

Government underspending could be an equally worrisome issue since it is associated with the above-mentioned risk of insufficient supply of public goods that are critically important for the sustainable social and economic development of these economies. The Government of Afghanistan heavily underspends because of the lack of resources and institutional issues associated with the country's long-lasting conflict. It seems obvious that upon stabilization of the situation, the Government of Afghanistan will have to work on mobilization of domestic resources and non-security foreign aid to significantly expand government spending on the provision of essential public goods such as education, health, energy, roads, etc.

The Government of Kazakhstan is spending a much smaller portion of GDP than almost all other former Soviet republics. This might be due to several reasons. Unlike many other countries, Kazakhstan made major efforts (especially in the 1990s – early 2000s) on downscaling government operations to a sustainable level implementing some far-reaching reforms, including an overhaul of the pension system, commercialization of utilities, etc. Also, the government of oil-dependent Kazakhstan intentionally limits its spending through the accumulation of reserves in the NFRK

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20   See (Kornai, 1997).

to meet the economy's requirements for a rainy day when international energy prices are low. While these policies seem to explain the difference between this country and most other countries of the former Soviet Union, the lag between Kazakhstan's government expenditure and that of its peers in emerging and developing Asia (which had no Soviet heritage) is notable (some 10% of GDP difference in total government expenditure, see Figure 2). This may signal the Kazakhstan government's underspending on key public goods such as education and health care. Some evidence of this is provided in section 3.4.

In any case, government overspending or underspending is a serious issue in the development of these countries with major implications for government expenditure efficiency and economic growth.

3.2. Taxation

In all countries of the region except Afghanistan, tax collection[21] typically stands at the level of about 20% of GDP. This is a relatively high level of tax collection for developing countries, which makes it possible to sustain the large government budgets discussed previously. However, this also means that the tax burden for taxpayers in these economies is significant. Arguably, the burden and economic distortions caused by these countries' tax systems are additionally increased by the specificities of the tax structure (see section 2.3).

There are some features of taxation in the economies of Central Asia that contribute to an increased and unevenly distributed tax burden. It is well established in the literature (e.g. see Stiglitz and Rosengard, 2015) that a good tax system should be based on the principles of vertical and horizontal equity, and efficiency,[22] among others. There are at least three key taxation issues in the region that seem to seriously compromise these principles: (i) widespread special taxation regimes, (ii) differential treatment of economic sectors, and (iii) high payroll taxes or social contributions. These issues are present to varying extents in the tax systems of all five countries discussed in this paper.

Special tax regimes. In parallel to regular regimes of key taxes (VAT, personal and corporate income taxes, payroll tax, etc.), there are widespread special regimes. In many cases, these regimes have been initially introduced to simplify administrative procedures for individual entrepreneurs and micro and small enterprises. Very often, these regimes imply just lump-sum taxation, i.e. the amount of tax liability has no connection to the scale of an enterprise's economic activity. For example, in Kyrgyzstan,[23] farmers, urban individual entrepreneurs and MSMEs in services, and even some manufacturing enterprises are eligible to pay a lump sum tax instead of income tax and payroll tax (social contributions). In this regime, entrepreneurs are free not to have bookkeeping of their operations. There is a ceiling for turnover (KGS8 million or USD115,000 per annum as of 2019) above which taxpayers must transit to a regular tax regime. In practice, however, it is difficult to assess whether the threshold is crossed since there are no official records of taxpayers' economic activities. The lump-sum rate is beneficial for those in the special regime; farmers pay just 0.1-0.2% of their gross income/turnover in this tax regime while their tax liabilities

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21   In this paper, social security contributions are included in tax revenue.

22   Vertical equity means that those who can afford to pay higher taxes should do so. Horizontal equity implies that people having a similar level of income and facing similar economic circumstances should pay similar amounts of taxes. Efficiency means that tax system should cause minimal distortions in the economic behaviour of people, i.e. introduction/increase/reduction of taxes should not cause major changes in people's productive behaviour (amount of time worked, organization and legal form of enterprise, economic sector to invest, products to consume etc.).

23   Here and below in this section, many examples refer to Kyrgyzstan due to the availability of necessary economic and tax data in this country. However, these issues are also relevant for other countries of the region.

in the regular income tax regime would be about 3% of turnover (author's calculations based on STS and NSC data for 2018). Savings on taxes for urban entrepreneurs are also impressive – up to 5-10 times compared with the regular regime. There are also other special regimes for MSMEs (e.g. turnover[24] tax with low rates and simplified accounting instead of income tax and VAT), which are beneficial as well for their users but perhaps less so than the lump-sum regime.

The possibility to make large savings on taxes makes these special regimes very popular. Many enterprises that should normally be in the regular regime manage to present themselves as being eligible for any of the special regimes. It would not be an exaggeration to say that only state-owned enterprises, foreign-owned or joint ventures with foreign shareholders and enterprises with significant economies of scale (which make them large and easily noticeable, e.g. many types of manufacturing, banks or mobile operators) stay in the regular taxation regime. Meanwhile, the vast majority of other domestic private enterprises endeavour to fall under some special regime. Often this implies artificially constraining the size of the enterprise to allow staying in the special regime for MSMEs. The strategies of owners and managers to keep enterprises relatively small often hinder their development since they cannot benefit from modern technologies and equipment which require some minimum scale to be efficient; meanwhile, such enterprises do not accumulate the necessary experience in using the appropriate engineering, product quality management, legal, accounting and human resource management, and other business development expertise as these are not affordable or required for micro and small enterprises (IMF, 2016). In effect, highly favourable special tax regimes encourage businesses to remain in the informal economy, which is a good survival mechanism, but hardly an effective driver of development.[25]

From a fiscal perspective, this situation results in a major shift of the tax burden towards enterprises paying regular taxes. In Kyrgyzstan in 2017, such enterprises paid 96% of the total collection of social contributions while their share in total employment was only 31%. By contrast, farmers and individual entrepreneurs and others enjoying the special tax regime accounted for 69% of total employment and paid only 4% of social contributions. This meant that a person employed at an enterprise with a regular tax regime paid 55 times more in social contributions than someone whose employer uses a special tax regime.

It is rather obvious that the uneven treatment on such a scale creates major distortions in the economic behaviour of the population. It also severely erodes public perceptions of the tax system's horizontal equity as people in the regular tax regime pay much more than those enjoying special tax regime status even if their income levels are similar. The same issue arises concerning vertical equity, e.g. teachers and medical workers who are employees of regular tax regime organizations typically receive less than the economy's average wage[26] while many who benefit from special regimes earn more than this average. This issue also has a gender dimension given that women are represented significantly more among workers of education, health, social service, financial and other regular tax regime enterprises, while men dominate in the better-pay-

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24   Using turnover as a tax base means that the turnover should be assessed, so some official reporting still exists. However, the accuracy of the turnover's official assessment might not be high in these economies, which are cash-based and where it is easy to conduct transactions without bank intermediation and, hence, proper registration.

25   While tax regime is one of the important factors influencing the decision to grow an enterprise and formalize it or stay small and informal, there are many other elements of economic, institutional, social environment that also matter in such decision-making (La Porta and Shleifer, 2008).

26   In 2018, the average salary in education (in percent to the average wage in the economy) was 63% in Kazakhstan, 69% in Kyrgyzstan, 79% in Tajikistan (data for 2019), and 77% in Uzbekistan (sources: national statistical agencies of these countries). The salaries of medical workers are even lower in all these countries.

ing enterprises benefitting from special tax regimes. This is one of the key reasons for the well-known gender pay gap in Central Asia.

Tax privileges for some economic sectors and types of taxpayers. Favourable tax regimes exist not only for individuals and MSMEs but also for some sectors of the economy and taxpayers regardless of enterprise size. For example, all agricultural enterprises in Kyrgyzstan are exempt from profits tax, VAT and all other taxes except land tax (which, as noted, has very low rates). Some other sectors (garment industry) receive similar treatment with light taxation. This creates major incentives to concentrate economic activities in low-taxed sectors of the economy and can result in efficiency and equity implications like the special tax regimes discussed above.

Moreover, VAT exemptions for upstream value chain participants (farms) effectively shift the burden of VAT to the downstream value chain enterprises (processing, wholesale and retail), which are unable to receive any VAT credit for the agricultural raw materials they use. This destroys the logic of VAT as a domestic consumption tax and makes it similar to turnover tax. Another feature of VAT exemption in Central Asia is that domestic producers are the primary beneficiaries. VAT taxation of imports is more consistent with a regular tax regime. In addition, VAT on imports is usually better administered than VAT on domestic production. This creates an asymmetry in the VAT revenue structure. In 2018, VAT on imports accounted for 61% and 77% of total VAT collections in Kazakhstan and Kyrgyzstan, respectively. In effect, massive exemptions of domestic VAT payers tend to convert VAT almost into a parallel import tariff. This has major implications for this tax's effectiveness as a government revenue collection tool. One could define the effectiveness of VAT as the ratio of actual VAT collections to the VAT's theoretical tax base[27] which could be approximated by households' final consumption expenditure. The extent of exemptions for domestic producers and importers combined with the scale of imports relative to GDP provide the relationship between statutory (established by the laws of the respective country) and effective VAT rates shown in Figure 9. These data could be interpreted in the following way:

- Due to widespread exemptions and administrative shortcomings, the high statutory VAT rate does not necessarily result in higher VAT collections. Thus, Uzbekistan collected the amount equivalent to just 8% of households' final consumption with a 20% statutory rate, while Kyrgyzstan collected more than 10% of households' final consumption with a much lower statutory rate of 12%; with this observation in mind, it is not surprising that the Government of Uzbekistan lowered the VAT rate to 15% starting 1 October 2019;

- For countries with high merchandise imports to GDP ratio (i.e. Kyrgyzstan and Tajikistan where this ratio in 2017 was around 60% and 40%, respectively), VAT is a more important tax than for countries with smaller (relative to GDP) merchandise imports (Kazakhstan and Uzbekistan where the ratios in 2017 were around 20%).

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27   I.e. tax base in the absence of any exemptions, full credit of VAT paid on production inputs, full implementation of zero rate for exports etc.

Figure 9. VAT rates, 2017
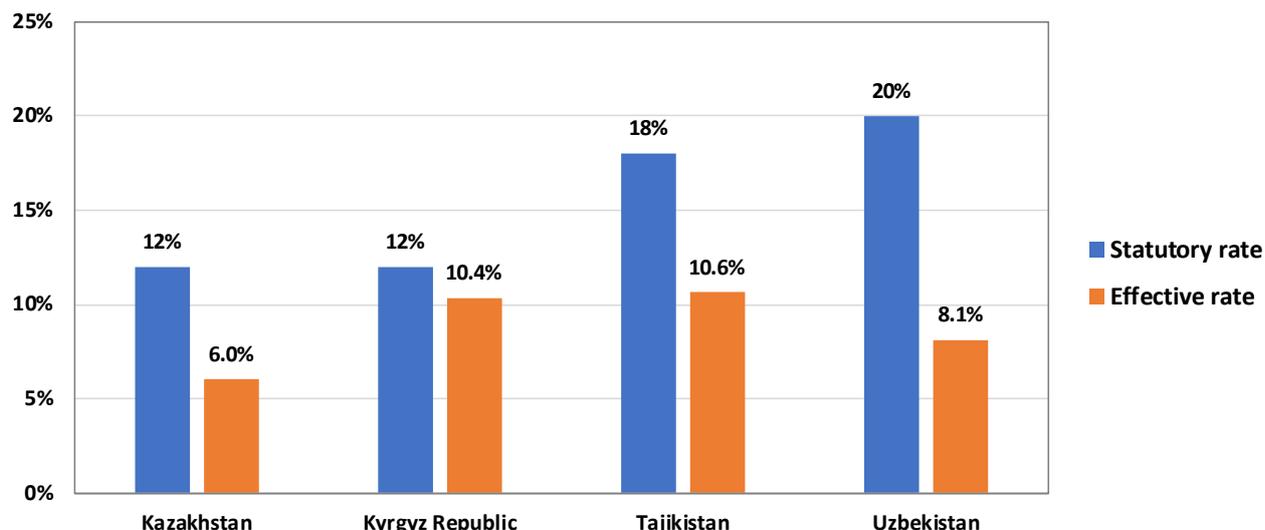
Sources: WDI, ministries of finance of the countries of the region

Note: For Tajikistan, the figure shows the VAT rate applied to most economic sectors; for the other three countries, there is only one non-zero VAT rate; Afghanistan has not introduced VAT yet.

Social contributions. Special treatment of selected taxpayers discussed above can be a major source of economic distortions. In some cases, however, major economic inefficiencies could be associated with the regular tax regimes. The most important example of this in Central Asia is payroll tax or social contributions. The tax base for these contributions is payroll. Cumulative[28] rates of this tax for a non-privileged taxpayer are high in Central Asian economies: 24.5% of an employee's gross salary in Kazakhstan, 27.25% in Kyrgyzstan, 26% in Tajikistan and 25% in Uzbekistan. These rates allow for relatively high collections of social contributions as noted in section 2.3. This tax effectively penalizes enterprises with a high payroll, i.e. for using skilled (and, hence, highly paid) labour and for job (and, hence, wage) creation in economies facing major challenges of employing their abundant labour resources. Many enterprises try to avoid/evade paying this tax either through the choice of the legal form and scale of operations making them eligible to benefit from some of the special regimes, or to underreport on payroll (with adverse implications for workers' legal protection, pension and health insurance). All of this results in major losses for economic efficiency and taxation equity.

3.3. Aid Dependence

Three of the five countries under consideration—Afghanistan, Kyrgyzstan and Tajikistan—are dependent on foreign aid that is received either in the form of grants,[29] or highly concessional external loans (Figure 10). In 2017, Afghanistan received more than half of its budget in the form of official development assistance (ODA); and the share of foreign aid in the general government expenditure of Kyrgyzstan and Tajikistan, although smaller was still quite significant – 15% and

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28   This includes different types of social contributions made by both employer and employee.

29   Only grants provided to the governments of respective countries and explicitly accounted in their budgets are considered here. These countries also receive substantial aid flows in the form of grants to international and local NGOs which might be important for the provision of many services in the country, but which do not constitute a part of public finance.

13%, respectively. These countries have received foreign aid from international development organizations and governments of richer countries for decades.

Figure 10. Internal and external budget resources, 2017
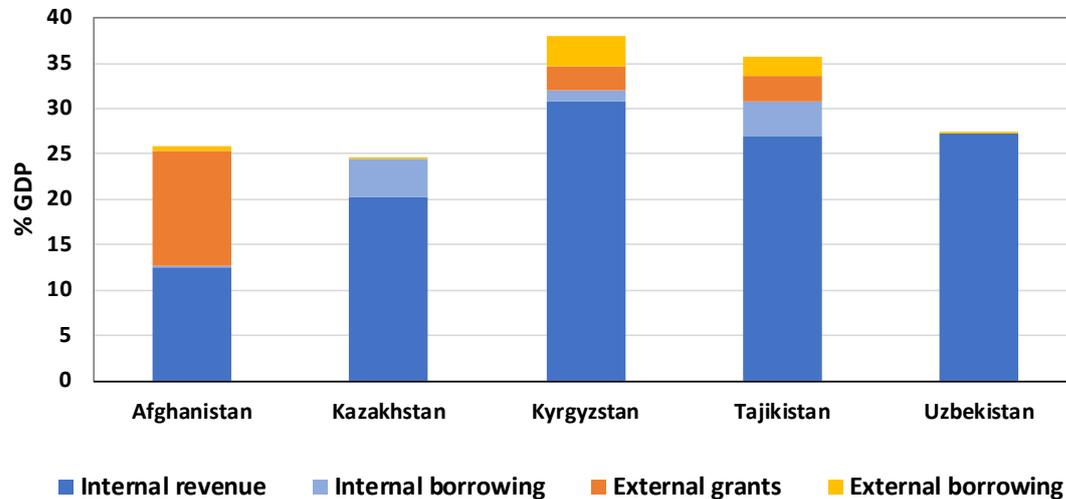
Sources: IMF WEO database, ministries of finance of the countries of the region

In most cases, foreign aid commitments are short- or at best, medium-term. This adversely affects the predictability of the flow of resources available for planning government budget expenditures – even a three-year horizon of expenditure planning becomes difficult. For example, the Kyrgyz Government's "Main Directions of Fiscal Policy of the Kyrgyz Republic for 2020-2022" (published in 2019) seemingly paradoxically forecasts a major decline of general government budget expenditure from 38.6% GDP in 2019 to just 33.9% GDP in 2022 despite an average expected economic growth rate of more than 4% per annum and no major negative shocks to domestic revenue resources. The only reason for this kind of forecast is the lack of confirmed inflow of external resources over the next three years. In such an environment, medium-term budget planning and the implementation of medium-term expenditure programmes becomes much less useful than it should be, and efficient long-term development of public infrastructure is difficult to achieve.

Another issue is the effectiveness of foreign aid. This subject is well reflected in the literature (see Edwards, 2014). The issue is highly relevant in the Central Asian context, as witnessed by insufficient and unsustainable foreign public debt in some of these countries (see section 2.5 above). Importantly, until very recently, all external public debt in Central Asia was accumulated only through foreign aid flows with virtually no commercial borrowing. If debt is not sustainable even when practically all loans are provided on highly concessional terms, it raises the question of the long-term efficiency of aid since it is often unable to support the achievement of GDP growth goals and the requisite government revenue needed for the smooth servicing of its debt.

Another foreign aid issue concerns aid delivery modes. Often, the provision of concessional loans for some projects by a donor (especially those related to the construction of infrastructure) is tied to the non-competitive selection of the technical solution and equipment required, with the contractor and labour force originating from the donor country. The lack of competition and insufficient efforts for indigenous capacity building in the process of aid project implementation significantly reduce the development impact, effectiveness and efficiency of the aid. The issue

of tied aid is well-known and used to be widespread. Some time ago, the OECD Development Assistance Committee (DAC) started paying serious attention to untying ODA, e.g. see the recent DAC recommendation (OECD, 2019). Over the last 10-15 years, many donor organizations and countries have made good progress in untying aid flows. However, some other donors continue to apply aid-tying practices. This means that project implementation costs appear higher than they would be if the same projects were implemented based on a competitive and transparent process. In turn, higher than necessary costs means an effective interest rate for a concessional loan higher than a nominal one (i.e. the rate found in the loan agreement). If one denotes **k** the cost inflation coefficient due to a non-competitive process (**k**>1), then the loan's effective interest rate **i*** could be linked to the loan's nominal interest rate **i** (in percent per annum) and loan maturity **T** (years) by the following formulae:

$$i^*=ki+100(k-1)/T.$$

This relationship accounts for both increased interest and principal payments due to the inflated loan amount. For example, in a hypothetical case of a loan with a nominal interest rate of 2% per annum, 20 years of maturity and a cost inflation coefficient of 1.2 (i.e. project costs are 20% higher than necessary) the loan's effective interest rate would be 3.4% per annum, i.e. substantially higher than the nominal rate. However, even accounting for overpricing, such loan terms remain much lower than the terms of recent commercial loans received by Tajikistan and Uzbekistan (5-7% interest rate and maturity of 10 years, see section 2.5). Thus, tied loans remain concessional, if the cost inflation coefficient is not too high and the loan maturity is long enough.

3.4. Government Expenditure Efficiency

The matter of spending efficiency is relevant not only for foreign aid but for all government expenditures in Central Asia. As noted in sections 2.2 and 2.4, some governments manage large (sometimes too large) parts of these countries' GDP. Of all these countries, only Kazakhstan and, to a much lesser extent, Uzbekistan seem to have some room for an increase in government expenditures as a share of GDP. Hence, improved efficiency (i.e. increased quantity and quality of outcomes for the same money due to better allocation and use of resources) remains the only resource for upgrading government services.

However, these large GDP shares do not always translate into substantial amounts per government service user because their levels of GDP per capita (except Kazakhstan) are rather low in comparison to natural peers – other post-socialist countries or developing economies in Asia. Figure 11 illustrates this point by comparing government spending of five Central Asian economies on education with that of the Republic of Korea known to be one of the best economic development performers in Asia and beyond. Per student spending as a percent of GDP per capita is higher in Uzbekistan and Kyrgyzstan than in Korea, and Tajikistan's spending is not far behind. Afghanistan and especially Kazakhstan, however, spend much lower shares of their GDP on education than Korea. Of course, in absolute terms (USD per student), the situation is very different. In Kazakhstan, due to its relatively high GDP per capita, the low GDP share of government education spending translates into much higher dollar value of government education expenditure than in other Central Asian countries: per student, Kazakhstan spends two times more than Uzbekistan, three times more than Kyrgyzstan, six times more than Tajikistan and 13 times more than Afghanistan. However, when compared to Korea, the absolute value of Kazakhstan's

spending looks very modest: Korea spends seven times more than Kazakhstan per student. This gap is explained by differences in GDP per capita and GDP shares of education spending. Even if one measures the absolute level of expenditure not in US dollars at the current exchange rate, but in international dollars at purchasing power parity (PPP), the huge gaps in per capita spending between Kazakhstan and other Central Asian countries remain; as is the case when Korea and Kazakhstan are compared. Similar relationships also apply to government spending on health care (Figure 12).

Figure 11. Government expenditure on education, all education cycles, per student, 2017

a)   relative terms (% GDP per capita)

b)   absolute terms (USD at current exchange rate)
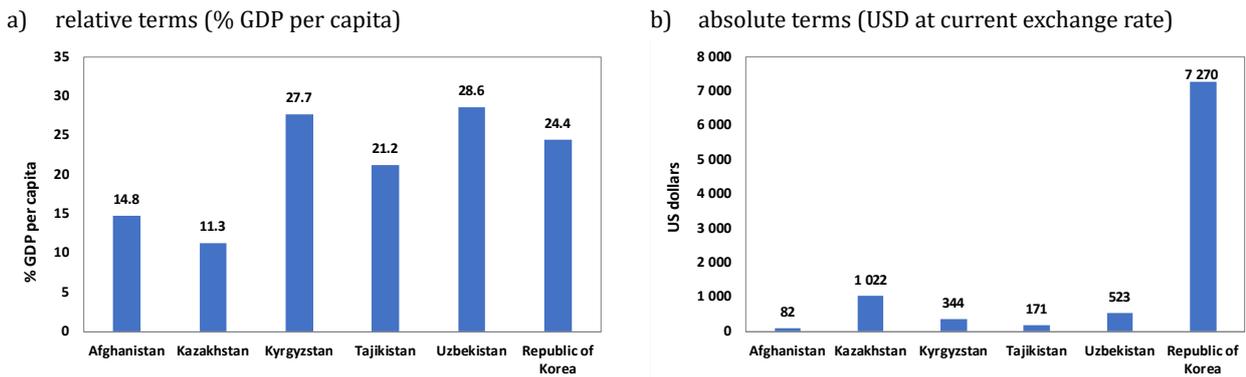
Sources: WDI, UNESCO Institute for Statistics, author's calculations

Figure 12. Government expenditure on health per capita, 2017
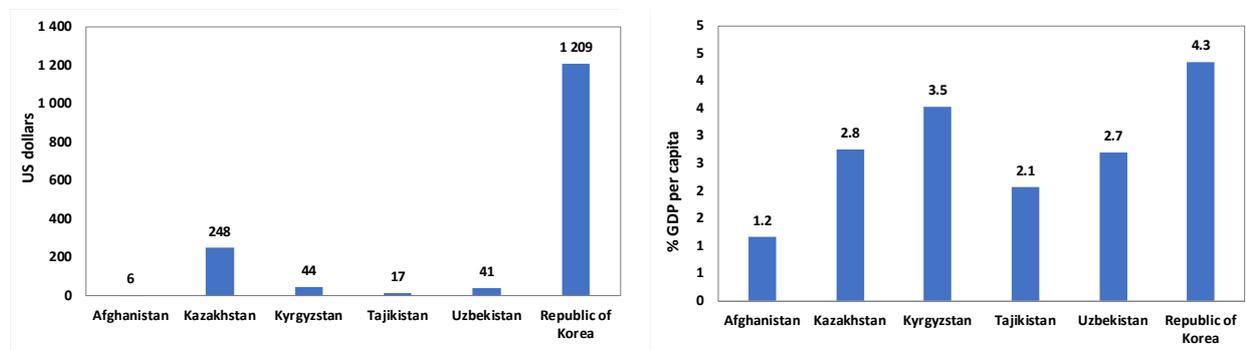
Sources: WDI, IMF, author's calculations

Most government interventions and spending are in non-tradeable sectors (primary and second-ary education, primary health, roads, public administration, etc.). Traditionally, it was assumed that the share of a government's budget as a percent of GDP spent on the provision of services was a key determinant of the quality of services. However, in the current Central Asian context, the absolute (rather than relative to GDP) level of expenditure per service user is what matters regarding the quality of services delivered. The salaries of teachers, doctors and other profes-sionals providing services in these economies are persistently low (see footnote 26 above), which offers considerable incentive for these professionals to leave their occupations for better-paying sectors. International migration to better-paying economies (primarily Russia and Kazakhstan) has recently become much easier than before. Retaining skilled labour in government-funded positions in the long term would require making salaries nationally and internationally com-petitive (adjusted for the costs of migration between sectors and locations). Moreover, modern

quality health care, education and many other government-budget-financed activities are technology-intensive, thus technology costs should be growing in the cost structure of government services. All these technologies (training/retraining of personnel, equipment, materials/medicines, know-how, etc.) must be imported, and prices for these items are close to international levels. For these reasons, the absolute level of unit costs (in USD or other monetary units) is the main budget indicator and, in the long term, a predictor of the quality of government services. In Central Asia, service quality (rather than service coverage) will be the key variable in discussing spending efficiency because for many essential government services (secondary education, primary health care, access to roads and electricity, etc.) population coverage is close to saturation.

The above discussion of low/insufficient unit education costs in all Central Asian economies points to service quality and spending efficiency issues. To assess and compare spending efficiency in different countries, one needs data on both service quality and spending. Such data exist in education since there are a number of international comparative assessments of education outcomes. The most recent study of this kind was the latest round of the Programme for International Student Assessment (PISA) organized by the OECD in 2018, covering 78 countries and territories, including Kazakhstan, the only Central Asian country in the group. PISA measures 15-year-old secondary school students' scholastic performance in mathematics, science and reading. For the purposes of this paper, it is useful to analyse a graph from the OECD report (Figure 13). One can observe a general trend of improvement in the average PISA scores with an increase in spending per student.[30] However, there is a lot of variance around this trend. Points (countries) above/below the trend line demonstrate better/worse education outcomes than the average score for their spending level and, hence, its spending efficiency is above/below the globally "normal" level. The point for Kazakhstan is located well below the trend, which means that its education spending efficiency is below average. Indeed, Kazakhstan's score is below the scores of other post-socialist countries such as Montenegro, Moldova and Romania and is much less than the scores of Ukraine, Belarus and Russia: all these countries spend roughly the same amount of money per student as Kazakhstan and have the same or lower GDP per capita. This suggests that Kazakhstan and most likely other Central Asian economies[31] have issues with spending efficiency on education. A detailed analysis of these issues and the available reserves for improvement of education outcomes without an increase in spending level requires a discussion of the economies of scale, or lack thereof, due to geography and population composition, education sector organization and governance, teaching methodologies, etc. However, this is beyond the scope of this paper. Similar studies are also needed for other major public spending sectors (health, roads, energy, etc.).

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30   Of course, this does not necessarily mean that there is a causal relationship between these two variables. It is possible that they just have common correlates such as the general level of economic development, the accumulated stock of human capital etc.

31   The very fact of their non-participation in this international comparison study seems to witness the governments' low expectations regarding the testing outcomes.

Figure 13. PISA reading score vs. education expenditures, 2018
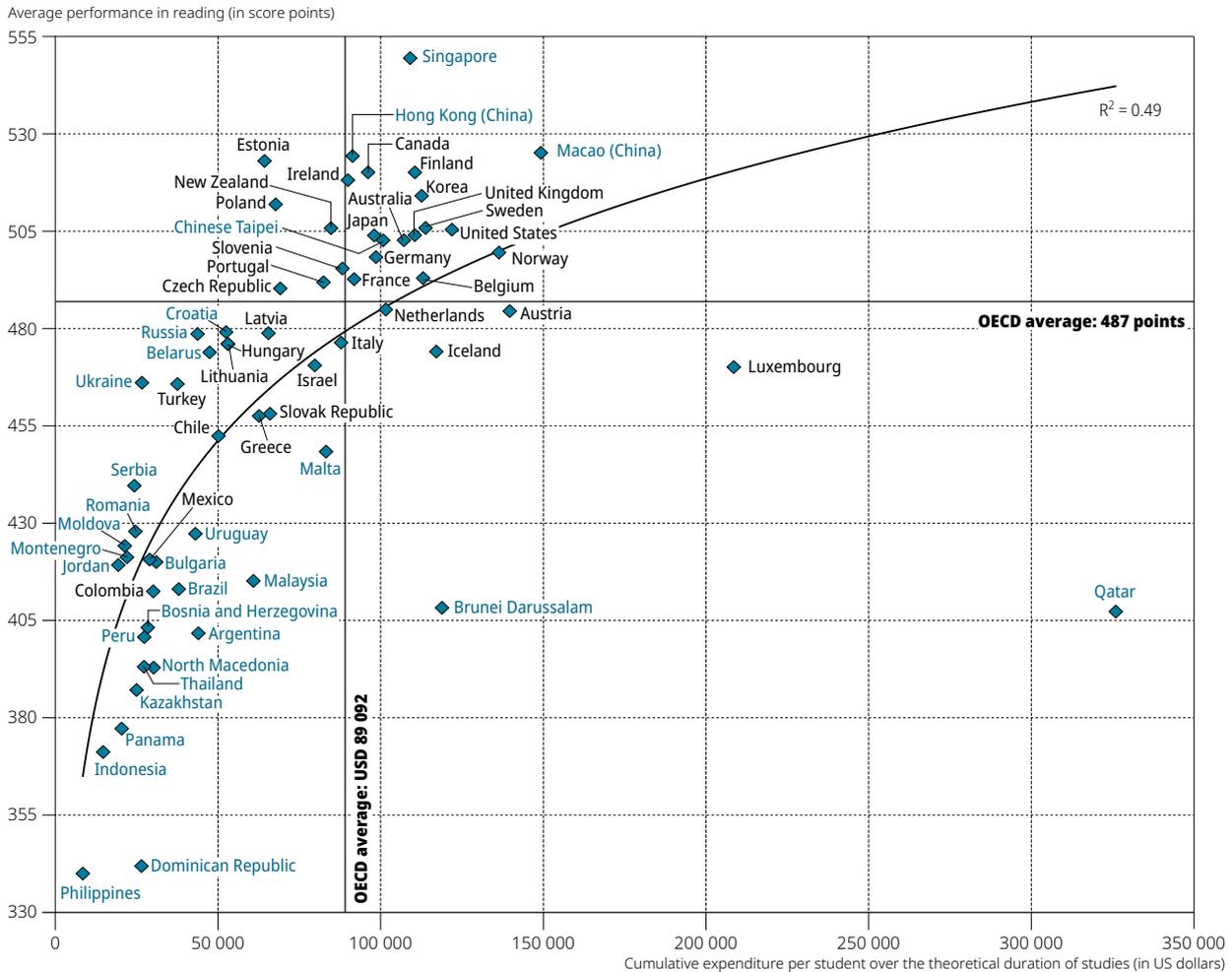
Source: (Schleicher, 2019)

As mentioned in section 2.4, some countries of the region spend a high share of their government expenditure on employees' compensations (salaries and employers' social contributions); in Kyrgyzstan and Uzbekistan, this share exceeds 30% of total government expenditure. In countries that are development performance leaders, the share of this spending in total government expenditure is usually in the range 20-30%: for example, in 2017 it was 30% in Estonia and 20% in the Republic of Korea (source: IMF). This high share of employees' compensations is combined with very low spending on goods and services (Figure 6) – in 2017, it was less than one half and one-third of employees' compensations in Kyrgyzstan and Uzbekistan, respectively. Typically, in countries with well-performing government systems, this ratio is between one half and one. In practice, a low level of this ratio means that there are teachers at schools who do not have enough textbooks, equipment, materials for physics and chemistry labs, etc. which adversely affects the overall teaching process. The same applies to the health system, energy and transport system maintenance, and other sectors. Under these conditions, one cannot expect government services to be of desirable quality. Even with these high shares of spending on government employees' salaries, the absolute and relative level of these salaries in Central Asia is low. An increase in salaries of government employees (to attract/retain skilled labour) and a simultaneous even larger increase in spending on materials, equipment, etc. (goods and services) seem necessary for efficiency improvements. The only feasible scenario to achieve this is to reduce the number of

people working for the government and increasing the efficiency of those who remain. This is a technically non-trivial and politically and socially challenging issue the governments need to address. For example, this change might have mixed gender implications. Reducing the number of jobs in the government sector might adversely affect women who are massively employed in this sector. On the other hand, women who remain in the system would become better paid, and the gender pay gap would be substantially reduced. Such a change would have to be accompanied by a well-thought-out retraining programme for released employees and measures to ensure a stable and predictable environment for jobs in the private sector (something many female employees seek when choosing employment in budget organizations).

Interestingly, in Kazakhstan, the situation is reversed – it spends an unusually small share of its government budget (12% in 2017) on employees' compensations. For instance, the salaries of teachers and doctors are well below the country's average wage level. Kazakhstan is probably the only country in the region where an increase in government spending on employees' compensations in both absolute and relative terms might be desirable.

In the case of infrastructure services (energy systems, roads, utilities), there is a trade-off between financing them through user fees vs. direct government expenditure. In other words, the question concerns who is going to pay for these services: the service user or the taxpayer? In Central Asia, financing through taxpayer funds means massive government borrowing for infrastructure projects, which is associated with the foreign debt servicing risks that are high in Afghanistan, Kyrgyzstan and Tajikistan (see section 2.5). The option of financing through the introduction or increase of user fees may have significant positive efficiency implications as higher user fees tend to discipline both the service users and providers by incentivizing users to avoid wasteful behaviour and to supply better and more critical feedback to providers. Of course, this option is also challenging politically and requires governments to implement accompanying measures to support the most vulnerable layers of the population.

However, the situation is also complicated by the fact that very often the infrastructure sectors are natural monopolies. Currently, the governments in the region have a strong preference for the taxpayer financing mode. Almost all capital investments in infrastructure are funded by governments (in Afghanistan, Kyrgyzstan and Tajikistan these are often within the framework of donor-supported projects). Public-private partnerships in infrastructure in the region are rare, except perhaps in Kazakhstan, where according to PPP Knowledge Lab data (https://pppknowledgelab.org/), 15 projects worth USD2.0 billion have been implemented in the last 20 years (not a large amount given this economy). Toll roads are at the early stages of their introduction in Kazakhstan and Tajikistan and in the planning and discussion stages in other countries. Energy tariffs are modest or low – the typical tariff per kilowatt-hour for households varies from USD0.04-0.07 in Afghanistan and Kazakhstan to just above USD0.01 in Kyrgyzstan. This could be compared with USD0.08 in China, India and Vietnam and USD0.10-0.34 in most OECD countries (source: https://www.globalpetrolprices.com/electricity_prices/). It is often argued that energy tariffs are and should remain low in the countries of the region because a significant part of their energy comes from hydropower with very low marginal costs. This logic is not entirely convincing since financially sustainable tariffs should cover not only variable but also fixed costs (i.e. investment costs, which are huge in the hydropower sector). In practice, in most cases, the low tariffs or the free provision of services for users is associated with systematic under-financing of the services, connotes poor maintenance of the systems, encourages users' wasteful behaviour and results in low quality services (frequent and unpredictable electricity cut-offs, potholed roads, etc.).

The gradual transition to user fees as the main source of infrastructure financing would also be beneficial for the introduction of renewable energy, energy saving and other environment-friendly technologies that are currently heavily under-utilized in the region due to seemingly inexpensive traditional energy sources. If energy stops being low-cost for consumers, investments into new energy technologies will become more attractive economically and socially. Such a change would require appropriate institutional adjustments, e.g. combining large (hydropower or thermal energy plants) and small (solar panel) energy generators into one electricity grid could be a challenging task. Moreover, targeted social assistance should be provided to those most needy who could suffer from a possible increase in energy tariffs.

4.   Fiscal Policy Measures to Support Technological Development

Economic development based on technology-driven productivity growth is possible only through public and private investments in human resources, knowledge and physical capital, i.e. skilled labour capable of handling the technologies, equipment and knowledge. Fiscal policies aimed at technological development should support these investments. Considering the fiscal policy issues in Central Asia as discussed above, and in light of global experience (IMF, 2016), CA governments could use fiscal policy to promote innovations and technological development by:

- Maintaining macroeconomic and fiscal stability which includes a predictable tax regime, manageable government budget deficit and government debt etc.;

- Supporting public and private investments in human capital through the development of the education system and the attraction and retention of skilled labour;

- Developing production infrastructure (energy, water, transport, ICT, etc.) critical for the utilization of modern technological solutions;

- Supporting research and development (R&D) in the public and private sector;

- Fostering technology transfer and adoption thorough imports and foreign direct investments; and

- Providing incentives for entrepreneurial innovation.

Macroeconomic stability is a mandatory pre-requisite for long-term investments in human and physical capital and arguably is the area in which fiscal policy could make the most important contribution to productivity growth. This topic is well-researched and discussed elsewhere.

In the case of Central Asia, current support for R&D per se is not seen as particularly relevant as compared to developed and some emerging market economies. Governments of the region spend very little on R&D (Figure 14) as a percentage of GDP and in terms of total government expenditure. Compared with good performers in emerging Europe (Estonia) and emerging Asia (Malaysia), the gap is 4-6 times. The Global Innovation Index (GII) 2019[32] provides the following ranks for Central Asia: Kazakhstan – 79 (below expectations for its level of development according to the GII report), Kyrgyzstan – 90, Tajikistan – 100 (both countries are in line with expectations for their level of development); Afghanistan and Uzbekistan were not included into this study. This evidence points to two issues: (i) the countries and governments need to make a consistent effort to build their innovation systems, and (ii) this is a long-term task, and not a short-

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32   Cornell University, INSEAD, and WIPO, 2019.

or medium-term priority. The current level of development of innovation systems does not allow for fast progress, even if there was an injection of additional resources. In the case of Central Asia, the priority is not new technology generation as such. Rather, efforts should concentrate on the absorption and adaptation of technological knowledge generated outside the region. This might have serious implications for some other policy trade-offs.

Figure 14. Government expenditure on research and development, 2015
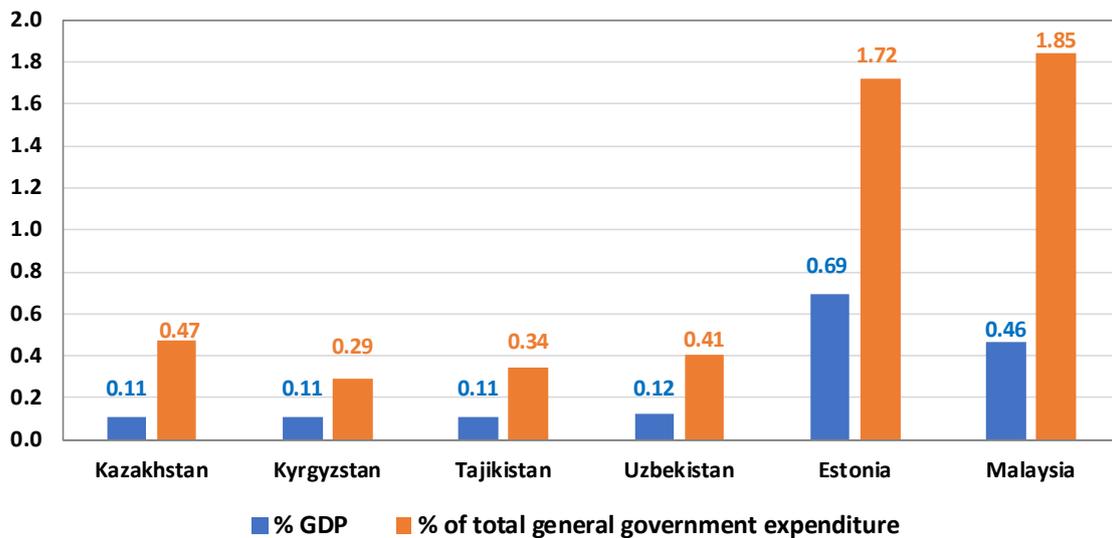
Sources: UNESCO Institute of Statistics, IMF WEO database, author's calculations

At first glance, the need to develop infrastructure seems to be one of the least controversial topics since most tend to agree that productivity growth is hardly possible without proper energy, transport, ICT and other systems. The high priority assigned to infrastructure development by the Central Asian governments is well-grounded and reflected in massive spending on the economy, i.e. mostly infrastructure (see section 2.4). However, there are still some questions for discussion related to resource allocation within this budget pocket.

In many cases, technology-led productivity growth is dependent on the availability of modern equipment. To function properly, equipment requires an uninterrupted and reliable electricity supply, i.e. a modernized electricity distribution system. In the case of agricultural and food production (an important sector in Central Asia) and some other manufacturing and service industries, reliable water supply and sewage are necessary. Productivity in services, the group of sectors currently contributing more than 50% of GDP in virtually any economy in the world, requires appropriate urban and rural development, including street maintenance, regulation of road traffic, waste management, etc. Access to the internet and other means of communication are an integral part of modern production technologies in all economic sectors (including also social services – health, education, etc.). This list could be continued. These types of infrastructure consume relatively minor parts of the resource envelope of public investment programmes in Central Asia. Currently, most resources for infrastructure are channelled into major projects including hydropower plants (e.g. Rogun on Vaksh River in Tajikistan), national highways (e.g. the alternative North-South road in Kyrgyzstan), etc. These projects serve different purposes, for example electricity generation for exports, international and inter-region connectivity, rather than direct support to technology-oriented producers. Little money is left for other types of in-

frastructure. If technology-led productivity growth, indeed, is going to become a priority, these proportions might need to be changed.

Investments in human capital are another critical input into productivity growth. The above discussion suggests that (i) those countries of Central Asia which already spend massively on education (Kyrgyzstan, Tajikistan, Uzbekistan) need to sustain these spending levels; (ii) other economies in the region (Afghanistan, Kazakhstan) may need to increase their education expenditure; and (iii) all these economies need to significantly improve spending efficiency, i.e. "value for money" in education. Furthermore, because in Central Asia, at this stage, it is worth focussing on knowledge and technological absorption (rather than generation), the governments should prioritize quality secondary and earlier levels of education rather than expanding higher education. Sound universal secondary education is a prerequisite for any labour force to be capable of mastering modern production technologies and know-how. This is something that has yet to be achieved. While all post-socialist economies of Central Asia have near-universal coverage of secondary education, the quality of this education remains unsatisfactory as results of different independent international and national assessments show.

As for tertiary and secondary specialized professional/vocational education, the role of government funding should remain crucial in establishing and maintaining education standards, in supporting public and private centres of excellence (e.g. the best national universities) and providing access to quality higher education to talented young people coming from relatively poor households through scholarships and similar funding programmes. State institutions should be given real autonomy and their income from fees should not be taxed as is currently the case. Moreover, the private (commercial and non-commercial) sector should be encouraged for at least two reasons: (i) the need to divert public resources in favour of secondary education, and (ii) better preparedness of private educational establishments to meet changeable market demand for professional skills reflecting ongoing changes in economic structures and technologies; this demand forces them to be flexible in their offering of educational programmes.

In the quest for more efficiency in education spending, there is a trade-off between (i) an attempt to provide quality education to everybody with available modest resources and (ii) a decision to concentrate resources on a selected group of schools and universities making the selection as meritocratic as possible. While most governments seem to follow the first "egalitarian" approach, the region also provides an interesting example of the second "elitist" approach. Nazarbayev Intellectual Schools (NIS), a network of 20 secondary education establishments in Kazakhstan with 14,400 students (0.45% of the total number of secondary school students in the country)[33] created in 2008, is aimed at providing high-quality education to talented, competitively selected children and adolescents. NIS are funded much better than other secondary schools in Kazakhstan. In 2018, government expenditure per student in NIS was USD4,070 compared to USD725/student[34] in schools funded from the budget of Almaty city (the largest and most prosperous city in the country). It seems that rigorous evaluation of this experience, including an assessment of the education outcomes and the preservation of meritocratic principles vs. the resources spent in comparison to other schools in the country, would be of great value for all societies in Central Asia and beyond.

While growing the skilled labour force is an obvious priority of those governments aspiring to promote technological development, it is also necessary to retain these workers in the domes-

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33   Data for end-2018, source: (NIS, 2019).

34   Sources of data: Committee on Statistics and Ministry of Finance of the Republic of Kazakhstan.

tic economy. One of the major fiscal policy measures capable of supporting this retention is to reduce and eventually get rid of the payroll tax/pension contributions proportional to workers' salaries/wages. As already mentioned, this is one of the most distortive taxes with a very high rate and narrow base, which serves as a penalty on those enterprises that employ skilled and, therefore, well-paid workers. This tax could be replaced by different sources of government revenue without undermining the resource base for universal old-age pension coverage, which is an important social achievement. The replacement scheme should be country-specific, but its main principles would be: (i) the elimination of social contributions relying on the payroll as a tax base and the discontinuation of earmarking pension expenditures to a dedicated revenue source, (ii) an increase in taxes paid by those operating in the informal economy (e.g. property taxes, excises and some other indirect taxes), and (iii) neutrality for total tax payments by the current main payers of these contributions (large corporations especially in mining and financial sectors, public sector enterprises, etc.), i.e. what they would save on the elimination of social contributions should be collected from them in the form of other, less distortive taxes. This shift would imply a change in the interpretation of the pension system from a contributory insurance-type to a non-contributory (redistributive) social protection programme.[35]

The governments may also consider providing some support to producers/providers of technological goods and services, including companies involved in R&D, engineering consulting and agricultural extension services. This support should also be extended to importers of these goods and services, including branches of foreign technological companies. Importantly, access to such privileges needs to be decoupled from the size and legal form of the enterprise, i.e. eligibility should not depend on whether the enterprise is small or not[36] but on the type of activity and its contribution to productivity growth. As tax exemptions and privileges seem to be overused and ineffective and efficient tools of fiscal policy in Central Asia, targeted and transparent budget subsidies could be the recommended form of such support.

5. Conclusions and Policy Implications

The above analysis suggests the following:

- Sustainable development of the economies in Central Asia requires switching from reliance on natural resources to productivity-led growth. The latter seems to be impossible without major fiscal support to the technological development of these economies.

- Government budgets in Central Asia have grown dramatically in the past 15 years. In some cases, the level of government expenditure is too high to ensure the effective and efficient use of public resources.

- These large budgets are partially based on persistent reliance on foreign aid. The efficiency of aid leaves much to be desired, as evidenced by the high foreign government debt despite borrowing on largely concessional terms.

- Tax systems in the region accumulated a significant amount of different types of inefficiencies related to the use of special tax regimes and tax exemptions for selected categories of taxpayers and economic sectors. Payroll taxes/social contributions stand alone as arguably the most distorting tax in Central Asia.

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35   The logic of and justification for this shift are discussed in detail in (Mogilevskii, 2020).

36   As authors of (IMF, 2016) put it, "New, not small, is beautiful."

- Improvement in government expenditure efficiency is a major task to accomplish for all governments in the region. It requires re-focusing government efforts away from the coverage of government services and towards the quality of these services. It would also demand some substantial and sensitive changes to the expenditure structure and principles of government service delivery (e.g. gradual transition to user-financed infrastructure).

In using fiscal policy to promote the productive utilization of modern technologies in their economies, Central Asian governments may be recommended to:

- Maintain macroeconomic stability;

- Concentrate on those types of infrastructure which are critically important for the enterprises relying on the utilization of modern technologies; this implies a shift from major infrastructure projects (HPPs, roads, etc.) to smaller, but immediately useful projects in energy distribution, urban development, ICT, water supply, waste management, etc.;

- Sustain and, in some countries, increase government expenditure on education along with improvements in its efficiency;

- Support the retention of skilled labour by increasing salaries of key education, health and other professionals providing government services, and improving the tax structure and the elimination of any form of payroll taxation;

- Support providers of technological goods and services;

- Pay greater attention to gender and other social implications of some of these reforms and employ appropriate mitigation measures.

6.   Bibliography

Cornell University, INSEAD, and WIPO (2019) The Global Innovation Index 2019: Creating Healthy Lives—The Future of Medical Innovation. Ithaca, Fontainebleau, and Geneva.

Edwards, S. (2014) Economic Development and the Effectiveness of Foreign Aid: a Historical Perspective. NBER Working Paper 20685. National Bureau of Economic Research.

IMF (2016) Fiscal Monitor: Acting Now, Acting Together. April 2016.

IMF (2018) Republic of Kazakhstan. 2018 Article IV Consultation—Press Release and Staff Report. IMF Country Report No. 18/277.

IMF (2019) Republic of Uzbekistan. 2019 Article IV Consultation—Press Release and Staff Report. IMF Country Report No. 19/129.

IMF Government Finance Statistics Database – Archive. https://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405&sId=1544448386071.

IMF. World Economic Outlook Database. https://www.imf.org/external/pubs/ft/weo/2019/02/weodata/index.aspx.

Kornai, J. (1997) Reforming the Welfare State in Postsocialist Societies. World Development, Vol. 25, No. 8, pp. 1183-1186.

La Porta, R. and A.Shleifer (2008) The Unofficial Economy and Economic Development. NBER Working Paper 14520. National Bureau of Economic Research.

Maltseva, E. and S.Janenova (2018) Reversing Pension Privatization in Kazakhstan. ESS Working Paper No. 67, International Labour Organization.

Ministry of Finance of the Kyrgyz Republic. http://www.minfin.kg/ru/.

Ministry of Finance of the Republic of Kazakhstan. http://www.minfin.gov.kz/irj/portal/anonymous.

Ministry of Finance of the Republic of Tajikistan. http://www.minfin.tj/.

Mogilevskii, R. (2020) Labour Market, Labour Migration, Education and Technological Development in Central Asia. University of Central Asia, Institute of Public Policy and Administration Working Paper (forthcoming).

Nazarbayev Intellectual Schools (2019) Annual Report for 2018. Part I. https://www.nis.edu.kz/en/about/reports/?id=8161.

Organisation for Economic Cooperation and Development (2019) Revised DAC Recommendation on Untying ODA. DCD/DAC(2018)33/FINAL.

Schleicher, A. (2019) PISA 2018: Insights and Interpretations. OECD.

World Bank (2007) Fiscal Policy and Economic Growth. Lessons for Eastern Europe and Central Asia/Edited by C.Gray, T.Lane, A.Varoudakis. Washington, DC.

World Bank. Databank. World Development Indicators. https://databank.worldbank.org/source/world-development-indicators.