Diagnostic for the Programme for Country Partnership (PCP)

The Kyrgyz Republic

Building a competitive manufacturing base for strong and inclusive growth

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

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GOVERNMENT

Academy of Sciences of the Kyrgyz Republic;
Department of Fuel resources and heat supply under the SCIESU KR[1];
Department of the Geology under the SCIESU KR;
Department of Industry, Fuel, Energy and Subsoil, Apparatus of Government of the Kyrgyz Republic
Department of the Light Industry under the SCIESU KR;
Department of Management of EAEU and WTO under the SCIESU KR
Department of Mechanical Engineering under the SCIESU KR;
Department of Metallurgy and Construction Materials under the SCIESU KR;
Department of Renewable Energy Sources and Energy Saving under the SCIESU KR;
Division for Financial and Economic Analysis and development Monitoring, presidential Administration of the Kyrgyz Republic
Member of Jogorku Kenesh
Ministry of Agriculture Food Industry and Land Reclamation of the Kyrgyz Republic
Ministry of Economics
Ministry of Finance;
National Statistic Committee;
Research Institute of Energy and Economics under the SCIESU KR;
State Agency for Investment and Export Promotion under the Ministry of Economy of the KR
The State Committee of Industry, Energy and Subsoil Use of the KR

PRIVATE SECTOR

Ardamina (wearing apparel)
Art group Tumar (wearing apparel)
Ayu Holding
Electrosila, production of transformers, distribution of electricity
Golden Nut walnut production (Food processing)
Interglass, glass Production Company
Imran, cleaning and washing wool
Kalininskaya HEPS, hydropower company
LLC “Avinion”
Tekstil Trans (wearing apparel)
Toiboss, production of meat products (Food processing)
Shoro, production of beverages (Food processing)

INDUSTRY ASSOCIATION

Association of Artisans
Association of poultry farmers of the KR
Association of producers, distributors and suppliers of agricultural products
Free Economic Zone
Kyrgyz Union of Industrialists and Entrepreneurs
Legprom Association
Stone Processing Association

[1] The State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic

Trade and Commerce chamber of the Kyrgyz Republic

DEVELOPMENT PARTNERS

Adviser to the Rector of the Kyrgyz Technical University
Asian Development Bank (ADB)
FAO
GIZ
IFC Country Officer
Professor from Kyrgyz-Russian Slavic University
Russian-Kyrgyz Fund Development
UNDP
USAID BGI
WFP
World Bank in the Kyrgyz Republic

NGOs

Institute of Hydropower
Organization “Environmental Expertise”

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Executive summary

The Kyrgyz Republic has experienced equitable growth for the last 10 years, being one of the most equal countries in the group of lower-middle income countries. After a massive and prolonged recession since independence, the country finally regained its 1991 GDP level in 2011 and has been following a path of a steady growth, recently moving from a low to lower middle income group. However, the equitable growth in Kyrgyzstan has not meant moving towards a creation of a large middle class with a secure income source and a living standard sufficient to cover a family's living costs, education and social securities for better future. The equitable growth of the country is rather closer to a situation where the majority of the people eke out a living by taking up a lowly productive, often informal job or going abroad to find a job to support a family in the home country. Thus, the society is equitable but still at a relatively low level of living standard.

The national poverty rate is at around 30%. The population living on less than USD 3.10 per day had declined significantly from 75% in 2000 to 19% in 2009, but further progress towards the elimination of poverty seems daunting for the country. An estimated 70% of the work-force is active in the informal economy, contributing an estimated 28% of total value added, making the country's economy and citizens insecure and vulnerable. The unemployment rate is high among young people with a markedly higher rate for women. The large inflow of remittances, which accounts for 25% of GDP, reflects that past growth has not been successful for the generation of decent jobs.

Strong and inclusive growth has to be the foremost priority for Kyrgyzstan. The manufacturing sector usually makes a significant contribution to such growth, particularly at the development stage of Kyrgyzstan. This growth engine for inclusive development, however, has not so far been working in the country with a dominant share of gold production in manufacturing value added and the rest of the manufacturing sector contributing to 7-10% of GDP. Resource-based industries, such as mining and petroleum refining, create a limited number of jobs for a given output and are prone to increase the burden on the natural environment.

Being a small open economy, Kyrgyzstan's current position in the international economy points out quite clearly that the country's advantages are now in the industries based on the country's given natural resources - lands for the agro-industry, water for hydropower, and gold for metal production – but it enjoys little advantage in other manufacturing industries, whose success depends more on competitiveness created by the country. A lack of competitiveness in sectors other than resource-based manufacturing industries almost across the board indicates the importance of improving the country's framework conditions in order to uplift the overall profitability, chance of success and expansion, and attractiveness to investment of the country. A lack of transparency and inefficiency in public administration is costing businesses and their international competitiveness. The government's initiative, Taza Koom programme, for a digital transformation is a step forward to provide a platform to improve the efficiency, transparency and accountability of public administration and to reduce the transactions costs of the private sector through digitalization.

Joining the Eurasian Economic Union (EAEU) in 2015 improved access to the EAEU market and can facilitate export-led growth in future, which has a central role to play in revitalizing the country's manufacturing sector for strong and inclusive growth. To reap the benefit of regional market integration and promote trade and production networks with EAEU member countries, Kyrgyzstan has to urgently develop the capacity to comply with the more advanced technical and sanitary and phytosanitary standards of the EAEU. The country has to step up the efforts for compliance with continued support from EAEU countries to facilitate greater access to an enlarged regional market. The labour and energy costs of Kyrgyzstan are competitive relative to those of countries in a similar income group, but the country has major logistical problems for trade, taking much more time and money to move goods across boarders than others including landlocked countries, such as Moldova and Laos. The quality of Kyrgyzstan's road infrastructure is in especially poor condition and in need of urgent rehabilitation and reconstruction because more than 90 percent of freight transport is by road. Being a small country with limited domestic demand, trade infrastructure is of critical importance for the country to succeed in exports and participation in global value chains. For land-based connectivity, of particular importance is China's One Belt One Road (OBOR) initiative. Kyrgyzstan, being among the countries along the route, the OBOR initiative can be instrumental for bringing much needed investments in infrastructure.

Improved framework conditions will lay the foundation for building a competitive manufacturing base. For strong and inclusive growth, the development of the food and beverages and light industries like textiles and wearing apparel should take precedence. Kyrgyzstan's inexpensive, trainable labour and low energy costs are the advantages for the growth of such industries. Their labour-intensive production processes and strong linkages with other industries, agriculture in particular, could generate a large number of formal jobs in the country. For example, by reaching only the average output level of the same income group, it is estimated that the Kyrgyz textiles and wearing apparel industries could increase formal employment to 7.5 times of the current level. This enormous inclusive growth potential has not been realized due to obstacles at firm level as well as to the mentioned framework conditions.

Most of the firms in the food and beverages, textiles, and wearing apparel industries are small and fragmented often operating in the informal sector. With the limited scale of production, firms are unable to use an optimal production process and machinery to reach a productivity level required to compete internationally. While the Kyrgyz firms have low labour and energy costs, their low productivity wipes out their input costs advantage and makes their products less competitive. Larger firms with formal employment have higher consistency in product quality, enjoy economies of scale and higher productivity and can respond to large orders from customers. These are some of the important firm characteristics necessary to compete in international markets. Easy access to finance at a reasonable interest rate often makes the difference in a decision on whether or not to invest and expand production to be formal or remain informal and to pay a limited contribution to the government budget. Despite the government efforts, this problem of access to finance especially by small and medium firms is severe in Kyrgyzstan relative to the other countries in the same income group.

There is a limitation in the availability of domestic capital. A dedicated outreach strategy for foreign direct investments is an essential part of driving exports growth. Domestic firms learn from experienced foreign firms what would be necessary to succeed in terms of quality, costs, logistics management, and marketing.

Strong and inclusive growth with focus on labour-intensive industries is one of the pillars of the Kyrgyz Republic's "40 steps to New Era". Transparent and consistent policies will push the country towards the achievements of the country's long-term objectives and the Sustainable Development Goals.

1. Identification of Kyrgyzstan's current position, prospects and key issues

1.1. Introduction

The ultimate objective of any industrial development strategy is to raise the living standards of all strata of society. At the core of such a strategy is the creation of new and the expansion of existing economic opportunities in the manufacturing sector which has proven to coincide with successful development processes (Kaldor, 1967; Rodrik, 2013; Szirmai and Verspagen, 2015; Haraguchi, 2016b). Several features of the manufacturing sector ensure that the sector has maintained its function as an engine of growth (Haraguchi et al., 2017) even in times where numerous countries are struggling with 'premature deindustrialisation' (Rodrik, 2016). These features include the fact that innovations and technological progress predominantly emanate from manufacturing activities. This is equally applicable to developing countries such as the Kyrgyz Republic, as technological progress can also take the form of imitation and adaptation of existing technologies. Imitation is easier in the realm of manufacturing where part of the relevant knowledge is codifiable or embodied in machinery. As a consequence, manufacturing industries facilitate convergence across countries (Rodrik, 2013). Since innovation and imitation feed into productivity growth, the manufacturing sector in countries that have embarked on a sustained development trajectory is typically more productive than the rest of the economy. An additional aspect is that, in principle, the manufacturing sector is capable of providing a large number of well-paid jobs (Rodrik, 2012; UNIDO, 2015) in developing countries that feature a dual economy, characterised by large productivity gaps between the agricultural and informal sectors, on the one hand, and industry and modern services, on the other. The substantial remnants of a dual economy structure are one of the key issues to be tackled in Kyrgyzstan's development strategy.

The creation of employment opportunities in the formal economy is a prerequisite for an inclusive industrial development. In this context, another characteristic of manufacturing may play out favourably: strong backward and forward linkages of many manufacturing industries bring about spillovers to other parts of the economy such as business-related services. Existing evidence suggests that the inter-linkages between manufacturing and services have increased (Nordås and Kim, 2013). This strengthening of the manufacturing-services nexus entails new opportunities for developing countries because such linkages exist in low-tech, medium-tech and high-tech industries alike and are not limited to high-tech industries. Therefore a dynamic manufacturing sector generates jobs directly and indirectly in various inter-connected parts of the economy. As a consequence, more people can participate in the growth process and benefit from rising productivity and wages (UNIDO, 2015). While a necessary condition, bringing more people into formal employment is not a sufficient condition for inclusive development. This is because inclusiveness also implies that all parts of society have the same access to such jobs, irrespective of gender, religion and ethnic affiliation. Moreover, social inclusiveness in manufacturing can only be achieved when choices of technologies are aligned to a country's resource and skill endowment (UNIDO, 2015) and it must be embedded in the wider social fabric (Polanyi, 1957).

For Kyrgyzstan, which has only recently become a lower-middle-income country (LMIC) according to the World Bank's country classification by income groups, sustainable development also necessitates poverty reduction to the extent that the remaining incidences of extreme poverty are de facto eliminated.

An additional requirement of a successful development process is that high growth is sustained over a long period. A sustained catching-up trajectory was estimated to require average GDP growth rates of 5% per year or more for at least two decades (UNIDO, 2015) with a volatility of growth as low as possible (Pritchett, 2000). The latter is a major challenge for developing countries due to their dependence on commodities and resource-based manufactures which are subject to pronounced price fluctuations on the world markets. The concentration of exports in a few products poses a further threat to a sustained growth process.

A step-up in economic activity needs to be accompanied by a shift towards more efficient, environmentally friendly and less resource-intensive production technologies in order to prevent emissions from rising and a degradation of the natural environment. Moreover, an accelerated depletion of key resources due to inefficiencies risks undermining an inclusive and sustainable growth process as does the destruction and pollution of the natural habitat. For this reason UNIDO promotes the concept of inclusive and sustainable industrial development (ISID) which is part of the United Nation's Sustainable Development Goal (SDG) 9[2] (UNIDO, 2015).

The remainder of this chapter reviews key economic and social developments in Kyrgyzstan as well as the challenges ahead which need to be mastered and the opportunities to be taken advantage of in order to ignite an industrial take-off and to embark on an inclusive and sustainable growth path.

1.2. Historical, Social and Macroeconomic Background

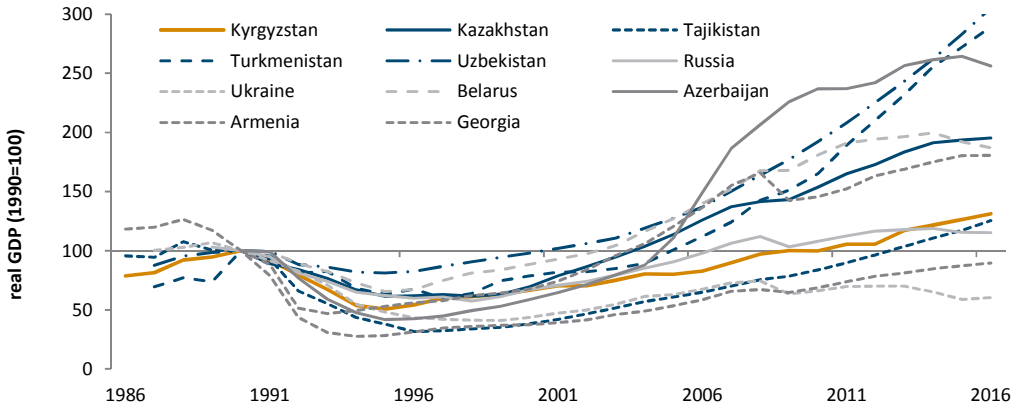
1.2.1. The transition recession and Soviet legacies

The consequences of the transition recession and Soviet nostalgia are still felt today. Kyrgyzstan is a landlocked, mountainous country located in the eastern part of Central Asia. With a population of 6.1 million, it is a small economy with a limited resource base and highly dependent on energy imports. After the collapse of the Soviet Union and its independence in 1991, the Kyrgyz economy experienced a massive recession that was due to a plethora of factors ranging from the immediate liberalisation of the economy under the auspices of the World Bank and IMF to the loss of fiscal transfers from the Soviet Union, estimated at 10% of Kyrgyz GDP during the late 1980s (Williamson, 1993), and the breakdown of Soviet payment mechanisms. Another key factor was the disruption of trade flows between individual republics which had previously guaranteed demand for output. The extent of the economic slump was aggravated by the fact that the allocation of industries to Kyrgyzstan in the Soviet system did not necessarily coincide

[2] SDG 9 is dedicated to building resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

with the country's comparative advantages. By 1995, GDP had declined by 50% compared to the 1990 level (Figure 1-1).

Figure 1-1: Transition recessions and recovery in former Soviet Union states, 1986-2016

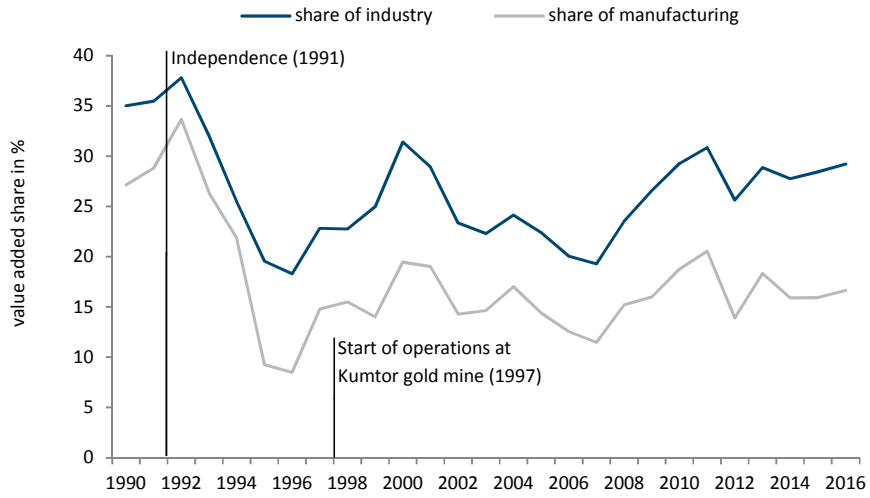


Source: World Development Indicators (WDI), wiiw calculations.

The transition recession meant an almost complete erosion of Kyrgyzstan's industrial base (ADB, 2013a). Importantly, in contrast to neighbouring Kazakhstan and Uzbekistan, Kyrgyzstan lacked own energy resources (except for rivers and the associated hydro power potential), making it more difficult to attract foreign investment in the industrial sector. The country's land-lockedness also hampered the reorientation of exports to new markets. Kyrgyzstan's accession to the WTO in 1998 did not really help to remedy this problem. For these reasons, it was only in 2011 that the country reached its 1990 level of income – later than most other former Soviet republics. While a long time ago, the experience of the transition period is important as there seems to be wide-spread Soviet nostalgia, including amongst the ruling elite, which perceives Kyrgyzstan to have been an industrial powerhouse in Soviet times.

Manufacturing was one of the sectors hit hardest by the economic turmoil, with its share in GDP reduced to only 9% compared to one third at the beginning of the decade (Figure 1-2). The decline of manufacturing activity was brought to an end in 1997 with the beginning of the commercial exploitation of the Kumtor gold mine, operated by a Canadian mining company. In addition to the actual mining activities, this also established an important downstream activity in Kyrgyzstan, the smelting of the gold ore, which allows the country to export fine gold, mainly to Switzerland. While gold mining gave a huge impetus to aggregate manufacturing production, it obviously did not help resolve the problems of the traditional industries, such as textiles, which suffered from an outflow of skills, ageing equipment and above all the lack of management and marketing skills on the side of firms.

Figure 1-2: Development of Kyrgyz industry and manufacturing, 1990-2016



Note: Values are in per cent of GDP.
Source: World Development Indicators (WDI).

Lack of employment opportunities as the breeding ground for massive outward migration and a rampant informal economy. The outward migration of the generally highly-skilled non-Kyrgyz ethnic minorities after independence was substantial: between 1991 and 2000, about 620 thousand people left the country, including 378 thousand ethnic Russians (ADB, 2014a). This outflow of talent in combination with incomplete reforms of the legal and regulatory framework, including economic reforms that prevented an inflow of foreign direct investment and domestic business development, caused a lack of employment opportunities and led to the formation of a huge informal sector in the economy that is still prevalent today.

Installation of democratic structures, early market reforms did not result in a growth dividend. In political terms, Kyrgyzstan with its mixed presidential-parliamentary system is arguably the most democratic country in Central Asia, with a substantial degree of pluralism in politics (reflecting not least competition between various ethnic clans). During the 1990s, Kyrgyzstan was a front-runner in Central Asia in terms of market reforms which included price and foreign trade liberalisation, privatisation, and de-regulation. This reform process needs to be completed, including filling in the gaps in the regulatory framework.

Political remain but with signs of easing. The country featured repeated political turmoil in the past. More recently, the political situation has been more stable. The presidential elections that took place in October 2017 can be considered as a reassuring sign as the election process was running relatively smooth. The change of presidency was effected without outbreaks of violence for the first time in the history of the country.

External vulnerabilities are structural and bound to remain. The country maintained a rather open trade and investment policy. It was the first of the former Soviet republics to join the WTO in 1998. This liberal stance on trade policy, in addition to its small economic size, results in a very high openness ratio, even though with highly asymmetric contributions of exports and imports, which in turn translate into a chronic and large trade deficit. So far, Kyrgyzstan has been able to finance of the trade deficit thanks to the inflow of remittances, which account for approximately 25% of GDP, as well as official development assistance (about 7-11% of GDP) and to a growing extent also foreign direct investment inflows (averaging 7.6% of GDP over the past 10 years).

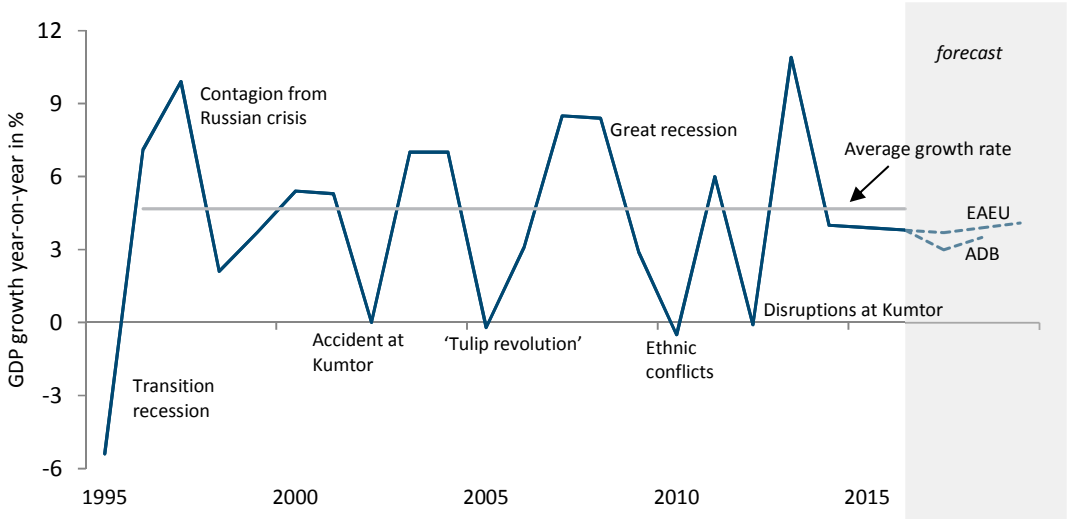
Environmental issues largely unresolved. Another legacy from the Soviet era is the environmental threats posed by hazardous waste deposits from closed-down mining and metallurgic facilities. Among the most pressing issues in this respect are the tailing dumps of radioactive waste. While various international organisations provide assistance in the form of environmental clean-up programmes, the waste storage problems remain largely unsolved.

1.2.2. Satisfactory but unsteady growth

An economy overly dependent on gold exports. After the transition recession, economic recovery finally set in 1996 with the support of the export opportunities provided by the operations at the Kumtor gold mine (ADB, 2014a). Kumtor is the fifth largest open pit gold mine in the world and constitutes the backbone of the Kyrgyz industrial sector. Gold mining and smelting account for approximately 7-10% of Kyrgyzstan's GDP depending on annual mine output. With exports in the order of 16-17 tons annually, gold is also by far the most important export item contributing on average 45% to the country's total goods exports.

While gold mining and the associated foreign direct investments provided a considerable boost to the country's industrial output, the strong reliance on just one commodity also increased the volatility of the economy. Incidences such as the environmental accident in 2002 or the disruption of operations due to strikes and protests from the local communities living in the neighbourhood of the mine (Figure 1-3) add to the volatility in revenues from gold production, linked to geological and technical factors on the hand and international prices fluctuations on the other hand. In the past, the economic development in Kyrgyzstan was also repeatedly shocked by political turbulences such as in 2005 or 2010.

Figure 1-3: Kyrgyz GDP growth, 1995-2016



Source: CISSTAT database, Asian Development Outlook 2017, EDB Macroreview 2017.

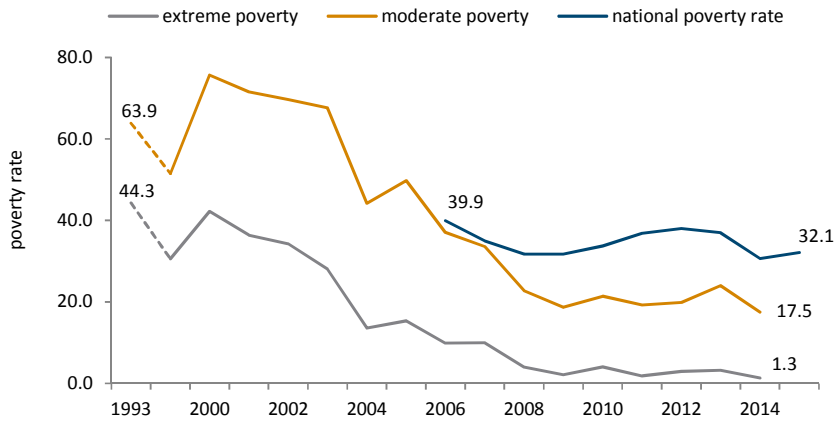
Despite the unsteady development, the average growth rate was reasonably high at 4.6% over the past two decades (1996-2016). The aggregate growth performance is, despite all the structural and institutional weaknesses of the economy, an indication of the country's great economic potential and made Kyrgyzstan graduate to the group of lower-middle-income countries in 2014, surpassing the threshold of a GNI of USD 1,045.

Still, given the severity of the transition recession and the lack of oil and gas resources, Kyrgyzstan remains the second poorest in the Central Asian region after Tajikistan.

Growth helped to reduce poverty but parts of society remain economically vulnerable. Economic growth was not only reasonably high, but also socially-inclusive, benefiting those at the bottom of the income ladder most. Poverty has declined markedly; for instance, absolute poverty measured at national poverty line fell from 66% of the population in 2005 to 32% in 2016 (Figure 1-4). The decline in extreme poverty using the international poverty line (i.e. the share of population living on less than USD 1.90 a day at 2011 PPP) was even more impressive: from 15.4% of population in 2005 to just 1.3% by 2016. In this respect Kyrgyzstan has doubtlessly achieved considerable progress. However, moderate poverty (the share of population living on less than USD 3.10 per day at 2011 PPP) remains widespread at 17.5%, a rate that among former Soviet republics is higher only in Georgia and Tajikistan (World Bank, 2016). Hence a considerable share of the population, while not suffering from poverty, remain vulnerable and the return of more widespread incidences of poverty cannot be ruled out in case of negative economic shocks. In this context it should be mentioned that the standard of living may be somewhat higher in the country than suggested by economic indicators such as GDP per capita at purchasing power

parity, which currently stands at USD 3,600. This is owed to the importance of informal activities which – while imputed into official statistics – are likely to be underestimated. Still, a primary objective of an Inclusive and Sustainable Industrial Development (ISID) strategy for Kyrgyzstan must therefore be the eradication of remaining incidences of poverty.

Figure 1-4: Poverty reduction in Kyrgyzstan, 1993-2015



Note: Extreme and moderate poverty according to World Bank thresholds.
Source: World Development Indicators (WDI).

Improvements were also recorded in the realm of inequality. Between 2005 and 2015, the Gini coefficient of consumption – which is one of the most appropriate measures for the dispersion of living standards in a society – decreased from 0.29 to 0.23, especially thanks to improvements in rural areas. This suggests that Kyrgyzstan is one of the most equal countries in the group of lower-middle-income countries and also fares well in a global comparison. The trends in the living standards mirrored the relative re-distribution of incomes towards the poor segments of the population: the average annual growth of consumption by the poorest 40% of the population in 2005-2015 (5.1%) was much faster than of the population as a whole (3.4%) (World Bank, 2016). The Gini coefficient of income inequality initially improved, too, but after the crisis of 2009-2010 it started rising again and reached 0.42 by 2012 (ADBa, 2014).

1.2.3. A labour market in the shadows

A rampant informal economy erodes the tax base. An estimated 70% of the active workforce is active in the informal economy[3], accounting for an estimated 28% of total value added[4]. However,

[3] National documents typically refer to the informal sector as the 'non-observed' economy. The non-observed economy comprises the hidden economy and the informal economy. The former represents activities by registered companies which are not properly reported (e.g. for reasons of tax avoidance) whereas the informal economy represents activities that are non-registered altogether (e.g. small-scale street vendors). See: National Accounts of the Kyrgyz Republic 2010-2014, Annual publication (in Russian). National Statistical Committee of the Kyrgyz Republic, 2015, pp. 242-243.

alternative estimates put the contribution of the informal economy to more than 50% of GDP (e.g. UNDP, 2006). The ubiquity of the informal sector is key feature of the Kyrgyz economy and one of the main obstacles to a more dynamic productivity development (see also IMF, 2016a). The transition of only half of the informal sector activities to the formal sector is estimated to increase the country's GDP growth by up to one quarter (Bozieva, 2016). The informal economy also has critical implication for the state finances as the informal economy erodes the tax base. A good illustration of the severity of the issue is the comparison of income tax paid by Kyrgyz residents and foreign nationals residing in Kyrgyzstan: foreigners in Kyrgyzstan account for about 1% of the workforce but their share in the total income tax paid amounts to 27% (SIAR Research and Consulting, 2016). While expatriates, including employees of international organisations, earn much higher wages than the average Kyrgyz employee, the exorbitant contribution of non-residents to the income tax bill illustrates primarily the fiscal problem posed by informality. This issue needs to be tackled by the authorities soon.

Informality holds back productivity but eases unemployment. Amidst all the problems it causes, the prevalence of informal employment helped keeping the unemployment rate in official statistics relatively stable at around 8-9%[5]. However, these figures mask a huge amount of underemployment in the informal economy, especially though not exclusively in the agricultural sector and trade services. Apart from informality, discrimination of women in the labour market, which is partly rooted in the clear roles assigned to men and women in society, remains a serious issue. While the ratio of average salaries between men and women is relatively moderate at 1.3 (which still does not make it acceptable), huge discrepancies persist in employment rates, which are much higher for men throughout all age categories. For example, in the age category ranging from 25-29, the gap in the employment rate between men and women amounts to more than 35 percentage points[6] and starts to decline only slowly after the age of 40[7]. Also, with 9% (2015), the female unemployment rate is markedly higher than that of men (6.5%).

Inequalities in economic opportunities in the labour market remain due to the asymmetric access to important functions and top management positions in an environment where personal relationships and networks are often given priority over merit. The underrepresentation of women in top political and management positions reflects this reality.

Young people hurt most by insufficient employment opportunities in the formal economy. One of the main explanations for the mushrooming informal activities is the rigid of the Kyrgyz labour market. Most affected by the insufficient supply of employment opportunities in the formal segment of the private sector is Kyrgyzstan's youth. Youth unemployment[8] remains elevated at 15%, about twice the rate for the total labour force. Among the young, it is harder for females to

[4] Data according to the National Statistical Committee of the Kyrgyz Republic (from the publication: Employment and unemployment. Results of the integrated sample survey of households budgets and labour force in 2014).
[5] In 2015 the unemployment rate was down to 7.5% according to national estimates.
[6] The employment rate for male is 86.4% compared to 50.7% for females.
[7] Data according to *Russian Entrepreneurship*, Number 1, 2016.
[8] Youth unemployment here refers to unemployed persons aged 20-24 years according to national estimates. ILO estimates are very similar though.

find employment resulting in an even higher unemployment rate (19% as of 2015). The most vulnerable parts of the youth are young women aged between 15 and 24, which are typically those who do not have any or have little work experience. Hence, while the country's young population constitutes a potential asset, the lack of formal jobs and the prospect of higher wages in neighbouring Kazakhstan and above all Russia prevent Kyrgyzstan from collecting a demographic dividend.

1.2.4. Critical environmental risks prevail

The current environmental dangers concern both air, land and water resources. As a country that has predominantly a semi-arid climate, the consequences of climate change are strongly felt. The extent of glacial retreat is expected to reach 30-40% by 2025 which has a direct impact on the water content of rivers which as a consequence is equally bound to decrease by a quarter or more (SIAR, 2013). This poses a challenge for sustainability but it also threatens the country's industrial potential whose energy generation is largely dependent on hydro power. This is just one example that shows how closely sustained and sustainable development are intertwined.

Pollution and inefficient use of a key strategic resource due to inadequate facilities. Water resources (including rivers and lakes) are threatened by chemical and organic pollution, that stem mainly but not exclusively from numerous (untreated) dumps and waste tailings from mining enterprises. Additional pollution reaches the water systems through sewages as only 56% of cities and urban settlements dispose of centralised sewage systems with adequate facilities. And even where treatment facilities exist, these often do not meet basic sanitary standards. Therefore concerns about drinking water are well founded and further aggravated by the fact that more than 90% of drinking water is used in agriculture – mainly for irrigation. This high share of water out-take on the account of the agricultural sector is due to inefficient use of water resources resulting from outdated irrigation technologies and a lack of water saving technologies.

Degradation of farm land puts the livelihood of the poorest population at risk. A major environmental challenge that directly affects the economic prospects of more than 1.5 million people still employed in rural areas[9] is the degradation of agricultural land, reflected in soil erosion, salinisation, loss of humus and contamination due to the use of fertilisers. As of 2011, more than half of the agricultural land, including arable land and pastures, was subject to degradation (Ubaidulaev, 2015). Soil degradation and other environmental pollution, including the unsettled issues related to industrial waste deposits, undermines the sustainability of the development process. Moreover, with the poorest parts of the population being most exposed to the negative consequences of environmental degradation, the environmental problems also counteract the efforts made in the fight against inequality.

Emissions and consumption of resources are growing fast. Focusing on the manufacturing sector, a broad international comparison reveals that the growth of both pollution (measured by the

[9] The general implications of environmental damages of course go far beyond direct economic consequences.

amount of CO2 emissions[10]) and the consumption of resources (measured by material use[11]) were relatively high in Kyrgyzstan. In fact, the growth of CO2 emissions increased by some 140% over the period 1995-2013, exceeding even the growth in upper middle income countries, the country group which the highest increases among the broadly defined country groups (Figure 1-5). The picture emerges for the growth of material use (

Figure 1-6).

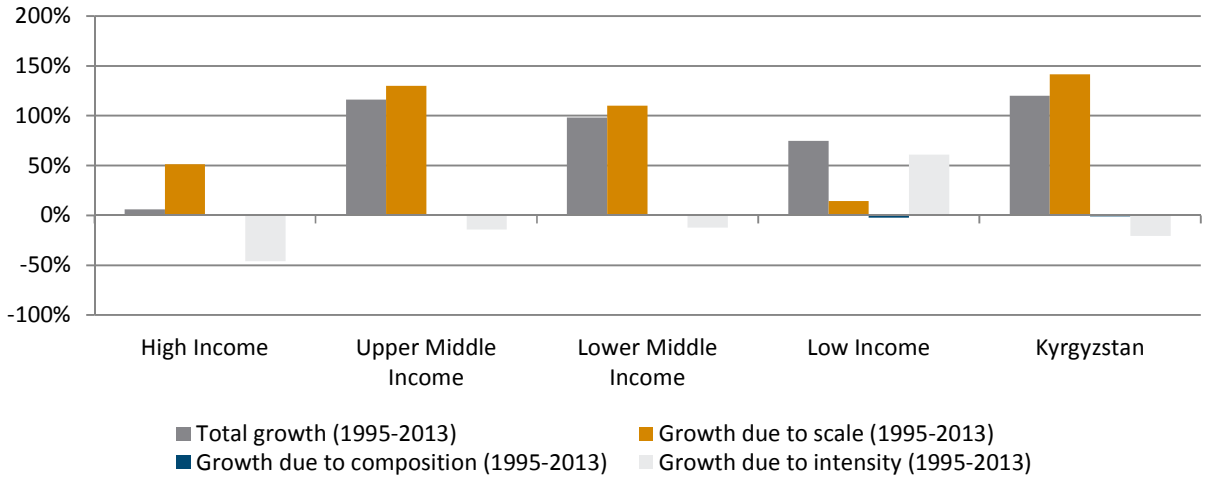
Mitigation of environmental impacts exist but to a limited degree. The total growth of CO2-emissions and material use can be decomposed into a growth effect, simply due to the expansion of manufacturing production, a composition effect and an intensity effect. The composition effect captures changes in the production structure within manufacturing as individual industries differ with regards to their pollution and material use intensity. Finally, the intensity effect is the intensity of CO2 emissions and material use within individual industries[12]. This latter effect appears to be negligible. The intensity effect is important because it actually has the potential to counter the growth of emissions and the consumption of resources through the switch to more efficient and less-polluting production technologies. Indeed, the growth of CO2 emissions and material use resulting from the expansion of production was somewhat reduced by the intensity effect in Kyrgyzstan. In fact, the mitigating impact of the intensity effect was relatively larger than in lower-middle income countries in general.

Overall, however, the trends in both CO2 emissions per capita and material use per capita are worrisome because clearly positive and in the case of the latter strongly positive (Panel (a) in Figure 1-7 and

Figure 1-8). An important fact, that is to be taken into account though, when looking at the environmental data, is that the level of pollution and consumption of resources started at a quite low level. In the case of CO2, the level of emissions per capita is still clearly below that of lower middle income countries – partly reflected the fact that Kyrgyzstan is positioned at the lower bound of the income brackets of this country group

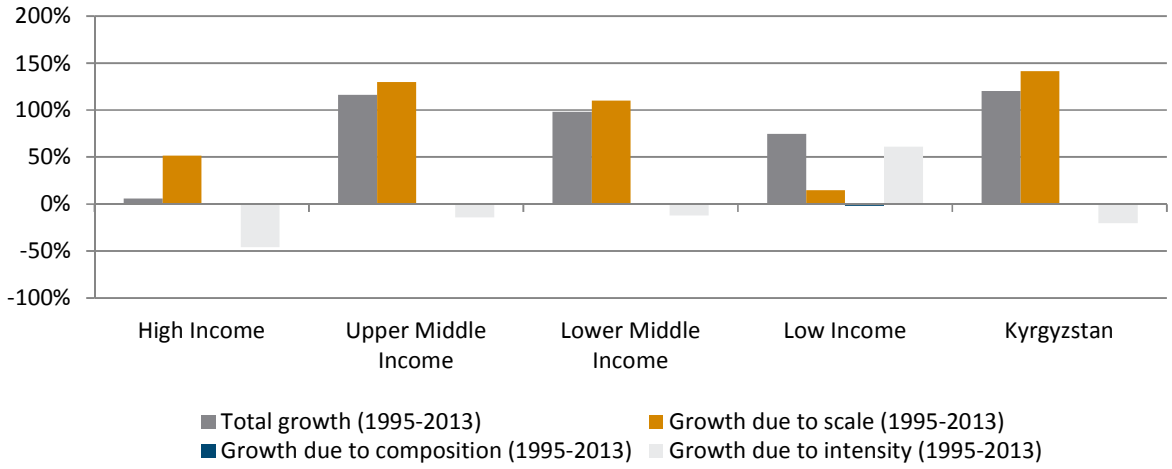
[10] CO2 emissions include both emissions due to the production of manufacturing goods and the emissions due to electricity use of the sector.
[11] Material use is intended to reflect the use of materials as intermediate inputs and includes minerals (ores), biomass and construction materials but not fossil fuel.
[12] The decomposition relies on input-output data from the EORA database (see Lenzen et al., 2012).

Figure 1-5: Decomposition of CO2 emissions (international comparison), 1995-2013



Source: EORA database.

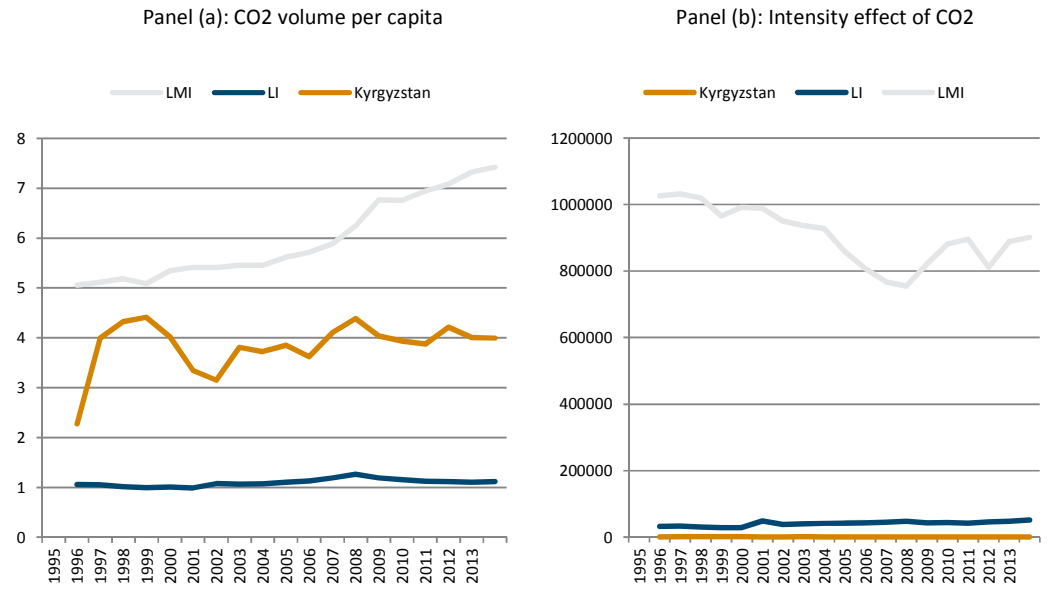
Figure 1-6: Decomposition of material use (international comparison), 1995-2013



Source: EORA database.

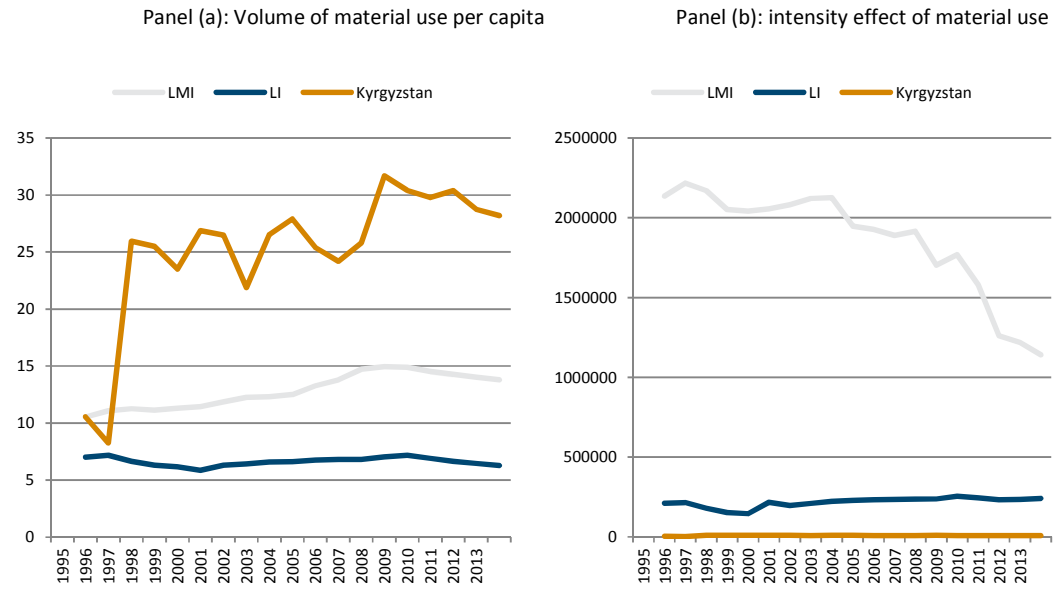
Still, the fact that the intensity effect – which reflects the introduction of less-polluting production techniques – shows much less of a downward trend than in other lower-middle income countries.

Figure 1-7: CO2 volume per capita and intensity effect of CO2



Note: LMI= lower-middle income countries; LI= lower income countries
Source: EORA database.

Figure 1-8: Volume of material use per capita and intensity effect of material use



Note: LMI= lower-middle income countries; LI= lower income countries
Source: EORA database.

More efficient production techniques are needed for a sustainable industrial development. The situation regarding material use is somewhat different as Kyrgyzstan has clearly outpaced other lower-middle income countries. The developments regarding material use in manufacturing points to rather inefficient and wasteful production techniques, calling for close monitoring and improvements of the existing situation. As in the case of CO2-emissions, the mitigation from using more resource-efficient modes of production is hardly gaining momentum over time. Clearly, the mitigation measures both with regards to CO2 emissions and material use have to be scaled-up by introducing modern and environmentally-friendly capital equipment if the country is to embark on a manufacturing-driven development path. Otherwise, the acceleration of manufacturing output will lead to serious environmental damage, as pollution levels and consumption of resources were already rising strongly, despite a rather sluggish manufacturing sector development.

1.3. Implications of the Macroeconomic Policy Framework for Industrial Development

A standard policy-mix applied with great discretion. The macroeconomic policy framework of the Kyrgyz Republic is of high importance for its industrial transformation and export competitiveness. The country follows a largely standard liberal approach in line with the recommendations of the IMF: an inflation rate targeting regime with flexible exchange rate arrangement in combination with fiscal consolidation[13]. However, the policy mix is generally applied with great discretion in order to insulate against external shocks. Meeting the formal inflation and fiscal targets may not suffice for achieving macroeconomic stability objectives in light of high external and internal vulnerabilities. This needs to be highlighted as excessive preoccupation with macroeconomic objectives could also be detrimental for sustained industrialisation and external competitiveness. Meeting the twin objective of macroeconomic stability and maintaining favourable conditions for industrialisation and external competitiveness poses a formidable challenge for which the current policy macroeconomic framework may not be optimal.

1.3.1. Monetary policy

Exposure to external shocks poses a challenge for the inflation targeting regime. The National Bank of the Kyrgyz Republic (NBKR) has committed to an inflation targeting regime in combination with a floating exchange rate arrangement permitting occasional interventions to smooth excessive volatility of the som exchange rate (rather than attempting to influence the equilibrium trend dynamics determined by macroeconomic fundamentals). As of September 2017, the policy rate is kept at 5.0% to meet the inflation target range of 5-7% in the medium term. The gradual lowering of the policy rate during 2016 from levels above 10% reflects the abating inflationary[14] and exchange rate pressures.

[13] In the future also constraints imposed by the EAEU framework may play an increasing role.
[14] Inflation was in negative territory in the year 2016.

While a rather standard prescription for small open economies, a number of issues specific to Kyrgyzstan are worth emphasising. Firstly, an inflation targeting regime requires credibility of the national bank's commitment to the target (including related public communication) and an effective monetary transmission channel. Both still represent a major challenge for Kyrgyzstan which has a generally very weak financial system (being also largely a cash-based economy) and struggles with a lack of trust in the Kyrgyz som, as evidenced by the country's high degree of high dollarisation. Secondly, inflation in Kyrgyzstan de facto is heavily influenced by non-monetary factors, such as commodity and food price fluctuations and relatively high exchange rate pass-through. At the same time, real macroeconomic dynamics are significantly shaped by volatility of output on account of Kumtor gold production, global commodity prices and remittances.[15] Therefore, establishing an inflation target as a credible anchor could be an uphill battle in the medium run for the NBKR and overreliance on this framework as a sole instrument of monetary policy may not be pragmatic absent 'divine coincidence'[16] (Blanchard and Gali, 2007). Hence, given the country's substantial exposure to external shocks the question arises whether inflation targeting is the optimal monetary policy for the country (see Frankel, 2012).

Monetary policy incapable of ensuring a competitive exchange rate. The floating exchange rate system, by absorbing external shocks, has served the country well. At the same time, 'fear of floating'[17] is certainly a major concern for the country given the persistent perception in the population that there is a risk of the Kyrgyz som to collapse. Moreover, the particularly high levels of deposit and loan dollarisation[18] are an incentive for policy-makers to partially sterilise market-induced exchange rate fluctuations. Also with regards to the exchange rate policy, the overreliance on remittances and gold exports put the country in an especially difficult and vulnerable position, including the possibility of 'Dutch disease'-like effects[19]. This is crucial as exchange rate movements affect directly the competiveness of the tradable sectors.[20] The currently established combination of inflation rate targeting and floating exchange rate arrangement of Kyrgyzstan may lead to trade-offs between price stability objectives and industrial competitiveness gains. For instance, accelerating inflation warrants a contractionary monetary policy by hiking the policy rate, which may lead to detrimental effects for the manufacturing sector via two channels. First, interest rate hikes will further constrains availability of funding to the private sector, aggravating the persistent problem of lacking access to finance in Kyrgyzstan stemming from insufficient collateral, poor business acumen and other issues. Second, increasing interest rates may lead to exchange rate appreciation thereby negatively affecting external competitiveness of the tradable sector.

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[15] For instance, low inflation falling to a negative zone in 2016 was largely the result of declining domestic food prices.

[16] The idea that controlling inflation is equivalent to controlling the output gap and, in general, achieving multiple macroeconomic stability objectives simultaneously.

[17] See also G.A. Calvo and C.M. Reinhart (2002).

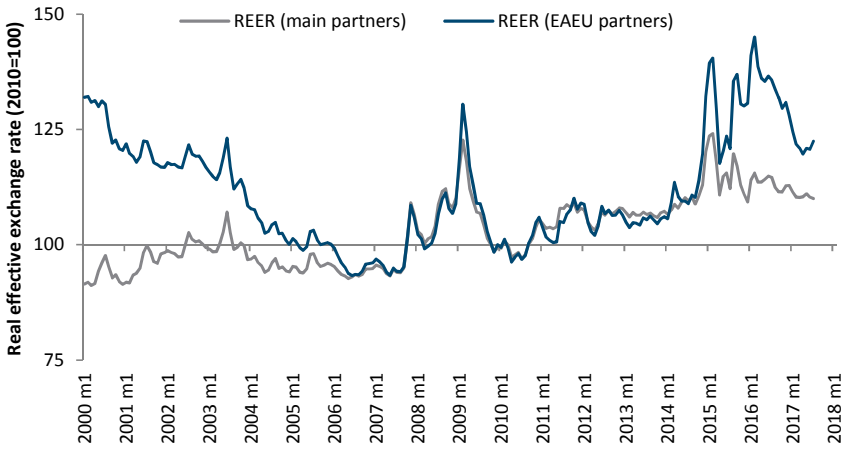
[18] Deposit and loan dollarisation levels exceed, respectively, 50% and 40%, as of April 2017.

[19] The impact of remittances is at least partially offset by a large share of disposable income spent on imported goods.

[20] In this respect, appreciation of the nominal exchange rate of the som against major global currencies in 2016 has offset competitiveness gains due to the som weakening earlier. Real exchange rate dynamics are particularly important for Kyrgyz manufacturing and agriculture sectors, whereas elasticity of commodity exports with respect to real exchange dynamics is generally low.

Even more important for industrial development than fluctuations in the exchange rate, are unfavourable real exchange rate *trend* dynamics ('chronic overvaluation'). In this respect, it is worth noting that the country was facing an overvalued exchange rate for the most part of the post-crisis period, with a peak in the real exchange rate at the end of 2014 (Figure 1-9).

Figure 1-9: Real effective exchange rate development, 2000-2017



Note: An increase (decrease) in the real exchange rate index indicates a real appreciation (depreciation).
Source: National Bank of the Kyrgyz Republic.

This conclusion is not primarily drawn from the fact that the real exchange rate index was permanently above its 2010-level, a year in which the economic development was affected by the political turbulences, but by the chronic current account deficit and the assessment by the IMF in its recurring reviews of Kyrgyzstan (IMF, 2016b; 2017). These assessments are not necessarily consistent over time[21] but most analytical methods used by the IMF suggest a moderate-to-high overvaluation over the past five years. Taking into account, that an industrial development strategy is more likely to be successful with a slightly undervalued exchange rate, further attempts to bring down the real exchange rate to a competitive levels could be considered[22]. The need for a lower exchange rate is even more acute for trade with EAEU partner countries against whose currencies the som is more strongly overvalued (see Figure 1-9). Hence, a careful analysis

[21] In its early 2016 review of the country, the IMF estimated that Kyrgyzstan's real exchange rate misalignment reached 14% in 2015 based on the current account method (IMF, 2016, p. 66) with the average index standing at 115 of its 2010-level. Less than one and a half years later, based on the same methodology, the IMF comes to the conclusion that by the end of 2015, the Kyrgyz real exchange rate was 'broadly in line with fundamentals' (IMF, 2017, p. 15) with the real exchange rate index standing at 109 in December 2015. Even if this more conservative view on the equilibrium exchange rate from the last review is considered, the som has remained overvalued throughout 2016 and 2017.

[22] On the flipside of a substantial monetary policy easing and a depreciation of the som is the fact that over 90% of the country's public debt is denominated in foreign currency. This implies that a depreciation also directly worsens fiscal sustainability and thus the ability of the government to conduct economic policy. These risks have already materialised in the past as the depreciation of som by 22% in 2015 led to the public debt-to-GDP ratio of Kyrgyzstan exceeding 60%.

of whether a 'Dutch-disease'-like phenomenon induced by remittances or other factors are behind the seeming upward trend in the real exchange rate is warranted. Also, it may be questioned that under these circumstances inflation targeting, which tends to be pro-cyclical in case of supply shocks and external shocks, is the optimal monetary policy regime.

1.3.2. Fiscal policy

Fiscal consolidation and debt sustainability at the top of the fiscal agenda. Fiscal policy is shaped by public debt sustainability considerations in line with the IMF support programme and accompanying conditionality and recommendations. Formally, Kyrgyzstan also has to fulfil fiscal requirements under the EAEU framework[23]. In 2016 Kyrgyzstan pursued a rather loose fiscal policy due to public investment programmes implemented to stimulate economic growth (financed via external concessional loans). Yet, towards the end of the year the government forced adjustments of its expenditures in attempt to achieve the fiscal deficit target. Since then the Kyrgyz authorities have been on track with a fiscal consolidation effort to bring the fiscal deficit to a more sustainable level of 3% in 2017 (down from 4.5% in 2016). Adjustment is envisioned via improvements in tax administration, reduction of the informal economy, optimisation of tax stimulus measures and cutting down on government expenditures.

While fiscal sustainability is imperative for macroeconomic stability, untimely and poorly planned fiscal consolidation may undermine growth prospects. Naturally, fiscal consolidation in the short-to-medium run will put binding constraints on the availability of public funds needed to finance institutional reforms and public investment. Both are much needed in the near future in Kyrgyzstan which suffers from multiple structural weaknesses and still low capacity to comply with the EAEU technical regulations, which limits its ability to exploit opportunities that Eurasian integration offers and in general hampers industrial competitiveness. An increase in the general tax burden and removal of simplified tax regimes will put further pressure on the private sector in an already difficult period of transition to a 'new normal'—elimination of incomes from re-exports via bazaars, lower potential growth rates of main trading partners, depressed commodity prices, stricter technical, sanitary and phytosanitary (SPS) and customs regulations, higher competition from the EAEU partners. Moreover, increasing the tax burden will make it more difficult to induce firms to switch to the formal economy. Therefore it is important to ensure that fiscal consolidation efforts on both expenditure and revenue side do not hamper public investment and targeted incentives for firms supportive of industrial productivity and competitiveness.

Improvements in the fiscal administration needed. The major effort should focus on enhancing the efficiency of tax administration and public expenditures, which is a difficult task per se with many strings attached. In particular, the elimination of a simplified tax regime will have negative effects on certain sectors (textiles and apparel), as well as investment activity (for instance,

[23] While fiscal consolidation has been a crucial component of the IMF macroeconomic stabilisation programme that Kyrgyzstan has been following, the country is also at least formally constrained now by the EAEU macroeconomic sustainability criteria. Actual enforcement of these regulations is, however, lacking, and the EAEU members have been breaching the criteria in the past, including Kyrgyzstan in 2016.

miscellaneous tax incentives[24] were one of the components of the investment attractiveness package offered in free economic zones of Kyrgyzstan). Moreover, the push for contraction of the informal sector along with higher tax burden may have drastic social costs, especially in impoverished rural regions relying largely on informal activity as a means of subsistence living. Reduction of informal economy is yet an important step for arriving at a transparent and competitive economy.

Creating fiscal space by reducing electricity subsidies. An urgent budgetary issue with implication for the leeway of fiscal policy is the reform of the energy sector which is a drag on the budget due to the highly subsidised electricity tariffs. While socially contentious, reforming the tariff system – which suffers from obvious flaws visible from high feed-in tariffs compared to end-user prices and in addition is prone to misuse – needs to be tackled urgently. It would create considerable fiscal space as the annual energy subsidies amount to almost 70% of the wage bill of the public sector and are 13 times higher than the budget allocations to the Monthly Benefit to Poor Families (MBPF) programme (World Bank, 2017a). The savings achieved by the tariff reform could be directly used to the benefit of the energy sector, for example by stepping-up public investments in new hydropower capacity or in the modernisation of the grid.

Overall, achieving macroeconomic stability and arriving at predictable and transparent macroeconomic policy is essential for fostering supportive business environment in general, and for facilitating FDI inflows, which should become the key engine of industrial modernisation and transformation of the country.

1.4. Seizing the Opportunities of the Eurasian Economic Union

Bottlenecks in industrial production need to be resolved to benefit from regional integration. Kyrgyzstan's accession to the Eurasian Economic Union (EAEU) constitutes the most important economic integration step since the country's entry into the WTO in 1998. EAEU membership has important implications for shaping its industrial development path by facilitating access to the large common market in proximity, inducing adoption of higher industrial production standards of the bloc, sustaining inflow of remittances and access to strategically important inputs. The bottlenecks that still prevent full access to the EAEU market however should be addressed quickly.

1.4.1. Eurasian Economic Union in brief

In August 2015 the Kyrgyz Republic became a member of the Eurasian Economic Union. The bloc, comprising now Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia, remains the most

[24] According to the information brochure of the Free Economic Zone 'Bishkek', these incentives include a zero profit tax, zero property tax rate and zero land tax rate. Moreover, rental costs of land and premises are very low (e.g. 1 USD per square metre per year in the case of land plots).

successful attempt so far to reintegrate the post-Soviet economies. The following key arrangements now constitute the economic core of the EAEU regulations:

- **Customs union:** shared customs territory with a common external tariff (CET) applied to non-member countries, harmonisation of non-tariff measures and procedures, unified commodity classification and customs code.
- **'Four freedoms':** free movement of goods, services, labour and capital across the EAEU member states.
- **Economic policy coordination:** the union attempts to harmonise macroeconomic policies of the member states by enforcing sustainability criteria capping inflation rate, general government debt and deficit levels, akin to the Maastricht criteria[25].

1.4.2. Key implications of the EAEU for the Kyrgyz Republic

Elimination of trade barriers improves access to a large regional market. A key implication of Kyrgyzstan's EAEU membership is the improved access to a large regional market with an aggregate GDP totalling over USD 1.5 trillion[26] and a population exceeding 180 million. Market access is bound to improve due to the dismantling of tariff and above all non-tariff barriers within the bloc. For Kyrgyzstan, access to the EAEU market is of critical importance due its large size, geographic proximity and cross-border infrastructure connectivity inherited from the Soviet Union. Besides facilitating export-led growth, removal of barriers to trade lowers the cost of strategically important imports, including fuels, gas, grain, metals, wood, chemicals and other input products critical for Kyrgyzstan's domestic industry (dependence on these imported inputs ranges from 80 to 100%).

Membership entails trade facilitation support by EAEU institutions and regional partners. Already now Kyrgyzstan receives substantial financial and technical assistance from EAEU institutions and member states to align to the more advanced technical and sanitary and phytosanitary (SPS) standards of the bloc. Compliance with these regulations and standards will be instrumental for industrial modernisation of Kyrgyzstan by improving its product quality monitoring capacity and trade infrastructure. The latter figure among the key obstacles for Kyrgyzstan and prevents the country's full access to the EAEU market. Bottlenecks include testing and certification laboratories as well as poorly equipped border checkpoints. EAEU partners, mostly Russia, have committed to financially support Kyrgyzstan experiencing difficulties with funding its regulatory approximation and infrastructure development on its own (although those were the preconditions for its accession to the EAEU). As of 2017 already 30 laboratories and 9 certification agencies in Kyrgyzstan were acknowledged by the EAEU authorities, implying that their test results and certificates are to be recognised throughout the EAEU (see Box B1.1.).

[25] In particular, annual CPI inflation rate of any member state should not exceed by more than 5 pp the lowest value in the bloc; general government deficit is capped at 3% of GDP and general government debt at 50% of GDP.

[26] 2016 value, in current USD. Aggregate output decreased from USD 1.6 trillion in 2015 as a result of recession and currency devaluation.

Non-compliance with EAEU regulations still inhibits exports. Despite the mentioned efforts Kyrgyzstan struggles with complying with EAEU regulations and standards which still inhibits exports from Kyrgyzstan to EAEU partners**.** So far, the country has not managed to take full advantage of access to the EAEU market. In fact, mutual trade of Kyrgyzstan with the EAEU partners in 2015, the year of accession, dropped by over 37%, followed by a moderate recovery in 2016 by 11%. Whereas in part this is an outcome of the lower value of oil imports from Russia due to the slump in oil prices, recession or slowdown of economic growth in the EAEU countries, a major factor is also related to Kyrgyz producers' inability to satisfy the mandatory EAEU technical and SPS requirements (largely based on the GOST standards[27]). The work on the elimination of these barriers is conducted by the local authorities and EAEU authorities, but much further progress needs to be made. According to the official (Eurasian Economic Commission) count of regulatory non-tariff barriers, Kyrgyzstan has 40 regulations in place which are deemed to be barriers. These include 7 associated with negotiated exemptions from the EAEU Treaty and 33 stemming from the lack of harmonised regulations.[28] Besides formal barriers that still remain, the bloc is characterised by a rather poor track record of compliance with the EAEU regulations, as it is not uncommon that immediate political considerations and bargaining override the formal agreements.[29]

Box B1.1. Financial support to Kyrgyzstan attached to its EAEU membership

- Russia provided USD 200 million to adjust to the EAEU regulations, in particular, 4 border checkpoints (Manas, Osh, Torugart, Irkeshtam) were equipped according to EAEU standards and 7 veterinary control checkpoints (Torugart, Irkeshtam, Dostuk, Kyzyl Bel, Kara-Suu, Manas and Osh) were established.
- The Russia-Kyrgyz Development Fund (RKDF) was established to support modernisation of the economy of Kyrgyzstan by providing loans for investment projects (directly and through partner banks) at preferential interest rates of 4-7% for up to 5 years (up to 10 years for projects over USD 5 million). The priority sectors are agriculture and food-processing, light manufacturing, mining and metals, communication technologies, storage and transport infrastructure, tourism, healthcare and energy infrastructure. Projects focusing on sustainable development are particularly encouraged. As of September 2017, USD 249 million worth of loans (out of USD 500 million USD of total funds provided by Russia) were disbursed, financing over 700 investment projects.
- USD 100 million worth of technical assistance will be provided by Kazakhstan to improve customs infrastructure, upgrade laboratories to comply with the EAEU standards.
- Russia's largest state energy corporation Gazprom plans to invest up to USD 1.7 billion in Kyrgyzstan to achieve a 60% coverage by its gas network.
- In 2017 Russia signed a protocol on writing off the remaining debt of Kyrgyzstan to Russia totalling USD 240 million.

[27] The GOST standards (Gossudarstwenny Standart) are a set of technical standards maintained by the Euro-Asian Council for Standardization, Metrology and Certification, the regional standards organization of the Commonwealth of Independent States (CIS) but which date back to the Soviet era.

[28] 'White Book' of barriers, exclusions and limitations in 2016 available at https://barriers.eaeunion.org/info/documents.

[29] Some examples include disputes over petroleum prices and trade wars (restrictions imposed on dairy and meat imports) between Belarus and Russia, a unilateral embargo imposed by Russia on a range of agricultural products from the Western countries. As regards Kyrgyzstan, continued tensions with Kazakhstan over the inability of Kyrgyz agricultural producers to meet minimum safety requirements resulted in a ban on transit via road transport via the territory of Kazakhstan at the end of 2016.

EAEU integration may facilitate FDI inflows to Kyrgyzstan. FDI prospects are likely to improve due to direct investments from the EAEU members now facing fewer constraints. In addition, while Kyrgyzstan's tiny market is of little interest *per se* as a destination of exports, it is attractive as a production base for exports to the rest of the EAEU, particularly, to Kazakhstan and Russia. This is especially relevant for China, striving to develop its New Silk Road initiative in the region. Stricter border controls and higher level of protectionism vis-à-vis non-EAEU trading partners as a result of the Eurasian customs union regulations also make this avenue yet more likely. FDI inflows could become a key element of industrial transformation of the Kyrgyz industry by fostering integration into global value chains and supply networks and bringing in new technological and organisational skills. Formally, the EAEU framework also calls for a coordinated industrial policy, putting an emphasis on the automotive sector, heavy and light manufacturing industries and also stressing sustainable manufacturing development. However, the real prospects of this endeavour are not clear at the moment.

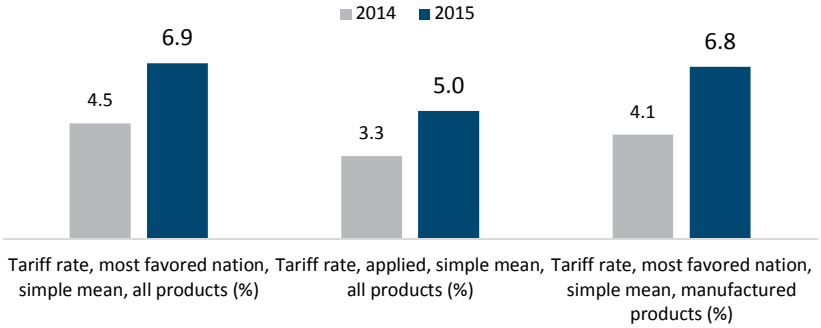
Maintained access to the labour market of the EAEU helps avoid a major macroeconomic shock. Migrant remittances, coming mostly from Russia[30], are critically important for Kyrgyzstan as a source of income (remittances constitute 20-30% of its GDP) and means of financing its persistent trade account deficit. Maintained access to the EAEU labour market as a part of the bloc's 'four freedoms' arrangement (no quotas and special permissions for labour migrants) helped Kyrgyzstan to avoid a sharp permanent macroeconomic shock. On the flipside, easier access to the EAEU labour market may also further exacerbate the problem of labour force outflow from Kyrgyzstan, both skilled and unskilled, thereby eroding the its growth potential.

The Common External Tariff has led to increases of import duties against non-EAEU members. Due to its very liberal trade regime, the adoption of the EAEU CET has led to an increase of Kyrgyz import duties against non-EAEU members. Upon accession to the EAEU in 2015 the average MFN import tariff rate of the Kyrgyz Republic increased from 4.5% to 6.9% (Figure 1-10). Kyrgyzstan had a more liberal trade regime prior to its accession to the EAEU. Deterioration of the trade regime with the WTO members caused by accession to the EAEU requires compensatory negotiations to be carried out by Kyrgyzstan. As far as the impact on industrial development prospects is concerned, the CET represents a double-edged sword: on the one hand, it better shields manufacturing sectors of Kyrgyzstan from foreign competition (Figure 1-11). On the other hand, the cost of some important intermediate inputs from non-EAEU partners (particularly for its textile and apparel industry[31]) will also increase.

[30] Over a quarter of Kyrgyzstan's labour force is estimated to be employed in Russia. After a drop in 2015 (on account of recession in Russia and the effects of Russian rouble depreciation eroding real incomes of migrants) inflow of remittances recovered in 2016.

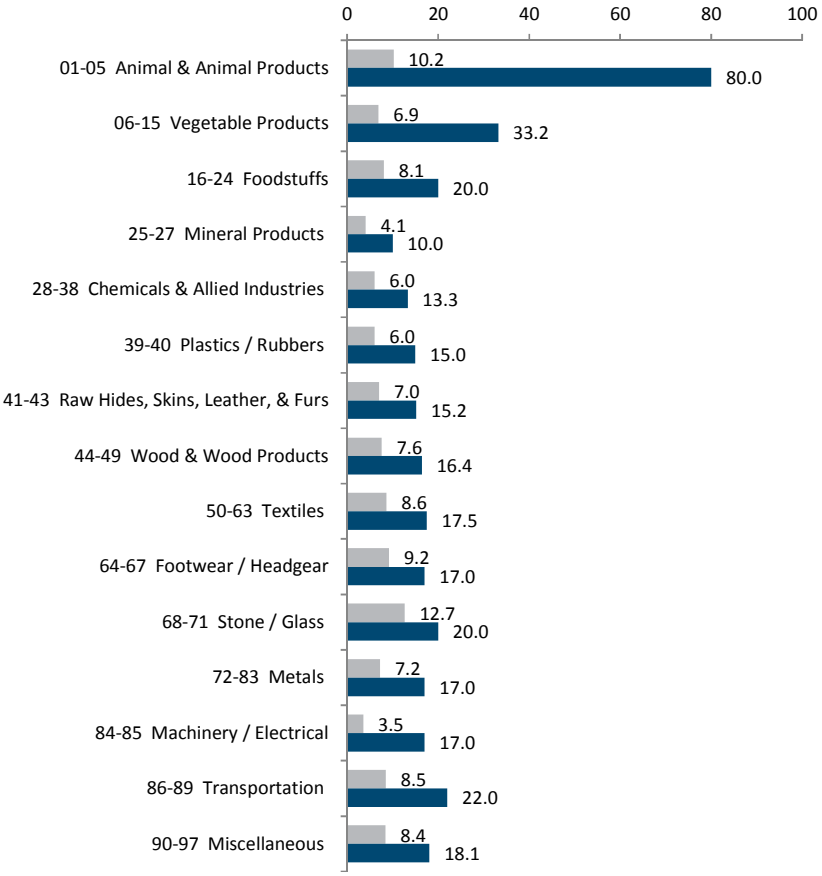
[31] The textile and apparel industry of Kyrgyzstan depends on imports of material inputs and equipment utilised in the production process, over 60% of which are imported from China. Some estimates suggest cost of material inputs for the textile industry may increase up to 20%.

Figure 1-10: Kyrgyzstan's average import tariffs and EAEU-induced changes, 2014-2015



Source: World Bank's WDI.

Figure 1-11: EAEU common external tariff structure, 2016



Note: Based on the MNF import duty profile of Russia in 2016. Grey bars indicate simple average tariff rate and blue bars indicate maximum tariff rate of the respective industry group comprised of HS 2-digit level sectors as indicated.

Source: Own computations based on the WITS data.

The future of Kyrgyz bazaars is uncertain. The CET along with stricter external border controls now precludes re-exports of cheap imports from China via Kyrgyz *bazaars*, which has strong negative social implications as *bazaars* were a major source of employment and income of the country[32]. On the positive side, according the EAEU arrangements, Kyrgyzstan is entitled to 1.9% of the total customs revenues of the union—a new relatively stable stream of fiscal revenues for the country, in addition to higher revenues from VAT taxation of imports from China (earlier under a simplified tax regime).

EAEU also increases competitive pressures from EAEU members. Members of the EAEU have industrial specialisation in many respects similar to that of Kyrgyzstan, being technically more advanced. Within EAEU overlaps in production specialisation exist for example in food production (with Kazakhstan, Armenia, Belarus and Russia) and textiles and apparel industries (Belarus[33]). Since all countries also serve similar export destinations in these industries, export competition in bound to intensify. First impacts of this competition effect are already felt. For example, in 2016 exports of agricultural and agro-processed goods declined, although the negative development is at least partially attributable to Kyrgyzstan's inability to comply with EAEU quality standards (World Bank, 2017a).

1.4.3. Prospects of bridging other integration endeavours in the region

Albeit technically it is possible for the Kyrgyz Republic to pursue multiple integration agendas even despite customs union arrangements (e.g. free trade agreements are still possible with rules of origin in place), the EAEU membership certainly imposes political and institutional constraints on developing economic ties with other countries and integration endeavours. The cooperation choices are now limited by the legally binding commitments in the bloc and certain regulatory competencies are in fact delegated to the EAEU supranational institutions. The EAEU framework nevertheless provides adequate room for enhancing relationship with non-bloc partners, and Kyrgyzstan should certainly try to diversify its export markets, mitigate its overly high economic exposures to EAEU members, improve economic connectivity within the region, and integrate into global value chains.

Of particular importance for Kyrgyzstan is the One Belt, One Road (OBOR) initiative led by China. The Silk Road Economic Belt component of the OBOR initiative is aimed at improving land-based connectivity throughout the Central Asia and beyond, and Kyrgyzstan is among the countries along that route that will be directly affected by ambitious plans of China to improve cross-border infrastructure throughout the region. China has already been a rather active investor in the country, particularly, in large-scale infrastructure and energy projects, much needed in the

[32] In particular, Dordoi and Kara-Suu markets are the major trade centres specialising in re-exports of goods (textiles and apparel) from China to Tajikistan, Uzbekistan, Kazakhstan and Russia, especially important for employment and income generation of Kyrgyzstan. Dordoi, with an employment of 54 thousand and a turnover of USD 4 billion, is estimated to provide means of living for as much as 15% of the population, and Kara-Suu, with a turnover of USD 600 million, employs some 16 thousand people.

[33] Arguably, Belarus and Kyrgyzstan are not (yet) supplying the same quality segment of the Russian market for textiles and wearing apparel (Jenish, 2014).

country.[34] The OBOR initiative will take the investment in infrastructure efforts to much higher levels, which will be instrumental for reindustrialisation and modernisation strategy of Kyrgyzstan. So far, other EAEU members view the OBOR as an important opportunity for the bloc, rather than as its competitor in the region, and also seek closer collaboration, in particular in areas concerning cross-border motorway network and high-speed railroad construction.

Developing further ties with the EU also remains part of the integration agenda of Kyrgyzstan. In January 2016, GSP+ treatment was granted to Kyrgyzstan by the EU for a period of 7 years (eliminating tariffs for 6,200 products imported from Kyrgyzstan). Before that, since 1993 the country had been a beneficiary of the GSP regime. However, converting these opportunities to benefits still appears to be a challenge for Kyrgyzstan on account of high levels of protection of the agri-food sector in the EU via non-tariff barriers, along with Kyrgyzstan's weak infrastructure and remoteness from European markets. The differences between the EAEU and the EU in terms of technical and SPS standards may further limit export opportunities of Kyrgyzstan to the EU market. At the same time, the EU remains among the main international donors investing in Kyrgyzstan and encouraging structural reforms instrumental for its industrial modernisation, and the country should make every effort to uphold the partnership.[35]

1.5. Challenges for Industrial Development of a Small Middle-Income Country

Kyrgyzstan faces numerous developmental challenges that are common to lower-middle-income countries[36] (LMIC). These challenges include elements in the general framework conditions as well as structural issues and problems related specifically to the manufacturing sector.

1.5.1. Weaknesses in the general framework conditions

The general economic framework conditions need to comply with some minimum standards in order to allow for a successful industrial development. Any industrial policy, even if well-designed and tailored to the country's capabilities, is bound to fail if the fundamental institutional framework is inappropriate (Haraguchi, 2016b).

Transport and trade infrastructure in need of improvement. The quality of Kyrgyzstan's road infrastructure is judged to be inadequate with a third of the roads being in poor condition and in need of rehabilitation or reconstruction (ADB, 2014b). In contrast, the railroad network is – although all railroad lines are single-track lines – in a reasonable good condition (ADB, 2013a) and in the process of expansion due to Chinese investments that form part of its *'One Belt, One Road'*

[34] Some of the successful projects include the Junda and Tokmok oil refineries, the Datka-Kemin energy transmission line, the construction of the North-South motorway and the Bishkek-Torugart road, and the Bishkek thermal power plant reconstruction. The Export-Import Bank of China in 2016 topped the list of Kyrgyzstan's major creditors (USD 1.4 billion of outstanding credit amount).

[35] The EU has allocated EUR 184 million of bilateral aid for the period 2014-2020 along the lines of the Development Cooperation Instrument; in addition, there is support via the Investment Facility for Central Asia in cooperation with the EIB and EBRD, as well as other instruments supporting sustainable development projects.

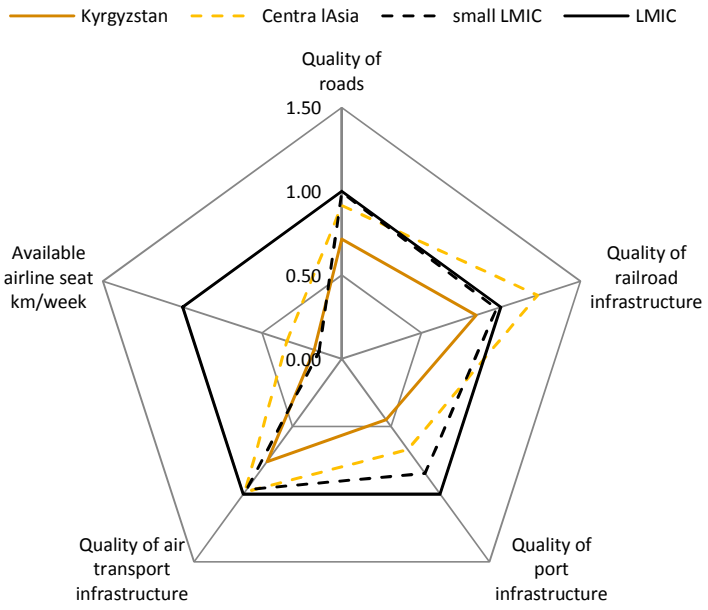
[36] The World Bank defines lower- middle-income countries as those with an income of USD 1,005-3,955 based on the GNI per capita (using the World Bank Atlas method).

(OBOR) initiative. This suggests that companies using mainly railroad transport may face less problems infrastructure-related problems than those who use road transport. However, the rail network also has severe shortcomings. Above all, the current network is rather small and there is no connection between the Southern and Northern part of the country[37].

That may be the reason, why the Kyrgyz transport infrastructure – both road and rail – is perceived to be of inferior quality in comparison to other lower-middle income countries and also in comparison to Central Asia (Panel (a) in Figure 1-12).

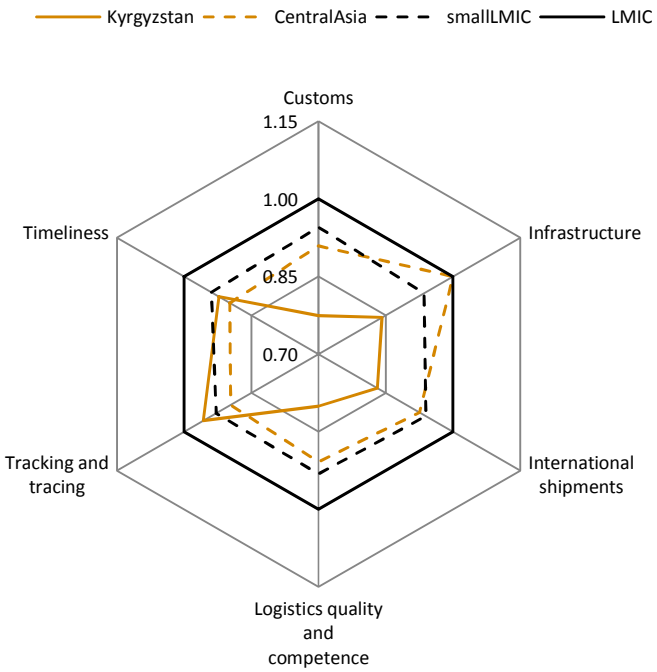
Figure 1-12: Quality of transport infrastructure and logistics performance, international comparison

Panel (a) Quality of infrastructure (WEF)



[37] Railroad transportation plays a minor role as more than 90% of freight traffic is carried by road according to national statistics (ADB, 2013a with figures relating to the year 2010).

Panel (b) Logistics performance (World Bank)



Note: All indicators have been normalised so that 1 represents the value of LMIC. Larger values indicate a better performance.

Source: WEF Global Competitiveness Indicators; World Bank's Logistics Performance Index.

Additionally, there are perceived problems related to the organisation of road transportation. These transport services are mainly provided by privately-owned mini-buses or road carriers, which are predominantly private entrepreneurs using old trucks, often dating back to the Soviet era. This way of organising commercial transportation tends to be inefficient resulting in relatively high transport rates (ADB, 2013a). The outdated transport vehicles are emission-intensive and therefore problematic from an environmental perspective. With regards to rail transport, consultations with a stakeholder relying on rail transport for export suggest that the quality of the service is deemed acceptable but that prices charged are higher compared to other countries in the region. Together with the fact that the predominant mode of transportation is road transport, this explains the very low score of Kyrgyzstan with regards to the quality and competence prevailing in logistic services (Panel (b) in Figure 1-12).

Transparency and quality of institutions matters for businesses activities. The Kyrgyz government recognizes that improving the quality of institutions is very important and figures prominently in recent policy initiatives (Step 20 in the "40 Steps to New Era"). A good example is

the so-called Taza Koom programme[38], which strives for a digital transformation of the Kyrgyz society. Based on the construction of a modern ICT-infrastructure, the programme envisages – among other things – the digitalisation of communication between government and citizens, which would clearly improve the efficiency, transparency and accountability of public administration at all levels.

The industrial development should take the existent economic framework into account. Since institutions are slow to change and often the most pressing problems are left untouched until a massive crisis occurs, chances are that the current governance problems will prevail in the medium-term. Hence, a prudent and realistic assumption is that the industrial development strategy will have to be designed for and implemented within the current institutional confinements. In this respect a strong involvement of foreign companies – to the extent that they can be attracted given the business environment – and international donor organisations seems desirable. Another vehicle that could be used, but which so far did not prove very successful in Kyrgyzstan, are free economic zones (FEZ) which are one way to circumvent parts of the weaknesses in the institutional framework.

1.5.2. A vulnerable and undiversified economy

An inconspicuous economic structure. One of these challenges is a highly undiversified economy which tends to makes the macroeconomic development vulnerable to industry-specific shocks. At first glance, the economic structure of Kyrgyzstan reveals no major particularities: services account for a growing share of value added reaching 56% in 2016, the value added share of the industrial sector accounted for 29%, leaving 15% for the employment-intensive agricultural sector (Figure 1-13).

Within the industrial sector, about 9% of GDP are due to the construction sector while only about 2% of value added stem from the generation and distribution of electricity, gas and water. The latter is surprising as Kyrgyzstan's hydroelectric power plants, mainly located at the Naryn River, generate 90% of the country's electricity consumption (although with pronounced seasonal fluctuations). Given the lack of other energy sources such as oil, gas or coal, the country's abundant water resources and their potential for hydropower generation constitute an essential industrial asset.

Zooming into the manufacturing sector reveals major structural weaknesses. The broad sector composition of Kyrgyzstan's economy is more or less in line with other LMIC, including small LMIC. With 17% the manufacturing sector's share in GDP is actually above the average of small LMIC (Panel (a) in Figure 1-13). Even the comparison with successful small LMIC in South East Asia (Panel (b) in Figure 1-13) does not suggest a major weakness or underdevelopment of the Kyrgyz manufacturing sector as the country is more or less on par with Cambodia and Vietnam.

[38] See: http://tazakoom.kg/site/concept/22

A closer look at the structure of the manufacturing sector, however, reveals severe structural problems such as the country's slim and undiversified manufacturing base. The Kyrgyz economy is strongly dependent on gold production which is responsible for approximately 7% (ADBa, 2014)[39] to 10% of the Kyrgyz GDP[40], depending on the fluctuations in gold prices and mine output. This implies that gold accounts for more than half of the country's manufacturing value added leaving some 7-10% of GDP for all other manufacturing activities.

As evidenced in Chapter 2, gold mining is capital intensive but does not generate a large number of jobs. The same is true for the associated smelting and foundry activities which in the case of the Kumtor gold are also located in Kyrgyzstan[41]. The required know-how is mainly provided by the Canadian mining company operating the mine. The extreme importance of gold production makes the country highly dependent on its natural endowments (UNESCO, 2015). In general, the exploitation of natural resources can be seen as being in line with comparative advantages because as a factor-driven economy[42] – as classified by the World Economic Forum (WEF) – Kyrgyzstan is supposed to compete primarily on prices relying on comparative advantages in unskilled labour and natural resources. However, manufacturing activities need to be broadened calling for a diversification strategy targeting other resource-based and labour-intensive industries. An example would be a more intensive use of the existing water resources for hydro power generation or the development of agro-food processing industries. The reliance on commodities is reflected in the country's export structure which is tilted towards gold with limited diversification into other primary goods, resource-based manufactures and low-tech manufactures (Figure 1-14). Among the latter, the export of cotton and textiles are important also from an employment perspective. However, large parts of Kyrgyzstan's garment exports are re-export of products of Chinese origin that are sold on to Russia and Central Asian countries, mainly Kazakhstan and Uzbekistan. The future prospect of this re-export business is uncertain once the transition period for the textile sector for adopting the external tariff of the EAEU expires.

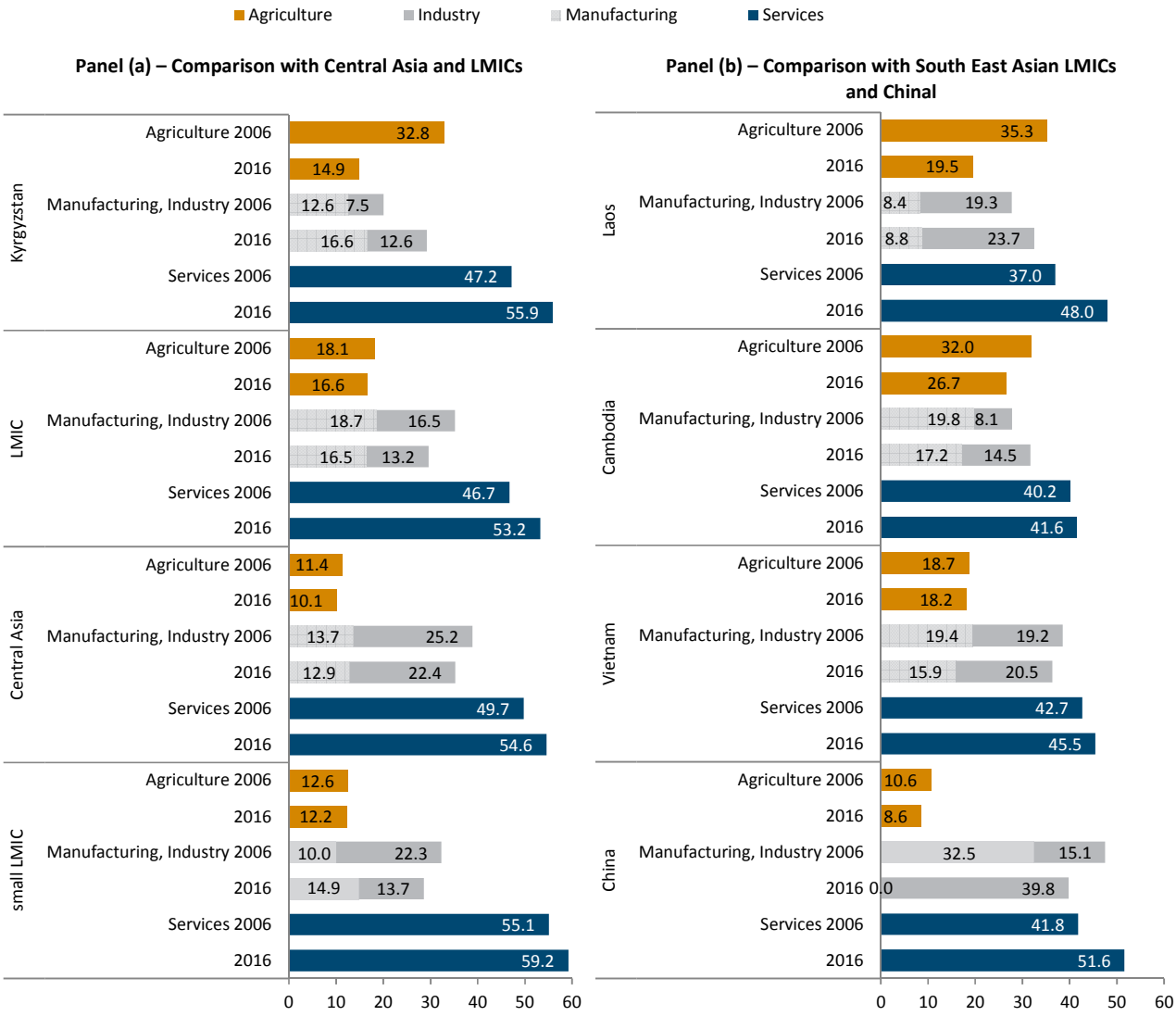
[39] Average for the years 2001-2012.

[40] 'Canadian Court Freezes Kyrgyzstan Gold Mine Shares' by David Trilling, Eurasianet, 15 October 2014, http://www.eurasianet.org/print/70446 and 'Kyrgyzstan ratchets up dispute against Canada's Centerra Gold' by Cecilia Jamasmie, mining.com, 15 June 2016, http://www.mining.com/kyrgyzstan-ratchets-up-dispute-against-canadas-centerra-gold/

[41] Gold production in Kyrgyzstan is recorded as a manufacturing activity, allocated to NACE Rev. 2 industry class „precious metal production (or industry 2420 in the ISIC Rev. 4 classification).

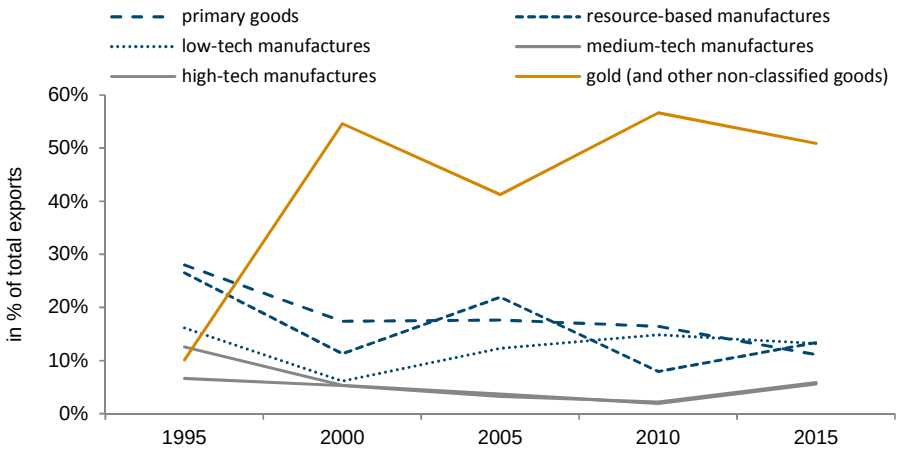
[42] See http://reports.weforum.org/global-competitiveness-index/appendix-a-methodology-and-computation-of-the-global-competitiveness-index-2016-2017/

Figure 1-13: Broad economic structure, international comparison, 2006-2016



Note: KGZ: Kyrgyzstan; LMIC: Lower-middle-income countries; CA: Central Asia; Small LMIC: Small lower-middle-income countries. SLMIC are LMIC with less than 12.5 million inhabitants. Country groups are weighted averages. Based on nominal value added data.
Source: World Development Indicators (WDI).

Figure 1-14: Kyrgyz exports by technology content of goods, 1995-2015



Note: Data based on SITC-3 product classification mapped into product categories according to the classification by Lall (2000). Gold is unclassified in this classification and therefore shown separately (along with other unclassified products).
Source: UNC Comtrade (download via WITS).

Several other key export items, while not re-exports in a strict sense, also rely exclusively on foreign inputs. A point in case is the refined petroleum exports: the crude oil is imported from neighbouring Kazakhstan, refined by Chinese-controlled refineries in Kyrgyzstan and then partly re-exported, partly consumed domestically. Refined petroleum has advanced to the second most important single export item of Kyrgyzstan after all-dominant gold exports (Table 1.1).

1.5.3. Manufacturing misses out as a Driver of Growth and Employment

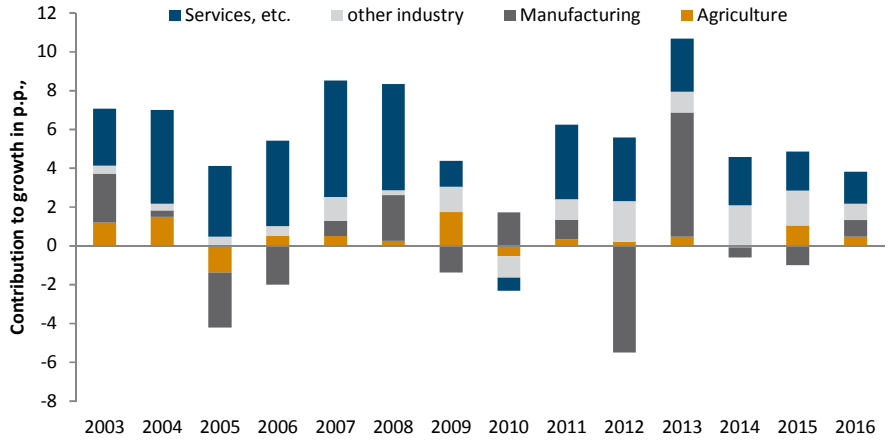
Manufacturing adds volatility but only little growth to the Kyrgyz economy. Despite the strategic importance of gold production, the manufacturing sector contributed only marginally to overall economic growth over the past 15 years (Figure 1-15). Growth was mainly driven by the services sector with the average contribution of manufacturing accounting for only 0.2 percentage points (2003-2016). Looking at the development of industrial production (Figure 1-16) suggests that the industrial sector's contribution to the macroeconomic development was mainly volatility which in turn moves in parallel with gold production. The huge fluctuations in gold production imply that the volatility of economic growth (see Figure 1-3 above) is bound to stay even in the absence of further political turbulences, unless Kyrgyzstan manages to diversify its production structure.

Table 1.1: Kyrgyzstan's main export items, average 2006-2016

product code	export value (USD millio)	share in total exports	product description
7108	576.4	45.5%	Gold (unwrought, semi-manufactured forms, powder form)
2710	70.7	5.6%	Petroleum oils (not crude)
0713	40.8	3.2%	Vegetables, leguminous; shelled, whether or not skinned or split, dried
6204	35.5	2.8%	Coats; women's or girls' overcoats, carcoats, capes, cloaks, anoraks, ski-jackets, wind-cheaters, wind-jackets (not knitted or crocheted)
2716	32.6	2.6%	Electrical energy (Optional Heading)
5201	25.7	2.0%	Cotton; not carded or combed
6206	19.9	1.6%	Blouses, shirts and shirt-blouses; women's or girls' (not knitted or crocheted)
2616	19.1	1.5%	Precious-metal ores and concentrates
8539	18.7	1.5%	Lamps; electric filament or discharge lamps
7005	16.7	1.3%	Glass; float glass and surface ground or polished glass, in sheets
2523	15.2	1.2%	Portland cement and other cement
2401	12.6	1.0%	Tobacco, unmanufactured; tobacco refuse
8708	12.2	1.0%	Motor vehicles; parts and accessories
0809	11.0	0.9%	Apricots, cherries, peaches (including nectarines), plums and sloes, fresh
8802	10.2	0.8%	Aircraft n.e.c. (e.g. helicopters, aeroplanes)
3923	9.6	0.8%	Plastic articles for the conveyance or packing of goods; stoppers, lids, caps and other closures of plastics
0401	9.0	0.7%	Milk and cream; not concentrated, not containing added sugar or other sweetening matter
6203	9.0	0.7%	Overcoats, car-coats, capes, cloaks, anoraks, wind-cheaters, wind-jackets and similar articles, men's or boys (not knitted or crocheted)
8704	8.1	0.6%	Vehicles; for the transport of goods
7204	7.3	0.6%	Ferrous waste and scrap; remelting scrap ingots of iron or steel

Note: Classification by HS 4-digit product codes.
Source: UN Comtrade (download via WITS), wiiw calculations.

Figure 1-15: Sector contributions to growth in Kyrgyzstan, 2003-2016



Source: National Statistical Committee of the Kyrgyz Republic.

Figure 1-16: Gross industrial output and gold production, 2000-2016

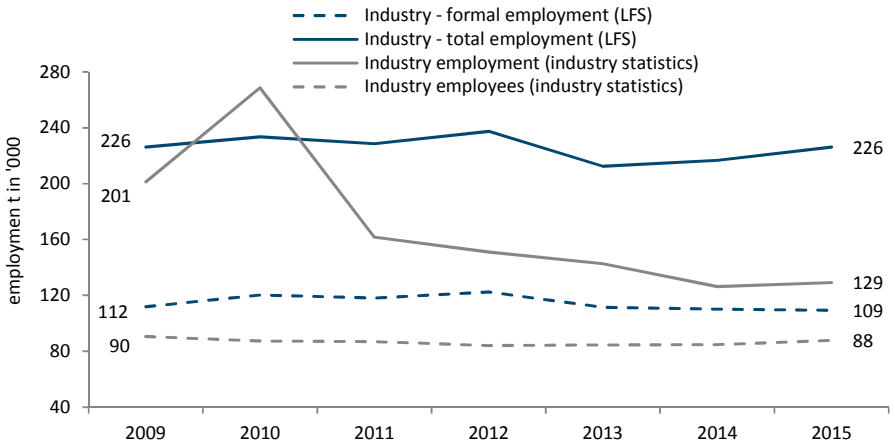
Source: National Statistical Committee of the Kyrgyz Republic; for gold production, own calculations based on the Kumtor Gold Company data.

Volatility hampers sustained economic growth. Volatility is a major obstacle for economic development. A growth take off requires a high growth rate of approximately 5% or more but also that the growth is sustained and not repeatedly interrupted. As such the volatility in the growth rate hinders the longer-term development of the country and needs to be addressed urgently. Of particularly concern is the poor performance of the manufacturing sector.

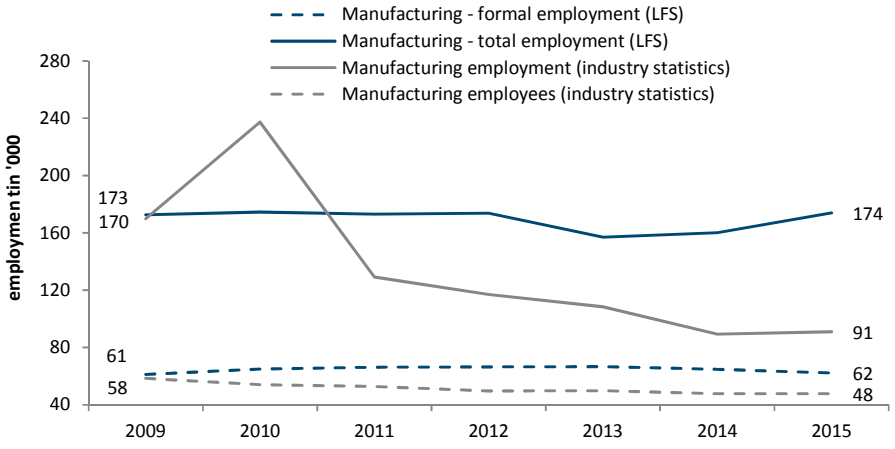
Manufacturing fails to provide for stable and well-paid jobs. A major reason behind the disappointing growth contribution of the manufacturing sector is its failure to create new employment opportunities and to attract labour freed from the agricultural sector. This is true especially for formal jobs, the number of which has dropped by about one third since 2011 (Panel (b) in Figure 1-17).

Figure 1-17: Employment development in industry and manufacturing, 2000-2015

Panel (a) – Industrial sector



Panel (b) – Manufacturing sector



Source: National Statistical Committee of the Kyrgyz Republic – LFS statistics and industrial statistics.

Total manufacturing employment, i.e. including informal jobs, was more stable but still hardly contributing to job creation. It is worth mentioning that for both industry and manufacturing employment, the data from Kyrgyzstan's national statistics vary considerably depending on the

data source. According to the Kyrgyz Labour Force Survey (LFS), which is based on a representative survey of individuals, the industrial sector employed some 226,000 thousand people, with more than half assigned to the informal sector (Panel (a) in Figure 1-17). The data from national industrial statistics are based on firm registers and suggest a considerably smaller numbers for industrial employment: the total employment of registered companies was only 91,000 in 2016 whereas the number of employees was only 48,000. This is evidence of the high number of one-person enterprises. Irrespective of which data sources are considered though, the key problem is that neither the manufacturing sector nor the industrial sector were able to create a sizeable number of additional jobs over the past years due to the lack of competitiveness in labour intensive industries. .

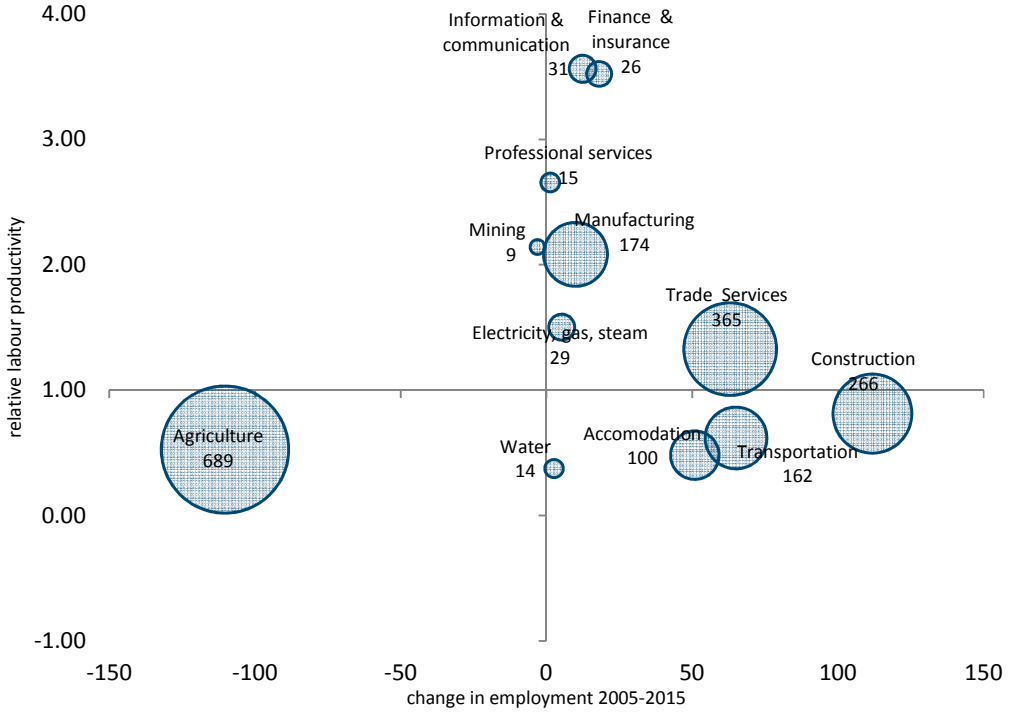
The high degree of informality is a persistent problem plaguing the entire economy. Informality is most widespread in the agricultural sector which is also characterised by very low productivity, reaching only half of that in the average Kyrgyz economy. This is evidence of the presence of a dual economy (Lewis, 1954). The concept of a dual economy describes a situation where traditional sectors such as agriculture, still largely based on subsistence and semi-subsistence farming with scarce modern agricultural equipment (UNECE, 2015), co-exist with modern sectors that have embraced capitalist modes of production. The arising productivity differences between traditional and modern sectors imply that structural change towards more productive sectors constitutes low hanging fruits that could be harvested to boost aggregate productivity. So far, however, this type of structural change has not been materialising in Kyrgyzstan.

Structural change is geared towards rather low productivity sectors instead of manufacturing. Over the last decade more than 100,000 jobs disappeared in agriculture but employment has shifted primarily to the trade services sector, construction and the tourism sector (accommodation) (Figure 1-18). In contrast, hardly any of the work-force that left agriculture was absorbed by the manufacturing sector. This is a sub-optimal structural development as labour productivity in the main labour-absorbing sectors is also comparatively low. The low productivity in these sectors is again partly explained by the high degree of informality. For example, 90% of the employment in trade services is in the informal economy. In manufacturing, labour productivity is about twice as high on the average in the economy (strongly influenced by the metal production) so that the structural change bonus (Szirmai and Verspagen, 2015)[43] would be much higher if manufacturing were to attract additional labour in the formal part of the economy[44]. The emphasis on the formal manufacturing sector is important because even in manufacturing still 60% of employment constitute informal jobs.

[43] Baumol (1967) was the first to point out the impact of structural change on economic growth. He was, however, focusing on the potential risks of that, i.e. when an economy moves from high-productivity sectors (progressive sectors) to low-productivity sectors (non-progressive sectors). This implies negative structural change, which is known in the literature also as Baumol's growth disease.

[44] Obviously, there exist some pockets of high productivity in the services sector such as banking and insurance or professional services. However, it is doubtful whether these industries have the potential to absorb large amounts of labour.

Figure 1-18: Labour productivity and structural change in the Kyrgyz economy, 2000-2015



Note: The size of the bubbles indicates the size of the respective industry in terms of employment in thousands. Relative labour productivity calculated as sector-level labour productivity over productivity across all sectors. Employment figures including informal employment.
Source: National Statistical Committee of the Kyrgyz Republic – LSF statistics.

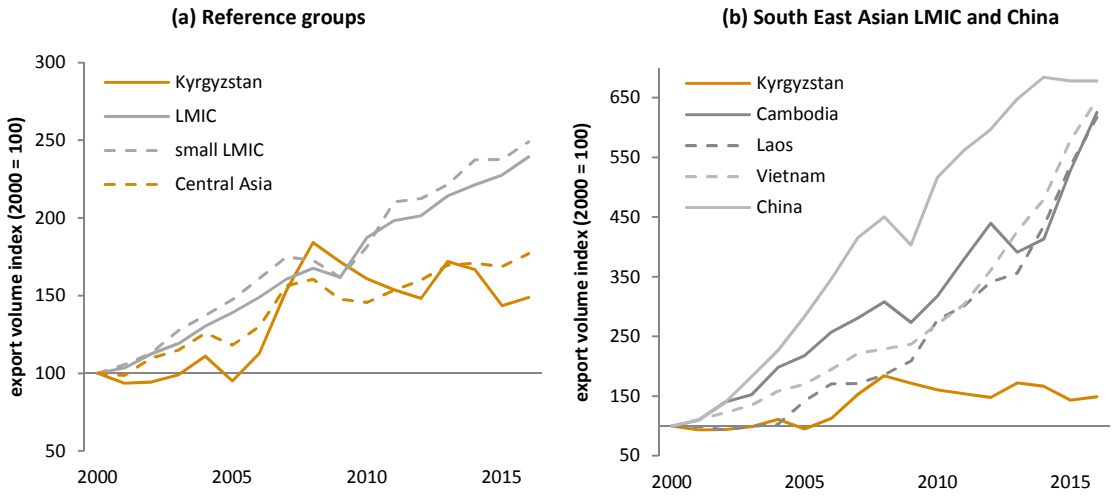
Informality is also widespread in several manufacturing industries. The high incidence of informality also within the modern sectors signals that the Kyrgyz economy is a double dual economy (Bertrand and Squire, 1980). In addition to the modern-traditional sector duality there is also a duality within modern sectors arising from the prevalence of the informal economy which flourishes due to the lack of formal employment opportunities. Overall, an estimated 70% of the active work-force is active in the informal economy contributing an estimated 28% of total value added (see also IMF, 2016b). Especially, promising industries such as textiles and garment production are dominated by informal activities, causing not only problems for productivity but also for reaching a minimum efficient scale of production.

Overall, the extent of informal activities is also one of the major reasons for the low labour productivity in Kyrgyzstan, including in export-oriented manufacturing industries, which contributes to the country's lack of international cost competitiveness.

1.5.4. An inferior export performance

Lack of cost competitiveness and regional factors hold back export growth. The weak spots in the otherwise relatively satisfactory growth performance of Kyrgyzstan over the past years are the high volatility and the minor contribution of the industrial sector. Existing evidence from countries that embarked on a steep and sustain growth trajectory suggest that their growth has been primarily based on an expanding and internationally-competitive manufacturing sector (UNIDO, 2015). The comparatively flat development of export volumes suggests that most manufacturing industries lack international cost competitiveness (Figure 1-19). Kyrgyzstan's export development was far less dynamic than that of small LMIC which is an informative comparator group in this context (panel (a) in Figure 1-19).

Figure 1-19: Development of export volume index, comparison with references groups and countries



Note: Small LMIC and Central Asia are unweighted averages.
Source: UNCTAD trade database.

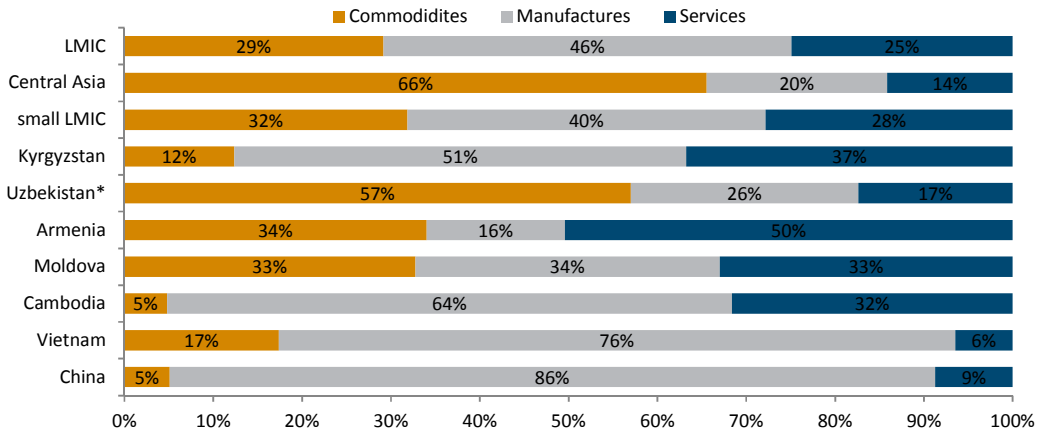
The fact that Central Asia as a whole shows an inferior export volume performance points towards some region specific issues while the most recent drop in export volumes in Kyrgyzstan is evidence of some country particularities. Hence, region specific aspects such as being land-locked or the common Soviet legacy along with country specificities such as the mountainous terrain and recurring political turmoil seem to play a role for Kyrgyzstan's flat export development. The extent of the weakness in export performance becomes obvious in a comparison with South East Asia LMIC such as Laos, Vietnam or Cambodia. These countries illustrate how the export development should look like and also that it is possible, once integration into international production networks starts to take off (panel (b) in Figure 1-19)[45]. So far, however, Kyrgyzstan and the entire

[45] Note also the difference in scale of the vertical axis in Figure 1-19.

Central Asian region remains largely marginalised with respect to international production activities.

The weakness of the manufacturing sector is discernible in the export structure. The key driver behind Kyrgyzstan's modest export performance is the weakness of the manufacturing sector. This is discernible from the export structure of Kyrgyzstan (Figure 1-20) which reveals a relatively large share of services exports, mainly transport services and tourism. The prominent share of services exports, however, is not an indication of strong comparative advantages (though these may exist for example in tourism) but rather from the small manufacturing base. Manufacturing accounts for slightly more than half of total exports. While this is a higher share than prevailing in the average small LMIC, it is still problematic given that half of manufacturing exports revenues is accounted for by gold. Cambodia and Vietnam can once more be used as examples to demonstrate how the export structures of catching-up countries with incipient competitive manufacturing industries are supposed to look like. In these countries the share of manufacturing exports amount to about two thirds or more.

Figure 1-20: Export structure, comparison with references groups and countries, 2015

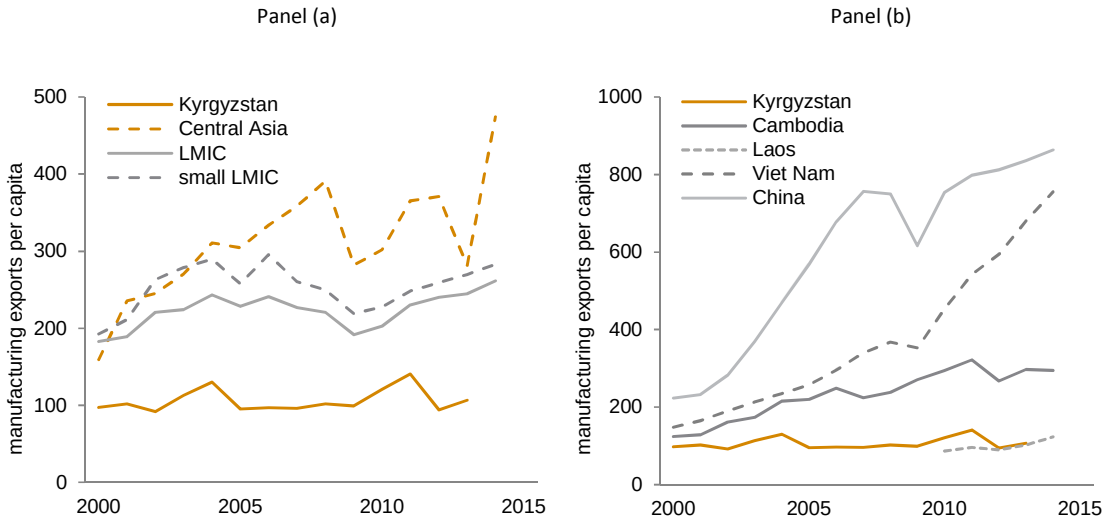


Note: Small LMIC and Central Asia are unweighted averages.
Source: UNCTAD trade database.

This conclusion about the Kyrgyzstan's manufacturing sector is confirmed by the cross-country comparison of manufacturing exports per capita (manufacturing export intensity). Manufacturing export intensity is particularly low in Kyrgyzstan, irrespective of whether LMIC or small LMIC are used as reference groups (Figure 1-21). Moreover, it shows a stagnant trend over time since 2000 which is in contrast to all other countries and regions. A particular problem is that the country holds only few revealed comparative advantages in the manufacturing sector apart from gold production. The problems that Kyrgyz manufacturing faces seem to be broad based as the

performance of the manufacturing sector of Kyrgyzstan was found to be consistently low across most manufacturing industries (Haraguchi, 2016b).

Figure 1-21: Manufacturing export intensity, comparison with references groups and countries



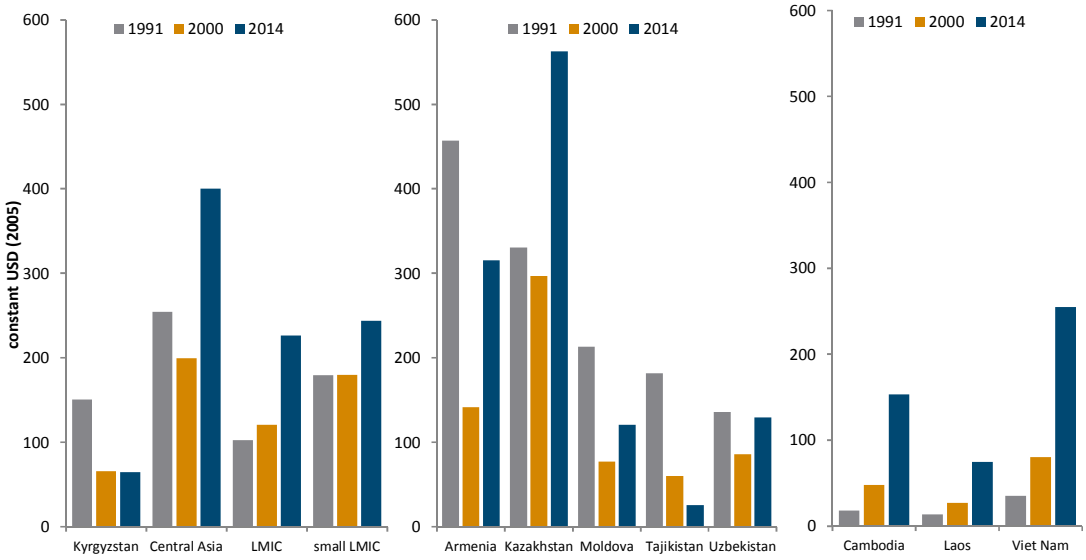
Note: Manufacturing exports in constant USD 2005. LMIC = lower-middle-income countries. Small countries are countries with a population of less than 12.5 million inhabitants in 2016.
Source: UNIDO database.

Shifting to a manufacturing-led growth model is warranted. The poor export performance of Kyrgyzstan's manufacturing sector risks a second 'premature de-industrialisation' (Rodrik, 2013) – after the de-industrialisation that had occurred during the transition recession in the first half of the 1990s. Premature de-industrialisation refers to the phenomenon that the share of manufacturing in total GDP tends to start diminishing at a lower GDP per capita than used to be the case in the past. This is also an issue for Kyrgyzstan which – at its current income level of USD 1,045 (2016) – should see its manufacturing sector expanding and occupying increases shares in terms of value added generation and employment. That the manufacturing sector is currently losing in relative importance in the Kyrgyz economy is also shown by the development of real manufacturing value added generated by the sector in per capita terms. Manufacturing value added per capita (MVA per capita) is a useful summary indicator for developing countries as, in addition to a sectors relative importance in the economy it also reflects the overall productivity of a country in a comparison across countries.

The development of Kyrgyzstan's MVA per capita has been shrinking considerably over time with the largest losses incurred back in the 1990s during the transition recession (Figure 1-22). Nevertheless, even in more recent years, manufacturing was lacking dynamism so that MVA per

capita was down to USD 65 in constant terms (2005). This development confirms, among other things, the country's structural developments, in particular the inability of the sector to attract additional labour.

Figure 1-22: Real manufacturing value added per capita, international comparison, 1991-2014



Note: Manufacturing exports in constant USD 2005. LMIC = lower-middle-income countries. Small countries are countries with a population of less than 12.5 million inhabitants in 2016.
Source: UNIDO database.

The comparison across countries also shows that Kyrgyzstan's manufacturing sector is clearly underperforming in terms of MVA per capita, reflecting mainly the sector's low productivity and only to a lesser extent the specialisation patterns. The reason why specialisation pattern are not the primary reason for Kyrgyzstan's low MVA per capita is the fact that the value added share of manufacturing (as shown in section 1.5.2) is comparable to that of comparator country groups, such as lower-middle income countries. It is also noteworthy, that Kyrgyzstan seems to be one of the few former Soviet republics which did not achieve the turnaround in the MVA per capita development after the transition recession which is observable in most of these countries, including Armenia, Kazakhstan, Moldova and Uzbekistan. A glance at the developments in South East Asian lower-middle income countries demonstrates again how the dynamics of MVA per capita looks-like in countries experiencing a manufacturing-led growth take-off.

Putting the economy on a manufacturing-led growth trajectory is also warranted in Kyrgyzstan as manufacturing has been the prime driver behind inclusive and sustained growth episodes in other countries. One of the major reasons for this pattern are the strong forward and backward linkages so that additional activity in a manufacturing industry does not only create employment and demand in that particular industry but also in many related industries, including business related

services such as transportation, information and telecommunication services and professional services. Moreover, manufacturing is less prone to overshooting and the creation of bubbles which are a recurrent feature of the financial and the construction sector. For these reasons manufacturing-led growth does not only tend to be more inclusive but also increases the probability of sustained growth episodes.

A key issue for the country is therefore to enlarge and diversify its manufacturing base, thereby reducing its overreliance on gold production. Diversification would support job creation in manufacturing as the metallurgy sector is very capital intensive, creating comparatively fewer employment opportunities. It also features fewer linkages to the rest of the economy as compared to other manufacturing industries with an export potential in Kyrgyzstan, such as textiles, garments and food processing. Moreover, as Chapter 2 illustrates, the overreliance on gold production makes the economy emission and material intensive with limited dividends for social inclusiveness. A second pressing reason why a diversification of manufacturing production is imperative is the fact that Kumtor's current mine-life extends only until 2023, with processing operations continuing until 2026 (Eurasian Research Institute, 2015; UNCTAD, 2016). If export revenues from gold production were to end according to this schedule[46], this leaves a window of opportunity of less than 10 years to implement a successful industrial development strategy. For this to happen, the key factors that hold back Kyrgyzstan's export development need to be analysed.

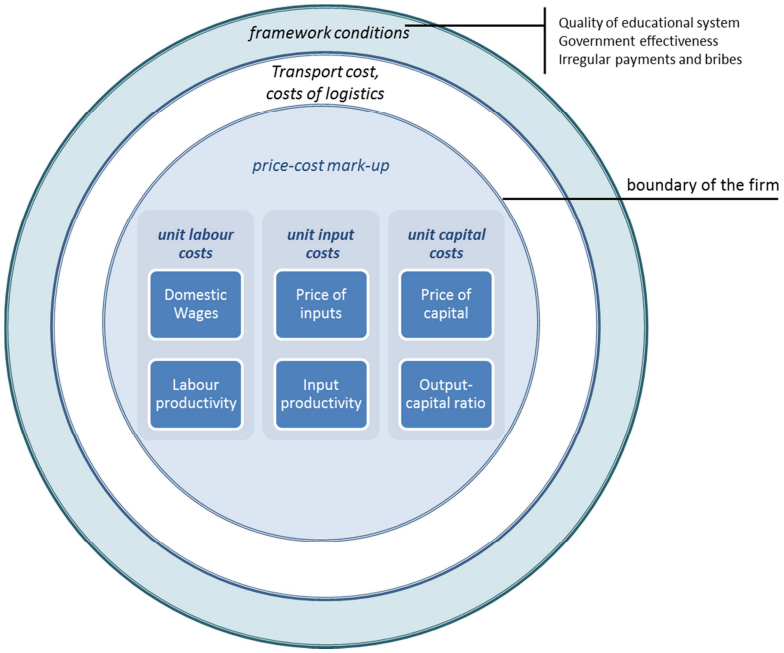
1.6. Analysis of Kyrgyzstan's Cost Competitiveness

Limited domestic demand calls for an export-led growth strategy. For Kyrgyzstan as a small open factor-driven economy[47] cost competitiveness is of key importance. Since the domestic market is too small to provide the necessary demand to achieve the least efficient scale of production in many manufacturing industries. This is a major point as insufficient aggregate demand (and not only supply side constraints) may well limit the long-term economic performance of an economy (Nassif et al., 2017; Szirmai and Verspagen, 2015). For this reason international cost competitiveness is of critical importance. To analyse Kyrgyzstan's cost competitiveness in more detail, it is decomposed into its individual components (see Kahn, 2013). These components are unit labour costs, unit input costs, unit capital costs and the price-cost mark-up (Figure 1-23).

[46] According to information obtained from Kumtor, the current schedule for the mine's remaining life may be pushed backwards depending on the outcome of further explorations. However, since it is not guaranteed that further explorations will reveal gold reserves that make further operations commercially viable, the year 2026 is a conservative estimate for the end of the Kumtor mine operations. In any case, the new mines of Taldy-Bulak (Chinese joint venture) and new projects (e.g. Ishtamberdy, Solton-Sary, Terek and Terekkan) are not capable of fully replacing Kumtor.

[47] In terms of population Kyrgyzstan is a medium-sized country but it is a small economy in the sense that it is incapable of influencing world prices.

Figure 1-23: Cost decomposition



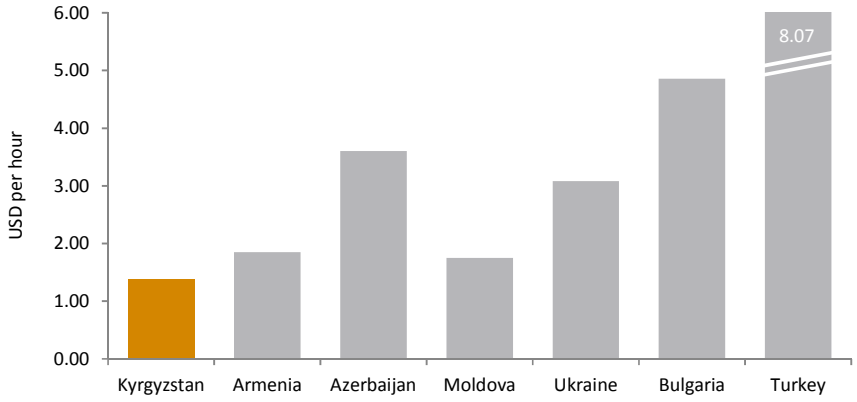
Note: Firm-internal decomposition according to Kahn (2013); cost components beyond the boundary of the firm are added.
Source: Kahn (2013), wiiw representation.

The sum of all cost components, augmented by the mark-up, determines the internal cost competitiveness of firms. It is the result of activities and processes within the boundary of the firm. For each factor of production (capital, material inputs and capital) these cost components can be separated into a price-related element – wages, input cost and the cost of capital (interest rate) on the one hand and a productivity-related element. Each of these elements needs to be scrutinised with a view to achieving international cost competitiveness. Besides the within-firm elements, international cost competitiveness also depends on the general framework conditions (discussed in section 1.5). While the framework conditions are typically beyond the control of firms, they should fulfil some minimum standards in order not to jeopardise firms' efforts to achieve international competitiveness. The factors include for example transportation and logistics costs and costs related to framework conditions such as import tariffs faced or bribes to be paid at customs control. International cost competitiveness is given if total costs, including profits and the cost elements beyond the control of individual firms, are equal to or lower than world market prices. Given that the framework conditions have already been discussed, the focus in this section is set on the firm-internal costs elements.

The cost decomposition reveals that Kyrgyzstan's competitiveness problem stems primarily from low levels of productivity (respectively output-capital ratios). This can best be shown for the

factor labour. Based on available information on labour costs, the wage level in Kyrgyzstan is found to be very low compared to, for example, Armenia or Moldova (Figure 1-24).

Figure 1-24: Labour costs in selected countries

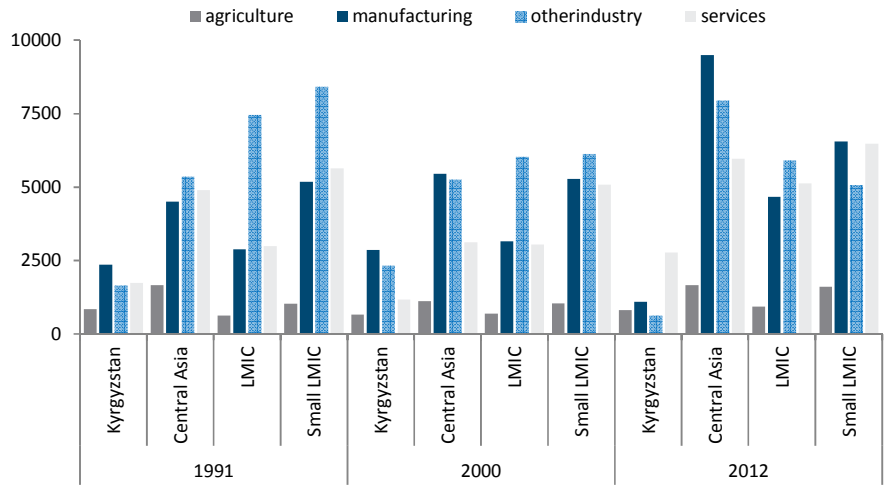


Note: Kyrgyzstan, Bulgaria: 2016, Armenia: 2014, Azerbaijan: 2015; Moldova: 2015; Ukraine: 2010; Turkey: 2012; wiiw calculations.
Selection of countries according to data availability.
Source: ILO database, National Statistical Committee of the Kyrgyz Republic.

Low labour productivity erodes advantages arising from low labour costs. This suggests that the wage rate is highly competitive (see also UNCTAD, 2016) despite the fact that wage progression was much faster than labour productivity growth over the past decade. An advantage with regards to labour cost for Kyrgyzstan can also be identified in important export industries such as textiles and wearing apparel[48]. In principle, this puts the country in a favourable position since at its current income level it is supposed to hold (at least latent) comparative advantages in labour intensive industries such as food-processing and beverages, textiles and wearing apparel. At the same time this favourable condition is eroded by very low labour productivity. Real labour productivity is particularly low in the manufacturing sector which is where it matters most because it should be the country's main tradable goods-producing sector. However, in Kyrgyzstan real labour productivity in manufacturing is lower than in the services sector on average which is in contrast with the situation in other LMIC. Moreover, labour productivity in manufacturing has deteriorated markedly over time. In 2012 real labour productivity was only a fraction of that in small LMIC and only half of that in Moldova and four times lower than that in poorer Tajikistan.

[48] For more details see Chapter 3.

Figure 1-25: Sectoral labour productivity, comparison across LMIC, 1991-2012



Note: Real labour productivity in constant 2005 USD.
Source: UNIDO database.

Low input productivity and output-capital ratios add to the lack of cost competitiveness. An analysis similar to that of labour inputs can be made for the other cost elements though internationally comparable data is not available. But anecdotic evidence suggests that also for the other cost elements (material inputs and capital) Kyrgyzstan's major problems lie above all in the productivity-related factors (Table 1.2). For example, the input efficiency is low because often the output produced cannot be sold, due to various reasons such as insufficient quality or lack of demand. This suggests that there are serious shortcomings in planning and marketing capacities on the side of firms.

Table 1.2: Assessment of individual elements for Kyrgyzstan's cost competitiveness

Domestic wages	Low by international comparison
Labour productivity	Extremely low by international comparison
Price of inputs	Sector specific; but due to open trade regimes necessary inputs are available at world market prices plus transportation cost
Input productivity	Extremely low because of insufficient managerial and technological skills
Price of capital	Varies across industries and firm size; general interest rate is high (≈20-30% p.a.) but subsidised loans are available for special industries (e.g. textiles) at 5% p.a.
Output-capital ratio	Output-capital ratio fluctuates with capacity utilisation and is low if demand is seasonal or simply too low compared to the minimum efficient scale of production.
Cost mark-ups	Sector-specific but in general the level of competition is relatively low which can be seen from rather pronounced price differences for identical product.

Note: Main bottleneck; Issue of concern at least in some industries; No or minor problem.
Source: Firm internal decomposition according to Kahn (2013), wiiw representation.

There are important connections between the individual cost components. For example, the fact that investment in machinery and equipment is low implies that capital-intensity is low and workers have to use outdated machinery and equipment which are prone to break-downs. This in turn, while improving the output-to-capital ratio in a static perspective, aggravates the labour productivity problem over time.

Insufficient technological and managerial skills lead to limited scale of production and low productivity. This constellation, in which the productivity-related elements are the main bottlenecks for international cost competitiveness, is a common phenomenon in developing countries (Kahn, 2013). What this means is that even if the same machinery and equipment were to be used and even if the workforce was equally skilled and the quality of material inputs comparable to advanced economies, developing countries would still have a non-competitive cost structure. The disadvantages in labour and input productivity in fact are often prohibitively high so that the country obtains cost competitiveness in basically no manufacturing industry. As demonstrated, this seems to be applicable to Kyrgyzstan outside the realm of gold processing. The low productivity is largely caused by the fragmented, small scale of production. The lack of sufficient technical and managerial skills including the capacity to plan ahead and organise a firm's entire value chain have so far limited the expansion of production. Shortcomings in these skills lead to inefficient processes and critical gaps in the supply chain. To a large extent, the required skills and capabilities represent tacit knowledge that workers can only acquire during the production process itself through learning by doing (Kahn, 2013). Codifyable knowledge (obtained by formal training) is important too so that the education system and in particular vocational education can make a difference. Nevertheless, tacit technological and managerial knowledge of workers and managers, which are necessary to implement efficient work routines, are essential.

Obtaining international cost competitiveness requires support measures. The dilemma for Kyrgyzstan is that acquiring the necessary skills and capacities obtained through learning-by-doing requires production before international cost competitiveness has been achieved. For this reason temporary loss-financing, i.e. covering the difference between current production costs and internationally competitive prices, is necessary until international competitiveness is reached. Financing may be provided by public sources or by foreign investors. The latter may find it attractive to engage in temporary loss financing in return for expected high profits ('economic rents') in the future. Such a foreign-led strategy obviously needs the full commitment from government because learning processes are complex and may fail to materialise or can be retarded due to numerous contracting failures. Contracting failures that hold back learning progress include situations where entrepreneurs, when acting as first movers, cannot appropriate the full benefit from their 'discovery process' (Hausmann and Rodrik, 2003) initiated with the investment or because of low incentives for learning efforts (Kahn, 2013). Still, given the low state capacity, an industrial strategy that is at least supported by FDI inflows appears as the most promising scenario. For such an FDI-led industrial development strategy to be successful, the government must signal its full commitment to potential investment projects. Moreover, it has to ensure that the business environment is perceived at least acceptable by foreign investors.

While official development assistance typically plays a secondary role for industrial development, the comparatively high rate of foreign aid money per capita (USD 129) indicates that international donors contribute significantly to both public and private investment. Therefore, in the particular case of Kyrgyzstan, international donors too can play an important role in a learning-based strategy as demonstration projects can partly remove the first-mover problem.

Resource constraints necessitate setting priorities. A key issue in the context of an industrial development strategy is the selection of priority industries. With a view to obtaining cost competitiveness, a modest strategy aiming at labour-intensive industries is warranted. This is the case, because the factor price elements (wages, price of inputs and price of capital) in the cost decomposition are of different importance across industries. Obviously, the cost share attributable to wages is more important in labour-intensive industries than in capital- and technology-intensive industries. For this reason the period of cost financing can be expected to be lower in labour-intensive industries. In other words, the gap that needs to be closed in order to obtain international cost competitiveness is lower. This is all the more important for Kyrgyzstan has only very limited fiscal leeway. In addition, foreign investors will find an industrial strategy that is in line with – at least – latent comparative advantages of the country more convincing than an overly ambitious government programme with only slim chances of success.

Chapter 2 argues why the development of labour intensive industries is crucial for Kyrgyzstan from the perspective inclusive and sustainable growth.

Appendix

Appendix Table A1: Central Asia: Overview of economic fundamentals, 2016

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
Territory [1]					
Land area, km[2]	2,699,700	191,800	139,960	469,930	425,400
Population					
Population, mn pers., average	17.8	6.1	8.7	5.7	31.8
Real economy					
GDP, USD bn	135.0	6.6	7.0	36.2	67.2
GDP real growth, in %	1.0	3.8	6.9	6.2	7.8
GDP per capita, USD at PPP	25,300	3,600	3,000	16,900	6,500
Consumption of households, in % of GDP	53.1	87.4	81.7 [2]	10.7 [3]	60.3
Government consumption, in % of GDP	11.8	18.3	15.0 [2]	9.0 [3]	15.8
Gross capital formation, in % of GDP	33.4	33.3	38.9 [2]	49.8 [3]	24.8
Exports of goods and services, in % of GDP	33.4	35.3 [2]	10.3 [2]	74.2 [3]	20.6
Imports of goods and services, in % of GDP	38.8	75.8 [2]	43.3 [2]	44.0 [3]	21.5
Industrial production, real growth, in %	-1.1	4.9	16.0	.	6.6
Agricultural production, real growth, in %	5.4	3.0	5.2	.	6.6
Capital investment, real growth, in %	3.0	3.8	20.3	0.4	11.8
Consumer prices, growth rate, in %	14.6	0.4	6.1	6.2 [4]	5.7 [4]
Labour market					
Employment (LFS), mn pers., average	8.6	2.4 [2]	2.4 [2]	.	13.3
Unemployment rate (LFS), in %	5.0	7.6 [2]	2.4 [2] [5]	.	.
Average monthly gross wages, USD	416	212	143 [2]	362 [2]	.
External sector					
Exports of goods, USD bn	36.8	1.5	0.9 [2]	14.0 [2] [6]	10.0 [2] [6]
Imports of goods, USD bn	35.3	3.9	3.4 [2]	8.0 [2] [6]	11.5 [2] [6]
FDI inward stock, in % of GDP	96.1	77.9	34.7	100.2	13.5
FDI inward stock per capita in USD	7,333	839	276	6,358	282

Note: PPP: Purchasing power parity. LFS: Labour Force Survey.

1) Land area refers to the total area of a country excluding area under inland water bodies. It differs from the country area that includes area under inland water bodies, but excludes offshore territorial waters (UNCTADstat). - 2) Data for 2015. - 3) Data for 2014. - 4) December to December of previous year. - 5) Unemployment rate by registration. - 6) UNCTAD estimates.

Sources: wiiw Annual Database incorporating national statistics, World Bank, CIS Stat, UNCTADstat, wiiw calculations.

2. Industries for inclusive and sustainable development

Making formal job creation a priority. The first chapter underscored the importance of strong and inclusive growth for Kyrgyzstan as the country faces a relatively high level of poverty with a large number of potentially vulnerable people, large share of informal employment in the economy, and a high unemployment rate especially among young people, who often go abroad to find a job. To overcome such socio-economic challenges, the foremost priority for the country's industry development should be to create a large number of formal manufacturing jobs, which could absorb surplus labour from agricultural and informal sectors to boost the productivity of the economy as a whole and increase productivity and wages of workers.

Focus on key manufacturing industries to improve the sectors lagging performance. The Kyrgyz manufacturing sector has had a disappointing performance since the country's independence. It has trailed behind countries at a similar income level and in the same region. To depart from the past developmental path and to make manufacturing contribute to inclusive growth, it is crucial for the country to focus on key sectors which are promising in terms of growth potential and employment creation, taking the country's development conditions into consideration. To identify such manufacturing industries, the following questions will be addressed:

- In which industries has Kyrgyzstan been increasing export competitiveness in recent years?
- At its current development stage, which industries are likely to grow fastest in Kyrgyzstan in terms of value added and employment creation?
- How is Kyrgyzstan performing in the industries in which the country is supposed to have a comparative advantage?
- How many jobs could Kyrgyzstan create if the country increases its production volume to the average its peer countries in terms of income or to a level of a successful country, Honduras, which is at a similar development stage?

Taking evolving and endowment-based comparative advantages into account. Analysing the above questions could point to the industries in which Kyrgyzstan is likely to have advantage due to its current endowment structure according to the income level and demands for key trading partners.. Discussion in Section 2.2 will focus on such industries. Besides comparative advantage, there are country-specific advantages, which arise from a country's demographic and geographic characteristics. On this point, Section 2.3 argues for the development potential of the Kyrgyz hydropower sector for sustainable growth due to the country's abundant water resources.

Once the core set of industries are determined, the next chapter will provide a detailed analysis at the firm level in order to find key bottlenecks, which are preventing the industries from realizing their development potentials.

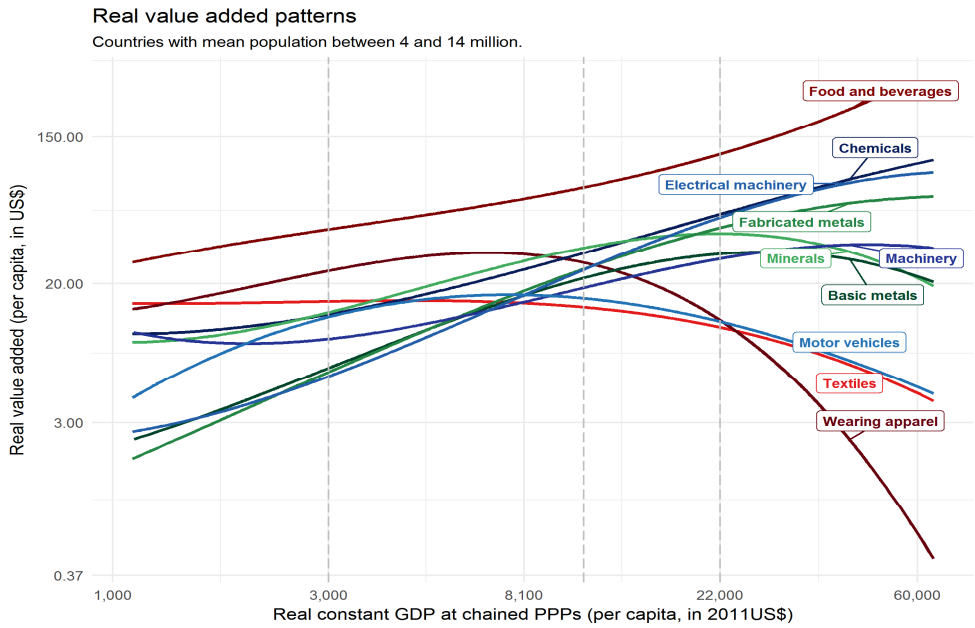
2.1. Strong growth and inclusive development

2.1.1. The structural change perspective of development

The role of income levels and country size. A country at a certain development stage does not have equal development potential across different manufacturing industries. A country's supply capabilities, including skills, access to capital, infrastructure, research and development and institutional quality, and demand or consumption patterns shift as income increases. Looking at the development patterns of manufacturing industries, it is possible to identify the industries in which countries are likely to have comparative advantage (Haraguchi, 2016b). As country-size in terms of population tends to affect development patterns (Taylor, 1969), the following analysis illustrates the patterns of countries with population from 4 to 14 million, to which Kyrgyz Republic belong.

Food, beverages and textiles are kick-starters of industrial development. As seen in Figure 2.1, at low and lower middle income levels, countries have advantages in food and beverages, textiles and wearing apparel industries. Below 4,000 GDP per capita, which is Kyrgyzstan's income bracket, food and beverages and wearing apparel industries not only have high value added levels, but their growth rates are quite comparable to other industries. Even though the textile industry does not show much development potential this size group, the wearing apparel industries usually remains the biggest industry next to the food and beverage sector, up to around USD 7,000 GDP per capita. The food and beverages industry is always important in terms of contributions to a country's value added, employment and demand for agricultural products. For sustained growth of the industry, it is therefore crucial to promote structural change within the industry as a country's supply capabilities and consumption patterns change. It should be noted that countries with population between 4 and 14 million like Kyrgyzstan do not usually have a comparative advantage in the motor vehicle industry (including parts production), which, in the case of large countries, has a potential to become one of the biggest industries at a high income level. Smaller domestic markets in medium or small countries do not nurture the industry, for which scale economy is important. In addition, multinational corporations tend to build manufacturing and assembling plants in large countries and make them a regional hub to serve smaller countries in the region through exports.

Figure 2-1: Real value added patterns by industry along countries' economic development



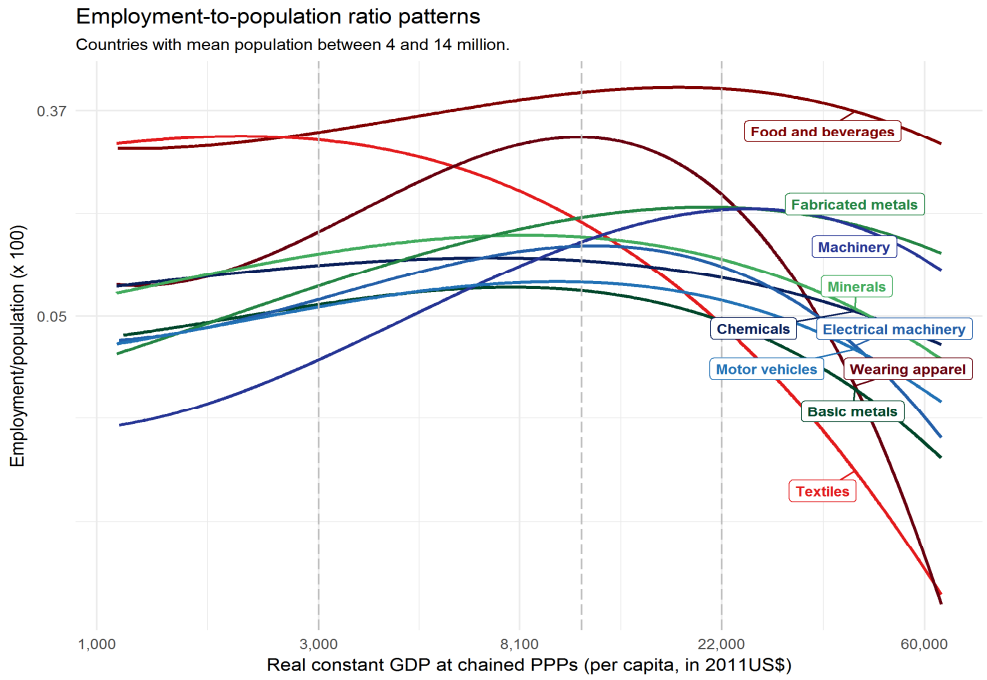
Source: UNIDO

The employment pattern for this size group shows that the food and beverages, textiles, and wearing apparel industries are the three major sources of formal manufacturing employment at least up to an income level of around USD 10,000 GDP per capita. The food and beverages industry is relatively domestically-oriented with a large share of a country's final output consumed in the domestic market. Thus, the development of the food and beverages sector is more predictable as the industry tends to increase value added and employment as income rises. In contrast, the expansion of the wearing apparel industry hinges on the penetration of foreign markets, especially in the case of small and medium-size countries, to realize the potential of value added and employment increases as illustrated in Figure 2-1 and Figure 2-2. So the competitiveness of the wearing apparel industry is an important indicator for a successful industrialization at low and lower middle incomes.

Automation does not fundamentally alter industrial development patterns. There is an increasing concern that robots and capital intensive equipment would replace workers in the food and beverages, textiles and wearing apparel industries in the future and that they will not generate a large number of formal jobs as they used to do in the past. However, automation is likely to have much less impacts on jobs in light industries than transport equipment, electrical machinery and resource-based industries (Hallward-Driemeier & Nayyar, 2017; UNCTAD, 2017). Nevertheless, it is important for countries to lay the solid foundations for the development of resource-based and high-tech industries for gradual diversification and upgrading of industrial

structure because countries tend to experience a rapid decline of value added and employment in the wearing apparel industries once they lose cost competitiveness due to increased wages after reaching a upper middle income level.

Figure 2-2: Employment-to-population ratio patterns



Source: UNIDO

At a further disaggregated level of industries, there are too many industries to analyse the development patterns graphically. Based on the same concept of graphical illustrations, at four-digit level of International Standards Industrial Classification (ISIC), high performing industries in terms of value added, employment and exports are identified for the income range from USD 2,500 to USD 4,500 GDP per capita which is currently relevant for Kyrgyzstan and also in the near future. 150 industries are ranked by the level of value added and checked with “xx” if they are top 30 industries also in terms of employment generation and checked with “xxx” if they are top 30 industries in terms of all value added, employment and exports.

As seen in Table 2.1, in this income range, a variety of food and beverages, wearing apparel, mineral and wood-related industries tend to reach high levels of value added and also generate a large number of formal jobs. The first four industries in this ranking also usually enjoy high export performances in this income range. The development of wood-related industries, however, depends on the country-specific conditions of the resource availabilities.

Table 2.1: Industries with the high potentials of value added, employment and exports (for income range between 2,500 and 4,500 GDP per capita)

1511	Processing/preserving of meat	xxx
1810	Wearing apparel; except fur apparel	xxx
2010	Sawmilling and planing of wood	xxx
3610	Furniture	xxx
1541	Bakery products	xx
1553	Malt liquors and malt	xx
1531	Grain mill products	xx
2101	Pulp; paper and paperboard	xx
2221	Printing	xx
2695	Articles of concrete; cement and plaster	xx
2102	Corrugated paper and paperboard	xx

Source: UNIDO

2.1.2. What export performance and comparative advantage indicate

Comparative advantages exist in labour-intensive and some resource-based industries. The revealed comparative advantages (RCA) of Kyrgyzstan in 2015 (Table 2.2) shows that the country indeed has demonstrated its advantages in many food and beverages, textiles and wearing apparel products relative to other manufactured products. It shows also advantages in some non-metallic mineral products. Many of these products are used as construction materials, and demand for such products tend to change along the expansion of the domestic economy. Thus, the development of the non-metallic mineral industry is much more predictable than export-oriented industries like the wearing apparel industry, which needs to develop international competitiveness in order to reap its value added and employment creation potential.

Table 2.2: Revealed Comparative Advantage of Kyrgyzstan in 2015

RCA 2015	description
12.0	Natural, cultured pearls; precious, semi-precious stones; precious metals
9.9	Vegetables and certain roots and tubers; edible
4.8	Ores, slag and ash
4.3	Cotton
4.3	Tobacco and manufactured tobacco substitutes
3.6	Raw hides and skins (other than fur skins) and leather
3.6	Dairy produce; birds' eggs; natural honey; edible products of animal origin
2.9	Salt; sulphur; earths, stone; plastering materials, lime and cement
2.6	Glass and glassware
2.5	Fruit and nuts, edible; peel of citrus fruit or melons
2.2	Aircraft, spacecraft and parts thereof
2.2	Vegetable plaiting materials; vegetable products
2.0	Apparel and clothing accessories; not knitted or crocheted
1.9	Apparel and clothing accessories; knitted or crocheted
1.8	Silk
1.7	Lead and articles thereof
1.2	Stone, plaster, cement, asbestos, mica
1.1	Animal originated products
1.1	Commodities not specified according to kind
1.1	Preparations of cereals, flour, starch or milk; pastry cooks' products
1.1	Copper and articles thereof

Source: UNIDO

Given both the forward-looking potential based on industrial development patterns for the income range of Kyrgyzstan's near future and backward-looking assessment of the country's past export structure (RCA), the country could have strong development potential in the broad categories of the food and beverages, textiles, wearing apparel, non-metallic mineral and also perhaps basic metal industries. Among these, the non-metallic mineral industry tends to expand as the country's income increases because demand for the industry mainly comes from the domestic market. The basic metals industry is one of a few already successful manufacturing industries relative to the average performance of similar income countries. However, the industry is capital intensive and has limited potential of job creation with high material intensive production process posing an environmental risk.

Food and beverages as well as textiles and wearing apparel industries score high in terms of job creation and inclusiveness. Due to the relatively small size of the country and importance of inclusive development and job creation, the priority industries of Kyrgyzstan should be those with high potentials of job creation and export growth. With a view to both growth and inclusiveness, the food and beverages, textiles and wearing apparel industries should be given priority in the country's industrialization efforts. Rapid growth of these priority industries could create a large

number of formal manufacturing jobs, increase consumption, expand tax revenue for the government, and increase investments in infrastructure and education, which could lay the solid foundation for the growth of other manufacturing and related-service industries to facilitate structural change and the catch-up of the Kyrgyz economy.

Low wages and a young labour force could be assets for achieving cost competitiveness. Being labour-intensive, cost competitiveness would be a decisive factor for success in these industries. Kyrgyzstan's competitive wage level and abundant trainable labour force already provide the country with distinct advantage, which are not available in many countries, especially those with a higher GDP per capita. This means that, in such industries unlike in the cases of electronics, machinery and motor vehicle industries, the country does not need to compete with industrialized countries, which have already lost competitiveness in textiles and wearing apparel industries. Kyrgyzstan's competitors will be the countries at a similar income level and with similar industrial development capabilities, which gives Kyrgyzstan a higher possibility of success. Countries with recent experiences of rapid industrialization have rarely shown sudden changes in economic structure, leap flogging from an agrarian economy to the one driven by capital-intensive or high-tech manufacturing industries (Haraguchi, 2016a). Successful countries, which have significantly reduced poverty, improved the welfare of citizens and modernized the economy in a relatively short period of time, have scored an initial success in export-oriented light manufacturing industries and invested in infrastructure and human capital for industrial upgrading (e.g. Republic of Korea, Mauritius, China, and Vietnam and before them most of industrialized countries like the United Kingdom and Japan). Thus, speeding up industrialisation and fast improvements of living conditions is possible, but development strategies need to take a structural change perspective, considering country-specific conditions and comparative advantage.

2.1.3. Identifying the potential of the strategic industries

After having identified the Kyrgyz food and beverages, textiles and wearing apparel industries as the strategic industries, the next step in the analysis consists of quantifying their growth potential based on current value added generation and employment.

Switching from relative to absolute performance measures. Revealed comparative advantage shown above is a relative measure as it is based on a comparison between the trade structures of a country and the world as a whole. Thus, unless a country has exactly the same trade structure as the world, it has always comparative advantages in some products regardless of the country's actual performance in the production of such products relative to other countries. It does not mean that Kyrgyzstan's actual performance in exporting the above products in Table 2.2 are superior to those of other countries. If the country's manufactured exports are less competitive across the board, the RCA might show the products whose export performances are not as bad as that of others.

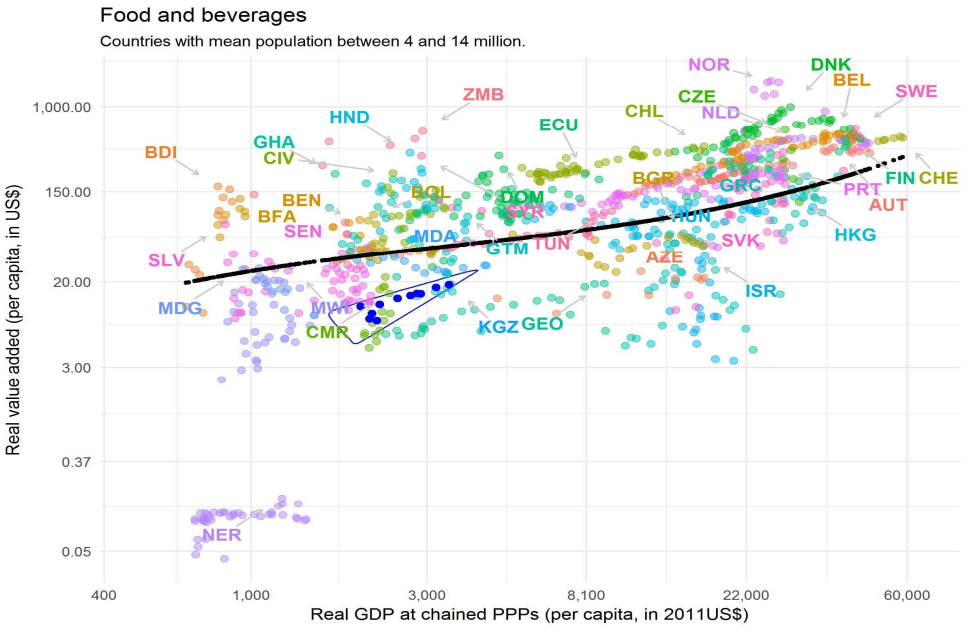
When switching to a more objective performance measure of industries based on absolute output or employment, the following considerations have to be taken into account:

- Value added rather than gross output should be used as the latter could include value added generated by other industries or by foreign producers.
- Value added of an industry's production rather than of exports should be looked at because only part of an industry's output is exported.
- For comparison across countries, value added per capita should be used to take differences in country size into consideration.
- Finally, value added per capita of an industry should be compared among countries at a similar income level.

Food and beverages

Value added generation of food and beverages shows a promising trend but is still underperforming. Based on the above, Figure 2-3 shows the performance of the Kyrgyz food and beverages industry with blue dots in a circle relative to the average of the size group with population from 4 to 14 million (black line) and other countries in the group. Kyrgyzstan is following the development pattern of the industry with a negative deviation from the expected level. It is underperforming relative to the same industry of countries at similar income level, such as Moldova, Honduras, and Côte d'Ivoire. In the same income group, only a few countries (e.g. Cameroon and Georgia) have lower performances than Kyrgyzstan. At the income level of Kyrgyzstan, on average the industry's value added should be twice as large as the current level.

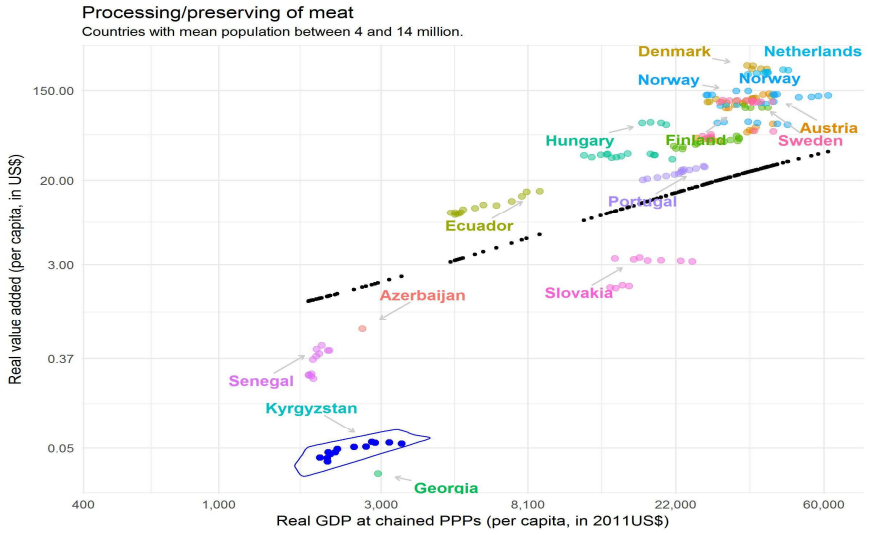
Figure 2-3: Real manufacturing value added per capita of the food and beverages, international comparison



Source: UNIDO

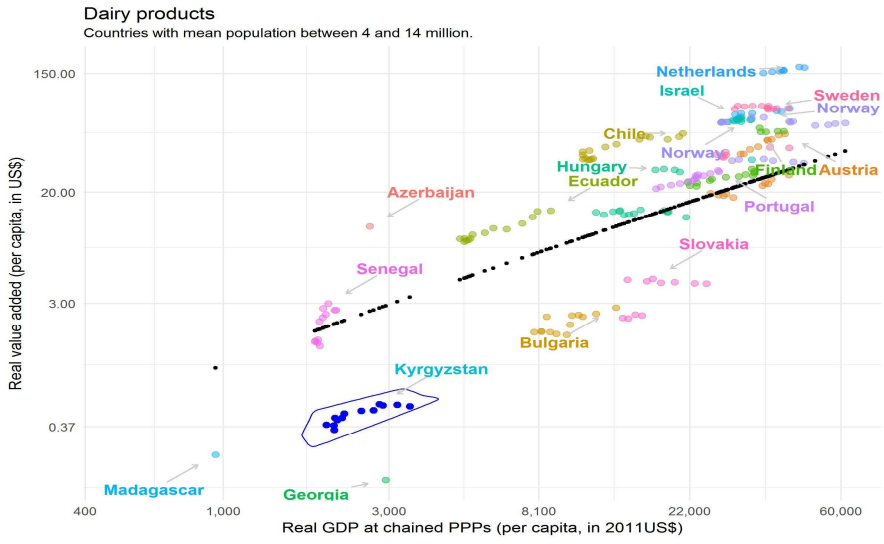
Even looking at some specific products in the list of the county's comparative advantage indicates that Kyrgyzstan's performance is much lower than the level expected at the country's development stage. As seen in Figure 2-4 and Figure 2-5, the value added per capita of vegetables and fruits processing, and dairy products industries are lower than those of Senegal and Azerbaijan and far below the level expected at the country's income.

Figure 2-4: Real manufacturing value added per capita of fruit and vegetable processing, international comparison



Source: UNIDO

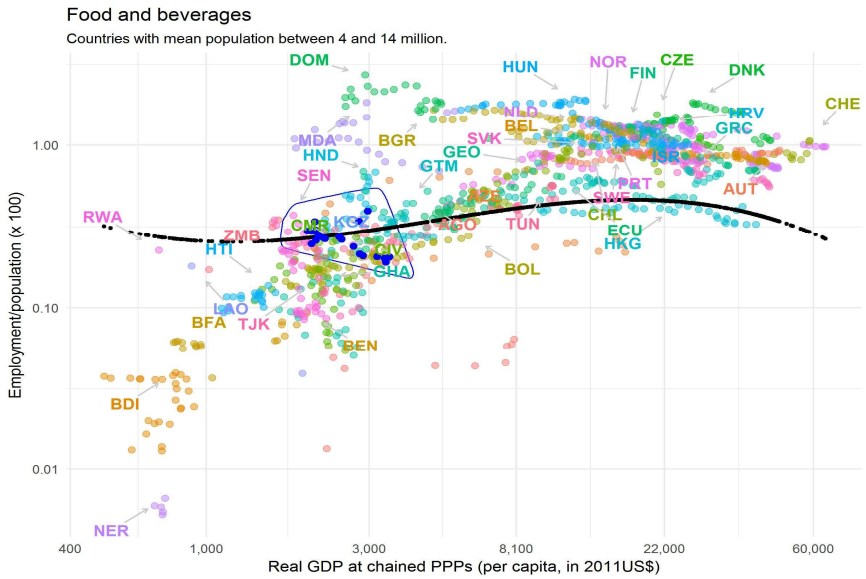
Figure 2-5: Real manufacturing value added per capita of dairy products, international comparison



Source: UNIDO

Formal employment has been decreasing. Consequently, the employment level of the food and beverages industry in Kyrgyzstan (Figure 2-6) is lower than in most of the peer countries and has been steadily decreasing since the mid-1990s. It is a serious concern for the county as the industry is usually the most important manufacturing industry in terms of both value added and employment across different income levels of countries in this size group. As such, a solid production and marketing foundation needs to be developed from the early stage of development for the industry's sustained, long-term growth.

Figure 2-6: Employment level in food and beverages, international comparison



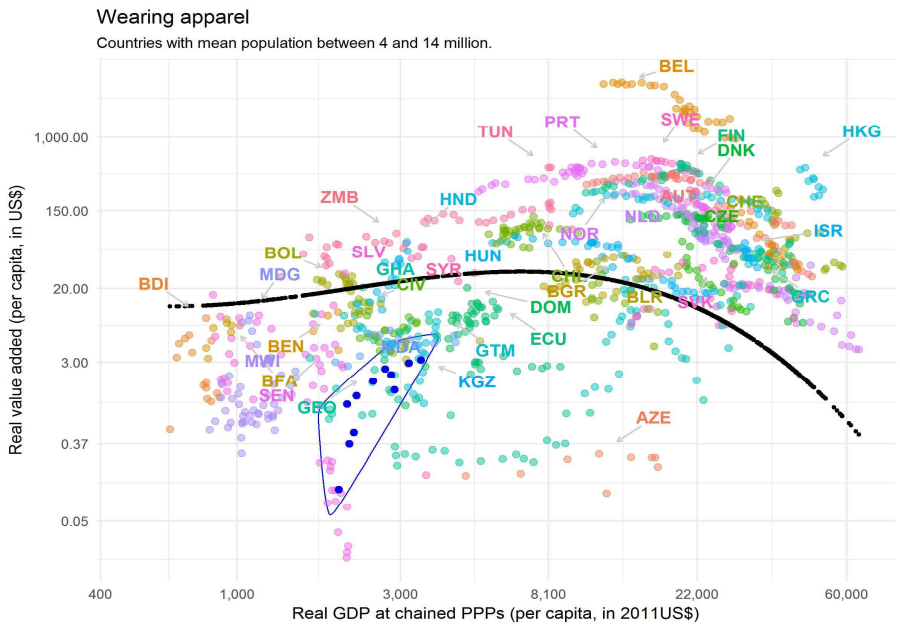
Source: UNIDO

Wearing apparel

Potential to octuplicate the value added in the wearing apparel industry. Within the textile and textile products industry group, the wearing apparel industry is currently far more important than the textile fabrics industry in Kyrgyzstan as seen in Figure 2-1 and Figure 2-2. The former has also higher growth and employment generation potential at the income level of Kyrgyzstan. Thus, here the analysis focuses on the wearing apparel industry. Kyrgyzstan has improved its performance in recent years. The value added of the industry increased over the last ten years. However, since the increase has started from an extremely low level, the current value added of the industry is still far lower than expected for the country's income level (Figure 2-7). At the current Kyrgyz income level, the wearing apparel industry could be eight times bigger to match the average of small lower middle income countries. In other words, there is still a large potential for the industry to grow if the country continues to improve its competitiveness.

Thousands formal jobs could be created if Kyrgyzstan were to emulate the success of its peers. The wearing apparel industry is usually one of the major sources of formal manufacturing employment until a country reaches an income level of around 9,000 USD. After achieving independence in the early 1990s, the Kyrgyz wearing apparel industry used to employ more workers than expected at the Kyrgyz income level in that period. As the collapse of the country's industrial base has proceeded in the 1990s, the size of the wearing apparel industry has shrunk significantly, and the number of workers employed in formal firms has decreased rapidly as seen in Figure 2-8. Currently 4,300 people are working in the industry. 77.3 per cent of them are informal employment. The level of formal employment in the Kyrgyz wearing apparel industry, 975 people, is the one of lowest in the countries at a similar income level (Figure 2-8). As seen in Figure 2-9, normally at that income, a country could employ 6.5 times more workers than the current level of Kyrgyzstan. If a country is successful in developing the industry like Honduras in the same income group, the industry could expand formal employment 60 fold or, in absolute terms, by up to 58,500 people. Given the country's past experience in higher level production and potential of the industry to create a large scale employment, the country needs to have a closer look at the factors, which led to the steady demise of the industry and prevents the industry from expanding. Chapter 3 will investigate the industry-specific conditions and firm-level constraints which have contributed to the underperformance of the Kyrgyz wearing apparel industry in comparison to counterpart industries in successful countries.

Figure 2-7: Real manufacturing value added per capita of wearing, international comparison



Source: UNIDO

Figure 2-8: Employment level in wearing apparel, international comparison

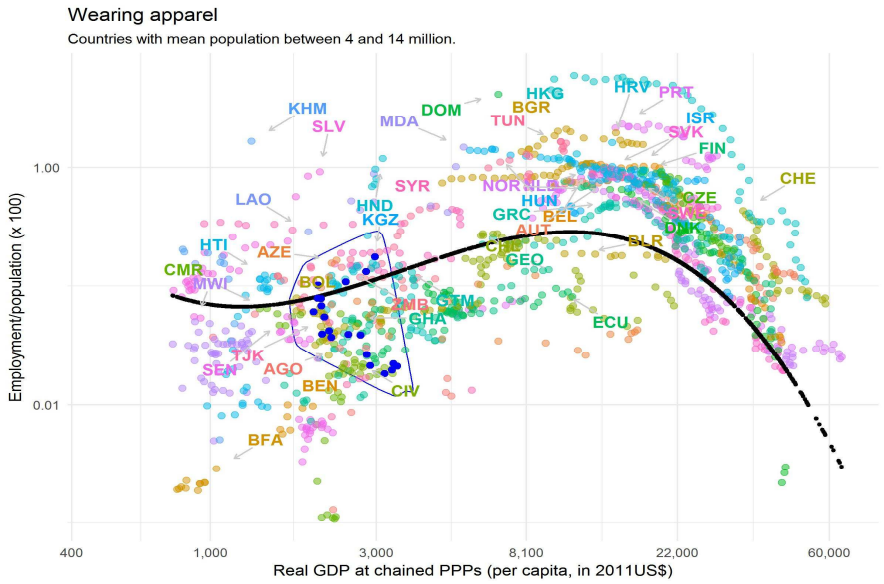
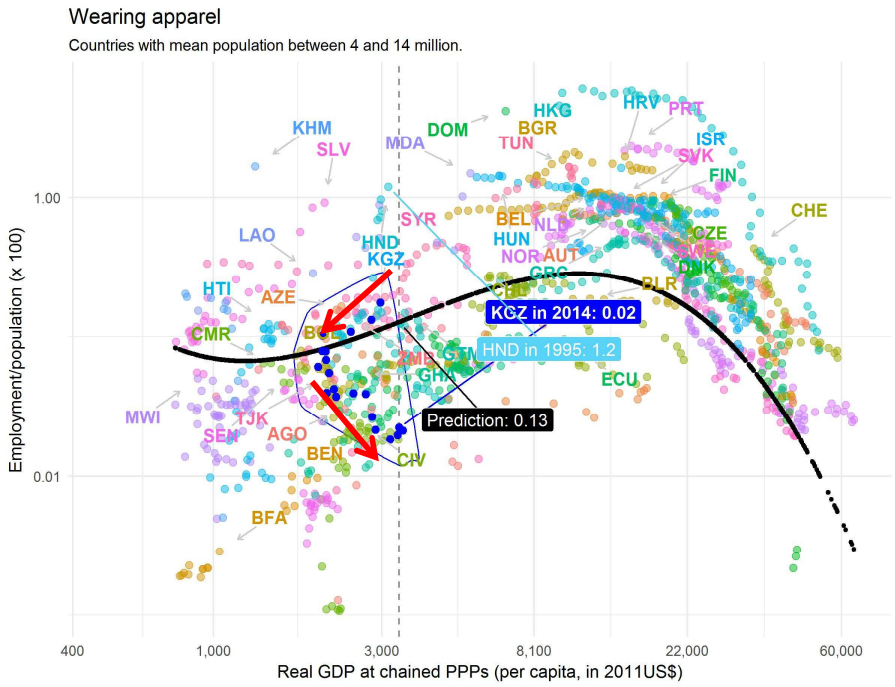


Figure 2-9: Actual and predicted employment level in wearing apparel in Kyrgyzstan



Source: UNIDO

2.1.4. Foreign demand for Kyrgyz products

The following Tables 2.3 – 2.10 show the origin of demand for Kyrgyzstan's major export products, in which Kyrgyzstan holds comparative advantages (see Table 2.2), and how much. By far, gold is the country's largest export, which is mostly sold to Switzerland. The future performance of this export is more likely to be dependent on continued availability of gold in the country more than anything else. Thus, here the analysis focuses on other industries with high development potential, which could be realized more by country and firm initiatives.

Export potential of mineral products appears to be limited. First of all, export values of non-metallic mineral products are much smaller than those of foods, textiles and apparel products. Generally, the mineral industry is domestically- oriented, and the demand for the industry's outputs tends to increase along with the expansion of domestic market. Often the bulky and heavy outputs of the industry tend to limit the exports to neighbouring countries. Compared with other industries, Kyrgyzstan's mineral exports share of the imports of the neighbouring countries is relatively high. As seen in Table 2.10 and Table 2.11, Kyrgyzstan is often ranked in top 5 exporters to the neighbouring countries. However, the export values are still small compared with the exports of other products. This seems to indicate that the potential of this industry to increase export revenues is limited relative to other products in which the country holds comparative advantage (Table 2.2).

Massive export potential to neighbouring countries for wearing apparel. In contrast, the exports of wearing apparel products present enormous potential. Just capturing around 0.5 per cent of the Russian market makes it one of the country's biggest exports in terms of export values (Table 2.8 and Table 2.9). Despite the high export values, the Kyrgyz market shares are ranked only as 15^{th} and 17^{th} in the non-knitted and knitted apparel and clothing accessories within Russian markets, respectively. This shows how much the country could increase exports if the industry became more competitive and could further penetrate foreign markets. Even in the case of the closer and smaller market of Kazakhstan, Kyrgyzstan's 1.7-1.8 per cent share in Kazakhstan's imports of wearing apparel products generated exports values more than 1.5 times larger than Kyrgyzstan's 4.5 per cent share in Kazakhstan's imports of glass and glass ware. The world demand for apparel products may not be growing as fast as for some high-tech products. However, the sheer size of world demand for apparel products gives this industry a huge potential for contributions to economic growth and employment generation. An increase of even half a per cent share in a foreign market makes a significant difference. This leads to the question of how Kyrgyzstan can improve the competitiveness of the wearing apparel industry which Chapter 3 will discuss in detail.

Lucrative export niches in agricultural produce thanks to foreign business practices. With regards to agricultural and agro-processing products, Kyrgyzstan is particularly successful in exporting vegetable products to Turkey, accounting for the four per cent of Turkey's imports of the products around the world (Table 2.3). This is largely explained by the exports of kidney beans by mainly Turkish exporting companies, which facilitate the exports working through Kyrgyzstan's supply chains (UNECE, 2015). This success should prompt the country to investigate whether it is

possible to replicate the success for the exports growth of other products driven by foreign companies.

In general, Kyrgyzstan has better presences in some imports of smaller neighbouring countries. A challenge for the country is to increase market share, even by a small margin, in large neighbouring countries like China, Russia and India and start exporting to distant developed economies. This would require a stable large scale production with consistency in product quality in order to meet large volume orders from customers and regulatory requirements.

Table 2.3: Kyrgyzstan's major import partners for trade in vegetables

Vegetables and certain roots and tubers; edible			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
Turkey	30345.360	3.92%	4
Russian Federation	10826.570	1.10%	10
Kazakhstan	4399.837	11.27%	2

Table 2.4: Kyrgyzstan's major import partners for trade in fruits and nuts

Fruit and nuts, edible; peel of citrus fruit or melons			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
Kazakhstan	10309.320	4.66%	5
Russian Federation	9343.939	0.36%	23
Turkey	883.413	0.13%	37

Table 2.5: Kyrgyzstan's major import partners for trade in dairy products, eggs and honey

Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
Russian Federation	11663.210	0.50%	13
Kazakhstan	10749.280	6.25%	3
China	605.632	0.02%	37

Table 2.6: Kyrgyzstan's major import partners for trade in cotton

Cotton			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
Turkey	10749.020	0.71%	14
Russian Federation	5798.804	2.29%	10
Uzbekistan	1060.382	19.99%	2

Table 2.7: Kyrgyzstan's major import partners for trade in hides, skins and leather

Raw hides and skins (other than fur skins) and leather			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
China	6917.960	0.13%	36
Turkey	133.334	0.09%	49
Tajikistan	4.255	35.21%	2

Table 2.8: Kyrgyzstan's major import partners for trade in apparel and clothing (not knitted or crocheted)

Apparel and clothing accessories; not knitted or crocheted			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share in Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
Russian Federation	20827.640	0.56%	15
Kazakhstan	13461.010	1.68%	6
Tajikistan	178.952	0.16%	6

Table 2.9: Kyrgyzstan's major import partners for trade in apparel and clothing (knitted or crocheted)

Apparel and clothing accessories; knitted or crocheted			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
Russian Federation	17484.060	0.54%	17
Kazakhstan	15714.910	1.80%	4
Tajikistan	575.291	0.20%	3

Table 2.10: Kyrgyzstan's major import partners for trade in construction materials

Salt; sulphur; earths, stone; plastering materials, lime and cement			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
Tajikistan	3846.741	56.20%	1
Uzbekistan	2686.660	6.70%	3
China	625.832	0.02%	48

Table 2.11: Kyrgyzstan's major import partners for trade in glass and glassware

Glass and glassware			
Major trading partners of Kyrgyzstan	Export values of Kyrgyzstan (US$ in 1000)	Share of Kyrgyzstan in import of trading partners (2016)	Ranking of Kyrgyzstan among exporters
Kazakhstan	9933.173	4.48%	4
Tajikistan	3589.206	16.68%	2
Uzbekistan	2397.570	5.43%	4

Source: UNIDO elaboration based on UN Comtrade.

2.1.5. Demands for Kyrgyz inputs in Global Value Chains (GVCs)

Kyrgyzstan's involvement in global and even regional value chains is limited. Exports volumes and the shares of Kyrgyzstan in trading partners' imports mask the real contributions of exports to Kyrgyzstan's value added because exports are expressed as gross outputs which include foreign value added entering in Kyrgyz exports as intermediate inputs. In contrast, value chain analysis looks at Kyrgyz value added in a particular value chain. Table 2.12 shows how little Kyrgyzstan participates in the value chains of its major trading partners. The country's biggest value added contribution is to Kazakhstan's exports. For example, if Kazakhstan completes production and exports final products of food and beverage value chains, Kyrgyzstan's value added accounts for the 1.5 per cent of that Kazakhstan's exported values. For the exports of final products by other countries, Kyrgyz value added accounts for less than one per cent. Especially, Kyrgyz participation in the exports of final products by China and Turkey is negligible.

Table 2.12: Per centage of Kyrgyz value added in the exports of main trade partners, 2014

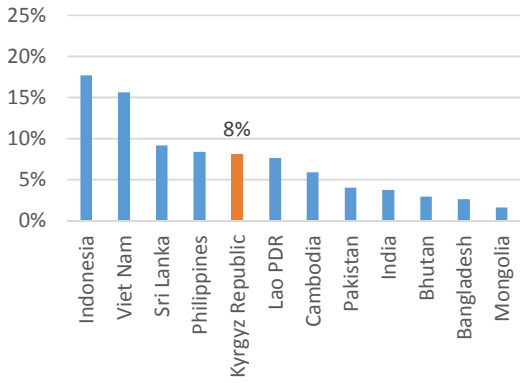
	Countries in which the Value Chains finalizes					
Foreign Sectors Value Chains	Kazakhstan	Pakistan	Russia	Mongolia	China	Turkey
Food, Beverages and Tobacco	**1.5%**	**0.0%**	**0.1%**	**0.1%**	**0.0014%**	**0.0017%**
Textiles Products	**1.1%**	**0.2%**	**0.0%**	**0.1%**	**0.0004%**	**0.0010%**
Leather, Leather and Footwear	1.0%	0.1%	0.0%	0.1%	0.0000%	0.0001%
Wood products	2.2%	0.0%	0.1%	0.0%	0.0000%	0.0001%
Paper products	1.3%	0.0%	0.1%	0.1%	0.0002%	0.0003%
Coke,refined petroleum	0.8%	0.1%	0.1%	0.2%	0.0013%	0.0017%
Chemicals	1.4%	0.0%	0.0%	0.1%	0.0020%	0.0029%
Rubber and plastics	1.6%	0.0%	0.1%	0.1%	0.0011%	0.0010%
Non-metallic mineral	1.1%	0.1%	0.2%	0.1%	0.0030%	0.0020%
Basic Metals and Fabricated Metal	0.6%	0.1%	0.1%	0.0%	0.0346%	0.0737%
Machinery, Nec	0.6%	0.1%	0.1%	0.1%	0.0010%	0.0018%
Electrical and Optical Equipment	0.6%	0.0%	0.1%	0.0%	0.0002%	0.0003%
Transport Equipment	1.4%	0.0%	0.0%	0.1%	0.0003%	0.0005%
Manufacturing, Nec; Recycling	0.3%	0.1%	0.1%	0.1%	0.0003%	0.0003%

Note: Textile products include both textile fabrics and wearing apparel.
Source: UNIDO calculations based on ADB Multi-Regional Input-Output data, 2017

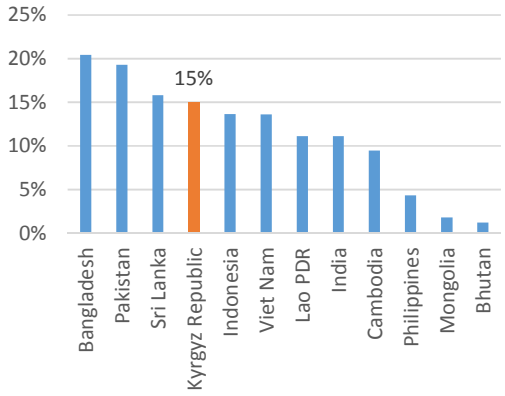
Even though Kyrgyzstan's GVC participation is limited as seen in the above table, still eight per cent of the food and beverages industry's value added and 15 per cent of the textiles products industry's value added came from GVC participation: i.e. the contribution of Kyrgyz value added to foreign countries' exports (Figure 2-10). This seemingly opposing picture indicates the total value added including value added from non-GVC sources, such as domestic final consumption, is small relative to other lower-middle income countries, pointing again to the county's weak production bases in these industries.

Figure 2-10: GVC participation 1 – Per centage of Kyrgyz industrial value added in foreign exports

A. Food, Beverages and Tobacco, in 2014



B. Textile Products, in 2014

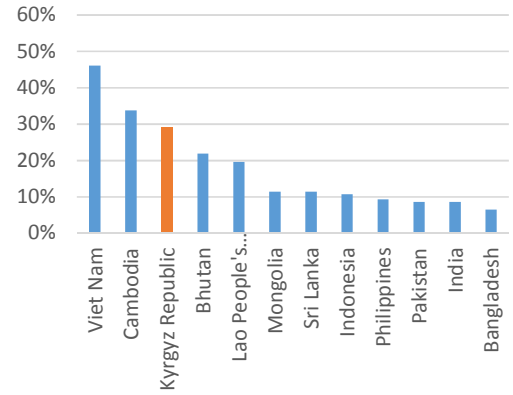


Note: Textile products include both textile fabrics and wearing apparel.
Source: UNIDO calculations based on ADB Multi-Regional Input-Output data, 2017

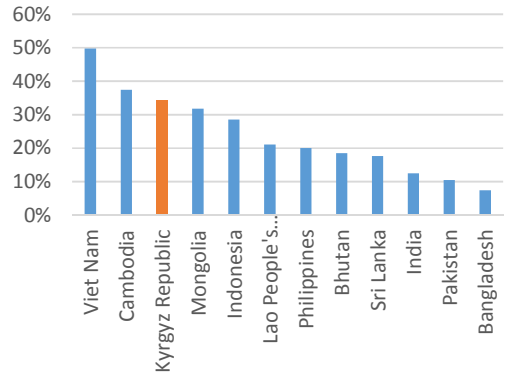
High foreign value added content in Kyrgyz exports reflect critical gaps in the domestic supply chains rather than strong inter-connections. GVC participation can be also assessed by the share of foreign value added in Kyrgyzstan's exports. As seen in Figure 2-11, for both food and beverages, and textiles industries, foreign content in the Kyrgyz exports are relatively high among Asian lower-middle income countries, reaching around 30 per cent. Vietnam and Cambodia, which have higher shares of foreign value added in their exports than Kyrgyzstan, have much higher export volumes of the two industries. As countries increase exports and upgrade their products, share of foreign value added in exports also tends to increase. However, Kyrgyzstan does not belong to this case. Even though the volumes of the country's exports in these industries are relatively small, already foreign value added shares are high. These results also confirm that Kyrgyzstan has limited domestic capacity to participate in the GVCs of these industries.

Figure 2-11: GVC participation 2 – Foreign value added in Kyrgyzstan's exports

A. Food, Beverages and Tobacco, in 2014



B. Textile Products, in 2014

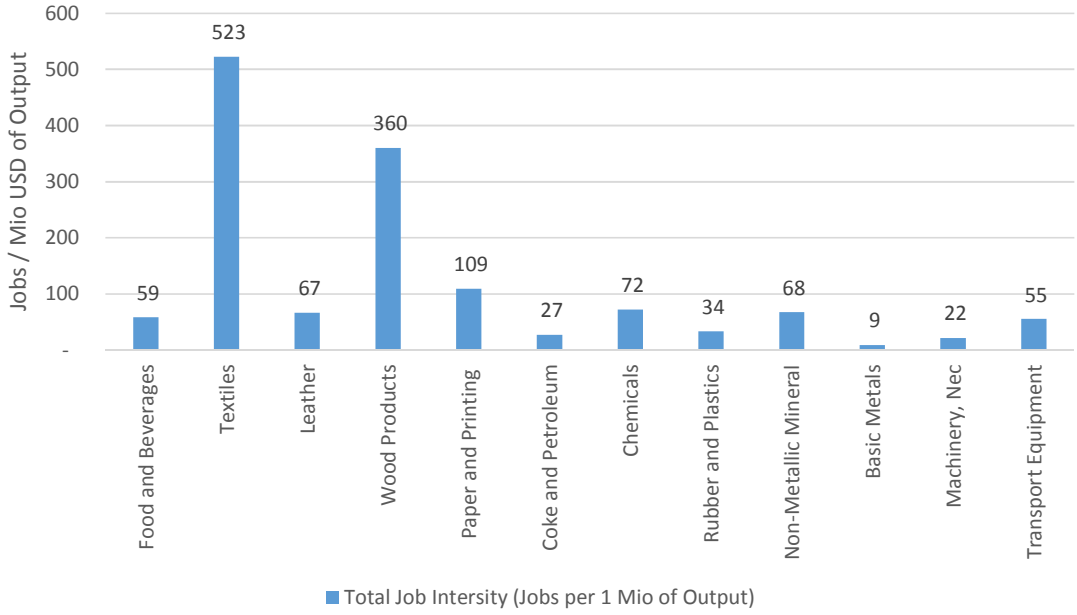


Note: Textile products include both textile fabrics and wearing apparel.
Source: UNIDO calculations based on ADB Multi-Regional Input-Output data, 2017

2.1.6. Development impacts of an expanding domestic economy

Expansion of the industrial sector would boost employment in the textile sector. The consideration of both supply and demand sides points to the fact that Kyrgyzstan has high potential to develop agro-processing and textile products industries. Figure 2-2 has already indicated the high potential of job creation in these industries by referring to the structural change pattern of similar-size countries. Figure 2-12 specifically looks at the case of Kyrgyzstan. If each industry increased outputs by one million USD in Kyrgyzstan, for example textile products (including textiles and wearing apparel) and the wood products industries would increase 523 and 360 jobs, respectively. In contrast, the same output increase would add only 9 jobs to the basic metals industry and 68 jobs to non-metallic mineral industries. The latter industries are capital intensive and tend to use more capital than labour to produce outputs. This difference in production technology clearly indicates the growth of the textiles industry is more inclusive; the fruits of growth would be distributed to a large number of people instead of enriching a limited number of skilled employees, managers and capital lenders.

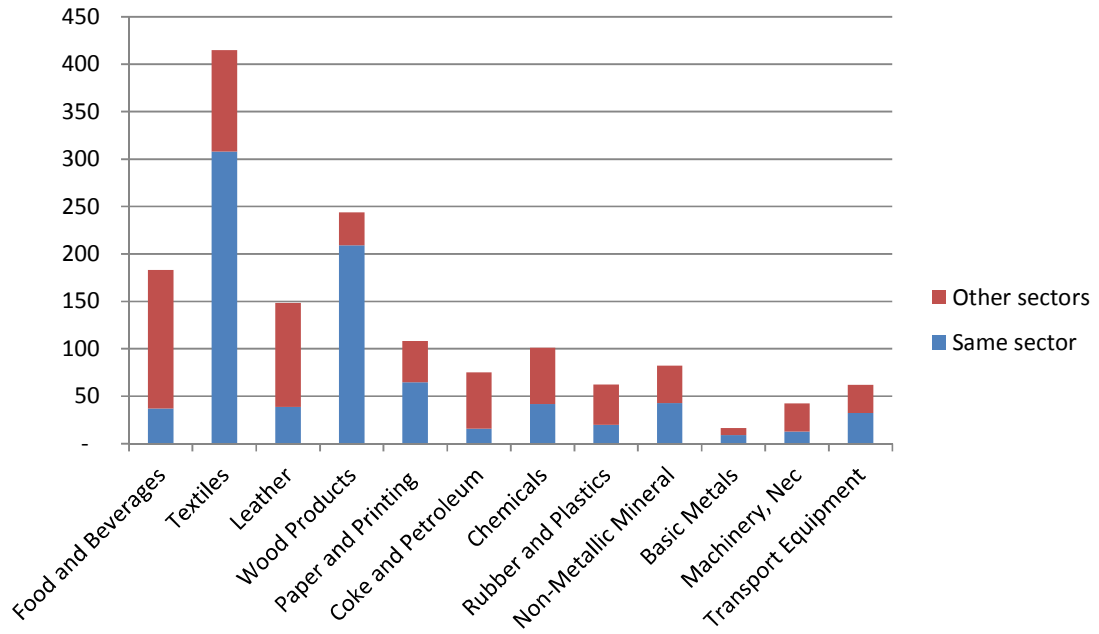
Figure 2-12: Job intensity of manufacturing sectors in Kyrgyzstan, 2014



Note: Textiles include both textile fabrics and wearing apparel. The electrical machinery industry was omitted from the analysis as it shows clear inconsistency in the outputs and employment trends between UNIDO data and ADB MRIO data
Source: UNIDO calculations based on ADB Multi-Regional Input-Output data, 2017

Employment generation via the food and beverages industry is also sizeable but indirect. Figure 2-12 seems to indicate that the food and beverages industry does not generate many jobs as it increases outputs. However, as an industry expands outputs, it creates jobs not only in the industry but also other industries due to production linkages. To assess the impact of industrial development on jobs, both jobs created in the same and other industries need to be counted. For example, Figure 2-13 shows the total jobs created in the economy due to an increase in exports by one million USD. The total number of jobs created by the food and beverages industry is the third largest after the textiles and wood products industries. In fact the majority of jobs created due to the export expansion of the food and beverages industry is in other sectors, mainly agriculture. Thus, the textiles, and food and beverages industries are superior to others from the perspectives of development potential as well as of social inclusiveness.

Figure 2-13: Total number of jobs generated (direct and indirect) when the exports of that sector expands by 1 Mio USD in Kyrgyzstan, 2014



Note: Textile products include both textile fabrics and wearing apparel.
Source: UNIDO calculations based on ADB Multi-Regional Input-Output data, 2017

The strategic industries also score high in terms of gender balance. As seen in Table 2.13, the food and beverages and the textile and wearing apparel industries are among the highest in terms of share of female employment in total employment. Within the textile products industry, the wearing apparel industry hires more women than men in Kyrgyzstan. Thus, employment growth in these industries creates nearly equal job opportunities for women and men. However, it is also true that male workers are the dominant work force in other industries. Unless this is due to the voluntary choice of women, this gender imbalance in the employment of capital- and technology-intensive industries needs to be rectified as the value added and employment of these industries in the economy will most likely increase as the country moves forward in its industrialization process.

Table 2.13: Female employment share in Kyrgyz manufacturing industries, 2014

	2014
Food and beverages	40%
Tobacco products	21%
Textiles	47%
Wearing apparel	55%
Leather and footwear	30%
Wood products	10%
Paper products	27%
Printing	41%
Coke,refined petroleum	22%
Chemicals	33%
Rubber and plastics	25%
Non-metallic mineral	19%
Basic metals	9%
Fabricated metal	36%
Machinery and equipment	35%
Motor vehicles	33%

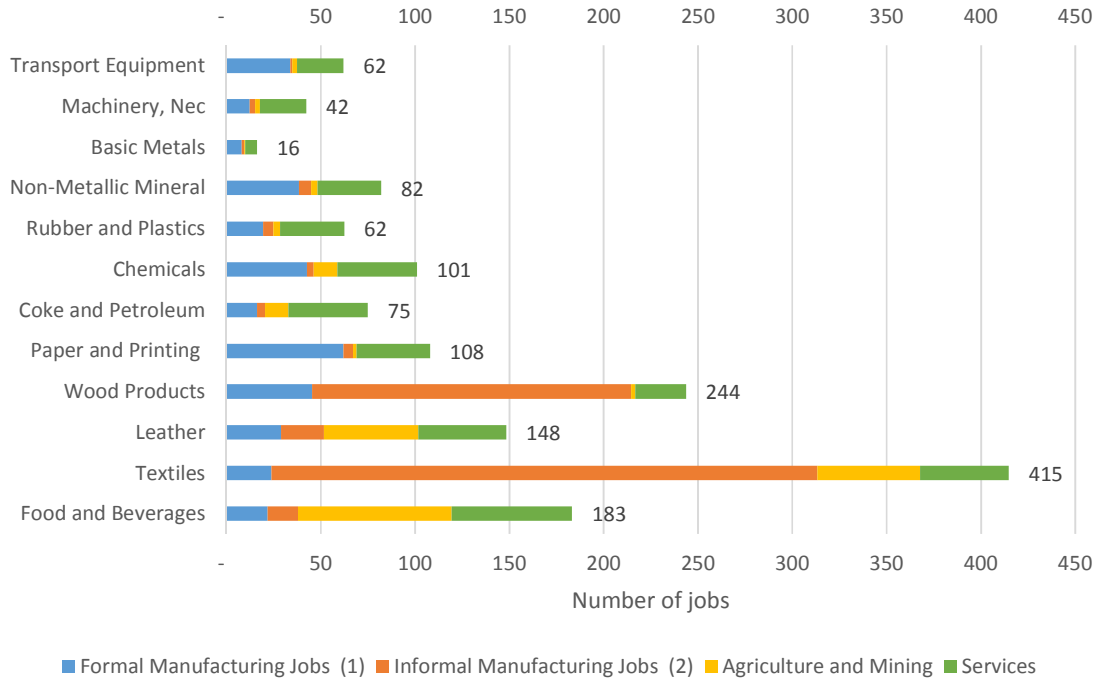
Source: UNIDO INDSTAT2 Rev3, 2016

The largesse of the informal economy challenges the creation of stable, well-paid jobs. For the same amount of increase in outputs and exports, the food and beverages and textiles products industries thus generate far more jobs for both women and men – directly and indirectly. However, if the current trend continues, most of the jobs creation in the textiles products' industry would take place in the informal sector as seen in Figure 2-14. Thus, the quality rather than quantity of jobs created would be the key issue for the textiles products industry. The enlargement of more informal than formal jobs will limit the contribution to the country's tax base and social security system. Also, workers holding informal jobs are vulnerable due to lower salaries and very limited social security benefits.

Informal jobs are typically found in small and micro-enterprises. For competitiveness and future technological upgrading of the industry, it is better to meet increases in the industry's production volume with the growth of current small firms becoming medium and large firms rather than with increase in the number of small firms. Larger firms with formal employment have higher consistency in product quality, enjoy economies of scale and higher productivity and can respond to large orders from customers. These are some of the important firm characteristics necessary to compete in international markets.

Figure 2-14 Total number of jobs generated by sector when each sector exports an additional 1 Mio USD, 2014

Break-up of job generation by sector, manufacturing sectors only



Note: Textile products include both textile fabrics and wearing apparel.
Source: UNIDO calculations based on ADB Multi-Regional Input-Output data, 2017

Confirming the job creation potential of strategic industries for the formal economy. A comparison with other countries at Kyrgyzstan's income level reveals the large job creation potential of the strategic manufacturing industries. Looking at only formal enterprises, if Kyrgyzstan increased the value added of the food and beverages industry from the current level of 106.4 million USD to the expected level (Kyrgzstan's income level on the black line in Figure 2-3), formal jobs in the industry would increase from the current level of 11,338 to 27,432. In addition, this expansion of the industry would create additional 593 jobs to other manufacturing industries (Table 2.14). In the case of textiles products' industry, formal employment would increase 7.5 times to 19,079 with an additional 1,354 jobs in other manufacturing industries.

Table 2.14: Estimated number of formal jobs at the average level of value added for a country at Kyrgyzstan's income level, 2014

	Current value added	Average level	Current employment	**After increase in value added**	**Additions to other man industries**
Food and beverages	106.4 million	259.0 million	11,338	**27,432**	**593**
Textiles and wearing apparel	17.7 million	143.3 million	2,519	**19,079**	**1,354**

Note: Textile products include both textile fabrics and wearing apparel. The value added figures in the table might differ from the official statistics because the value added used here are at estimated constant prices
Source: UNIDO calculations based on ADB Multi-Regional Input-Output data, 2016

The number of formal jobs could be 20 times larger. Furthermore, if Kyrgyzstan expanded the industry to the value added level of the food and beverages and textiles industries in Honduras, which belongs to the same size and income group as Kyrgyzstan, the formal jobs in the Kyrgyz food and beverages industry and the textiles industry would increase to 85,408 and 51,784 (more than 20 times its present level). These assessments indicate there are enormous potential for inclusive growth in these industries. The expansion of formal jobs in these industries would be due to new jobs created as a result of an increase in production volume as well as shift from informal to formal jobs.

Table 2.15: Estimated number of formal jobs at a value added of a successful country at Kyrgyzstan's income level, 2014

	Current value added	High level	Current employment	**After increase in value added**	**Additions to other man industries**
Food and beverages	106.4 million	809.0 million	11,338	**85,408**	**2,728**
Textiles and wearing apparel	17.7 million	403.7 million	2,519	**51,784**	**4,565**

Note: Textile products include both textile fabrics and wearing apparel. The value added figures in the table might differ from the official statistics because the value added used here are at estimated constant prices
Source: UNIDO calculations based on ADB Multi-Regional Input-Output data, 2016

2.2. Strong growth and sustainable development

2.2.1. Greening manufacturing industries

Acceleration of industrial development also requires to focus on environment sustainability. Both the supply- and demand-sides analyses indicated the rapid output growth potential of the Kyrgyz food and beverages, textiles and wearing apparel industries. Not only is the country likely to experience strong growth in these industries under right policy environment, they could also generate a large number of jobs for both women and men, which is critical for the country to

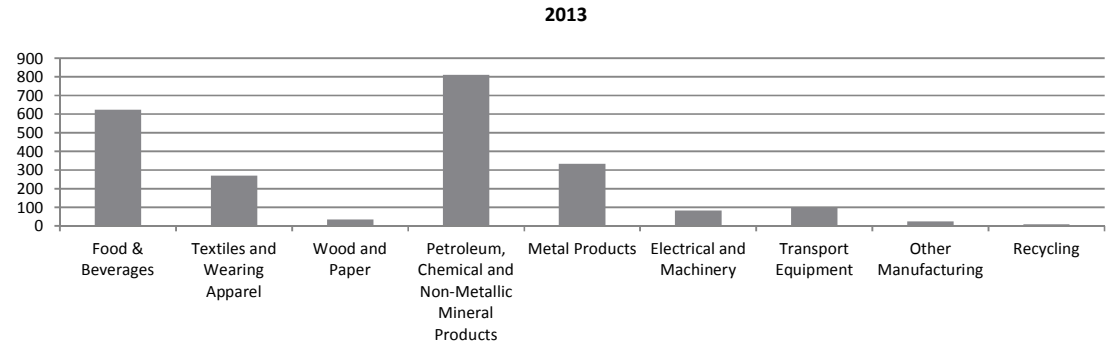
address the socio-economic challenges discussed in Chapter 1. Strong and inclusive growth, however, is not sufficient for the future industrial development of Kyrgyzstan. The county cannot grow at the expense of its natural environment, which itself is the valuable asset of the country for industries, energy and above all the long-term welfare of the citizens.

Chapter 1 showed that the levels of CO2 emission and material use of the Kyrgyz manufacturing sector are comparable to those in lower middle income countries. However, the growth of CO2 emission and material use of the Kyrgyz manufacturing sector is faster than that of lower middle income as well as other income groups. Strong growth of the manufacturing sector, that is important for the country to realize the development impacts, could, however, make the path of the country's industrial development less sustainable.

CO2 emissions are high in the food and beverages industry and energy intensive industries.

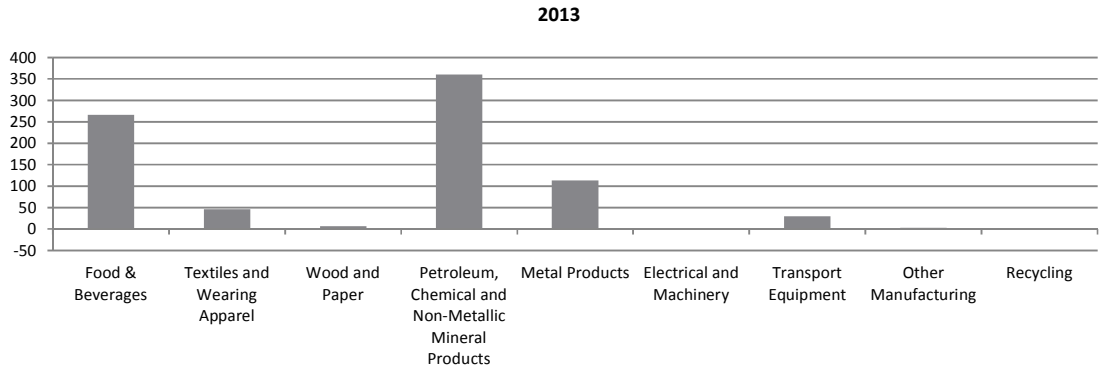
Food and beverages among the most emission-intensive industries. The following figures present where CO2 emissions come from within the manufacturing sector. Given the current manufacturing structure, the main emitters of CO2 are the petroleum, chemical and non-metallic mineral, food and beverages, metal, and textiles and wearing apparel industries (Figure 2-15). Especially the first two industries account for nearly 40% of the total manufacturing CO2 emissions, and they are also high in terms of CO2 emission intensity, which is defined as the amount of CO2 emission per value added. Moreover, as seen in comparisons with the CO2 growth trends of different income groups, the Kyrgyz food and beverages, and petroleum, chemicals and non-metallic mineral industries are increasing CO2 emissions faster than expected for the countries in the same income group (and in other income groups) for the last two decades.

Figure 2-15: CO2 volume across sub-sector industries in Kyrgyzstan



Source: EORA MRIO, 2016

Figure 2-16: intensity effect of CO2 across sub-sector industries in Kyrgyzstan

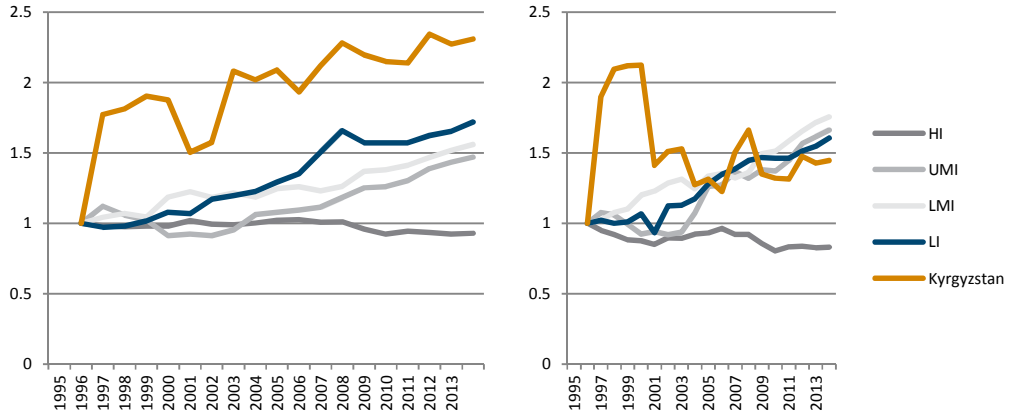


Source: EORA MRIO, 2016

Figure 2-17: Variation in CO2 volume (1995=1)

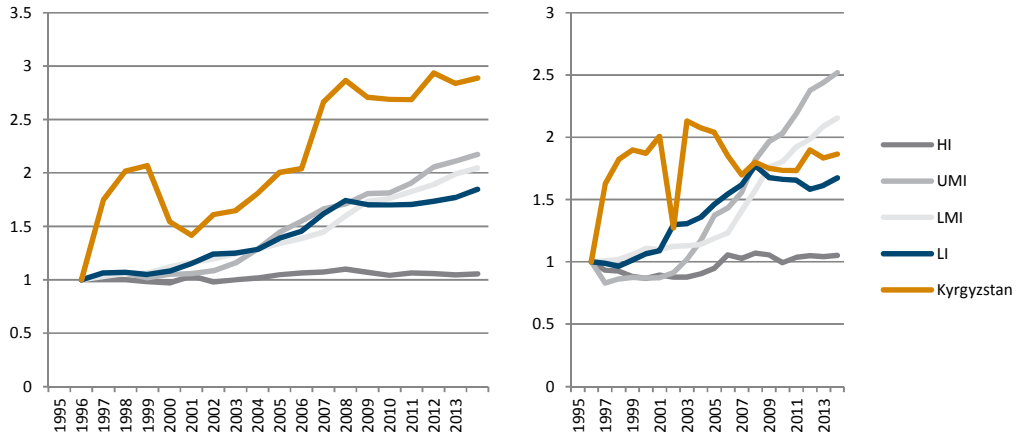
a) Food & Beverages

b) Textiles and Wearing Apparel



c) Petroleum, Chemical and Non-Metallic Mineral

d) Metal Products

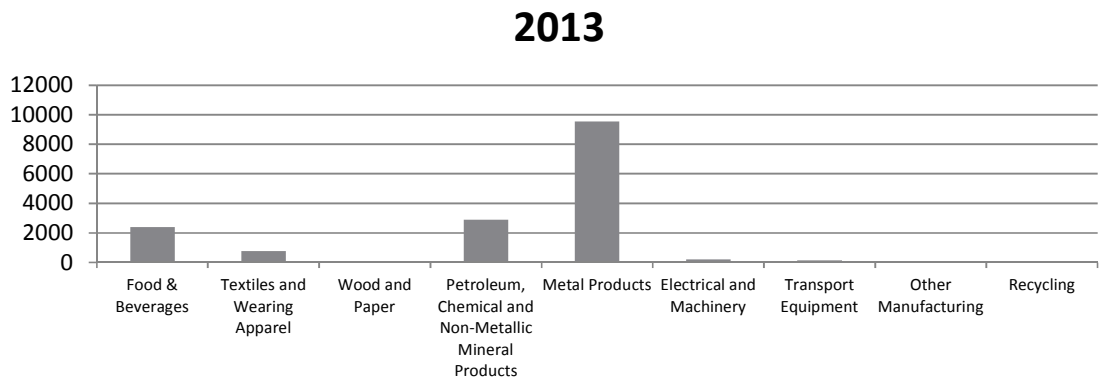


Source: EORA MRIO, 2016

For material use (including ores, biomass and construction materials), the metal products industry is by far the largest user of natural resource materials. The industry also has a high intensity of material use (amount per value added). At the income level of Kyrgyzstan, it should gradually reduce the intensity of material use due to the application of better technology and improved efficiency in production process as seen in the trend of LMIC in Figure 2-20.[49] However, the petroleum, chemicals and non-metallic, and metal products industries have not shown decreasing trends yet and keep the very high levels of the intensity relative to any income group.

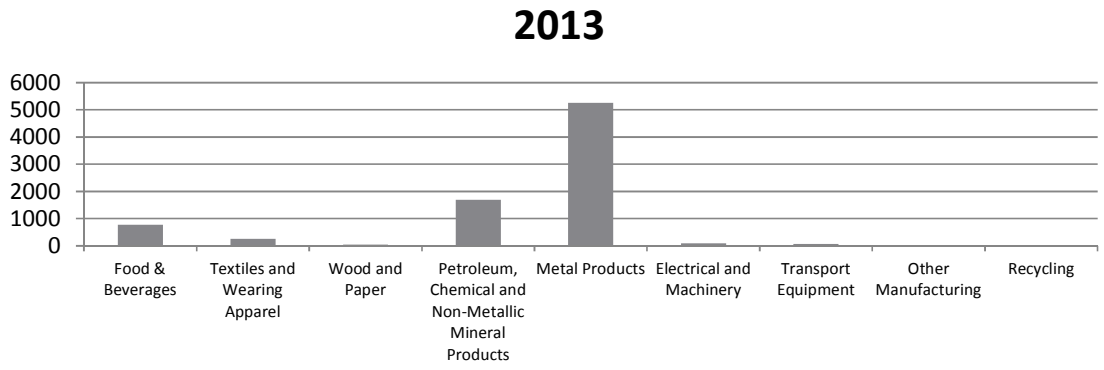
[49] The Kyrgyz food and beverages, textiles and wearing apparel industries are reducing the intensity of material use faster than the trends of lower middle income countries.

Figure 2-18: Volume of material use across sub-sector industries in Kyrgyzstan



Source: EORA MRIO, 2016

Figure 2-19: Intensity of material use across sub-sector industries in Kyrgyzstan

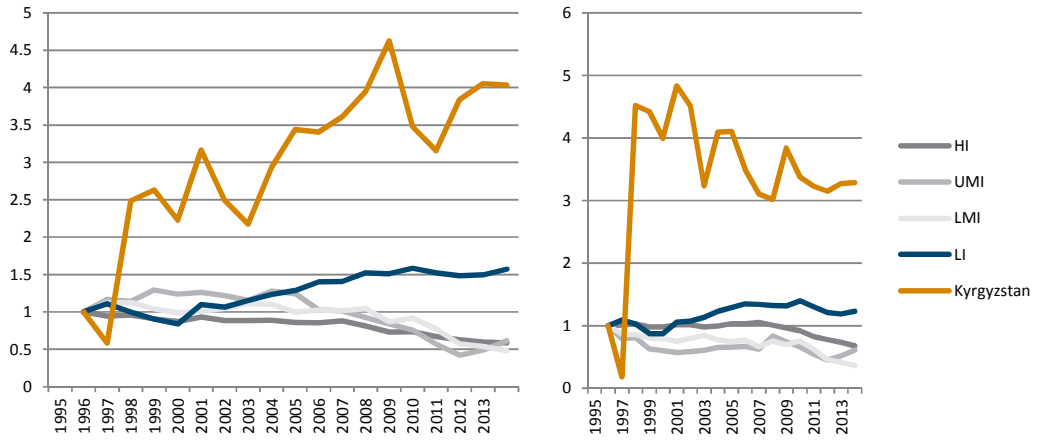


Source: EORA MRIO, 2016

Figure 2-20: Variation in intensity effect of material use (1995=1)

a) Petroleum, Chemical and Non-Metallic Mineral

b) Metal Products



Source: EORA MRIO, 2016

Pollution-mitigation measures need to be stepped up. The analyses on CO2 emissions and material use at sub-sector level point out two issues for the country to pursue inclusive and sustainable development. First, while the food and beverages, and textiles and wearing apparel industries have high potential for growth and employment generation, Kyrgyzstan has to take a stronger measure to reduce emission intensity and adopt cleaner production process especially for the food and beverages industry. This should be done in a way not to compromise the growth potential of the industry. Relatively simple measures such as improving production organization and keeping production floor clean could make difference in emission intensity without increasing production costs. Improving energy efficiency could lead to cleaner production as well as lower production costs (UNIDO, 2011).

Secondly, Kyrgyzstan has to significantly improve the emission and material intensity of the resource-intensive industries, such as petroleum, chemicals and non-metallic mineral and metal products industries. Both the current levels and intensity of CO2 emissions and material use in these industries are not only high but lagging behind the countries in the same income group. The disproportional contribution of the basic metal industry to the manufacturing value added makes its manufacturing activities relatively dirty and detrimental to the environment of this small country unless it significantly reduces CO2 emissions and material use.

Sustainability of industrial development must be made a priority. To achieve inclusive and sustainable industrial development, therefore, focusing on the promotion of the labour intensive industries would not be sufficient. The development of such industries could lead to higher growth and employment generation, but there is no guarantee that the process is also

sustainable. For ISID, Kyrgyzstan needs to introduce specific measures to make the production of especially the food and beverages and resource-intensive industries cleaner in addition to growth promotion strategies of the labour intensive industries.

2.2.2. Promotion of a Green Industry – hydropower sector

Harnessing the potential of hydropower. In addition to greening existing industries, the promotion of green industries could support the country's growth and sustainable development. The growth potential of the hydropower sector and the importance of it for sustainable development of Kyrgyzstan have been repeatedly voiced by the government, different stakeholders and development organizations during the two diagnostic missions of UNIDO. The analysis in this Chapter confirms that the Kyrgyz hydropower sector could play a crucial role in the country's sustainable growth. The following sections discuss the potential of the sector and the factors preventing the country from realizing the potential. Chapter 4 proposes the measures to overcome the existing obstacles.

How much does Kyrgyzstan have the potential of developing hydropower including small hydro?

Less than 20 per cent of hydropower capacity has been installed so far. Kyrgyzstan due to its mountainous terrain (comprising 80 percent of its landmass) and climatic conditions has a very large hydropower potential. It is the third largest in the former Soviet Union after the Russia Federation and Tajikistan and amounts to the hydropower potentials of UK, France, Spain and Germany combined (SlovakAid, 2006). The hydropower resources of Kyrgyzstan consist of 268 rivers, 97 major canals and 18 reservoirs (Ministry of Justice of the Kyrgyz Republic, 2015). Generation potential is approximately 140-160 TWh, but only 9-10 percent has been exploited (WSHPDR, 2016; Ministry of Justice of the Kyrgyz Republic, 2015; Ministry of Foreign Affairs of the Kyrgyz Republic, n.d.), with installed capacity having reached 17 percent of its total potential (see Table 2.16).

Of the potential sources of hydropower in the country, the Naryn River basin has 44 percent of hydropower resources, while the Ferghana valley contains 23 percent, the Chui river basin - 8.1 percent, the Sary-Jaz river basin - 6.6 percent and the other basins -18.3 percent. About 33 larger hydropower plants could be constructed on Naryn river, having a total capacity of 6,450 MW (SlovakAid, 2006). Due to climate change and melting of the glaciers, scientists have predicted a short-term increase in run of capacity, it could increase by 5 to10 percent by 2020 - 2025, but after 2020 - 2025 the water-flow may decrease, which will reduce the capacity of hydroelectric power generation (Zhupankhanet al., 2017; OECD, 2016; EBRD, 2013; GoK, 2009).

Table 2.16: Hydropower installed capacity vs potential[50]

	Capacity, MW	Generation, TWh
Total Hydropower potential	18,500	160
Total Hydropower instaled	3,072	14
Total instaled %	**17%**	**9%**
Large HPP poetntial	17,600	152
Large HPP instaled	3,030	13.9
Large HPP instaled %	**17%**	**9%**
SHP (up to 30MW) potential	900	8
SHP (up to 30MW) instaled	41.5	0.125
SHP instaled %	**5%**	**2%**

Source: WSHPDR (2016); Ministry of Foreign Affairs of the Kyrgyz Republic (n.d)

Table 2.17: The percent of river basin by country

	Syr Darya	Amu Darya
Kyrgyzstan	74%	2%
Kazakhstan	7%	–
Uzbekistan	17%	9%
Tajikistan	3%	73%
Turkmenistan	–	2%
Afghanistan	–	14%

Source: Kushkumbayev S., Kushkumbayeva A. (2013)

Smaller scale hydropower potential (SHP)

Small hydropower plant (SHP) potential

There is significant potential for smaller scale hydropower what needs further investigation. Potential for smaller scale [51] hydropower is up to 5-8 TWh, with only 2 percent utilised (see

[50] International Center on Small Hydro Power and UNIDO defines small hydropower as having an installed capacity of up to 10 MW per plant, however Kyrgyzstan's local definition on small hydropower is up to 30 MW. Above this threshold plants are assumed to be larger scale and might not benefit from government subsidies. Differences in definition can cause confusion.

Figure 2-21 and Figure 2-22) (Ministry of Justice of the Kyrgyz Republic, 2015). About 980 small (up to 10 MW) and micro (up to 1 MW) hydropower plants can be constructed on 172 streams. The mountain rivers outflowing to Chui, Talas, Naryn, Sary Dzaz, Karadarya rivers and Issyk-Kul Lake have the largest potential.

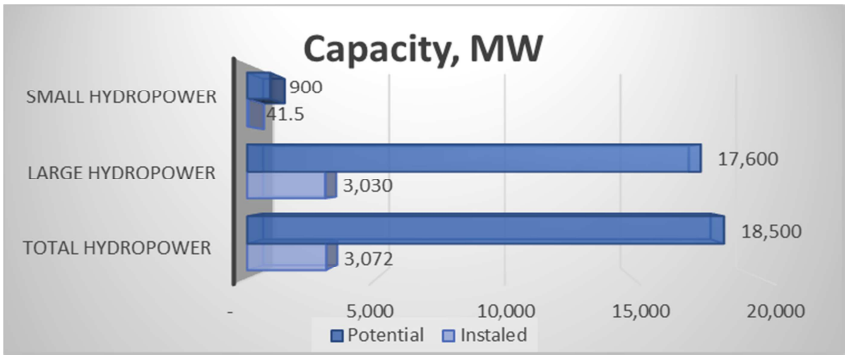
According to the study carried out in 2005 technical available generation potential of SHP would be about 6,800 GWh with installed capacity of 1,900 MW from 249 SHPs (see Table 2.18). Thus, about 7 SHP with a total installed capacity of 74 MW and total annual production of 220 GWh can be constructed into the larger irrigation channels. Due to the high variation of estimations, it would be advisable to conduct a new, on the ground study to estimate the technical, economical and market potential of such a project (SlovakAid, 2006).

Table 2.18: SHP generation potential [52;53;54]

	Tehnical potential	Economical potential	Market potential
SHP up to 10MW	6,800 GWh	from 876 GWh to 2,000 GWh	from 282 GWh to 760.5 GWh

Source: SlovakAid, 2006

Figure 2-21: Hydropower capacity in Kyrgyzstan



Source: WSHPDR (2016); Ministry of Foreign Affairs of the Kyrgyz Republic (n.d)

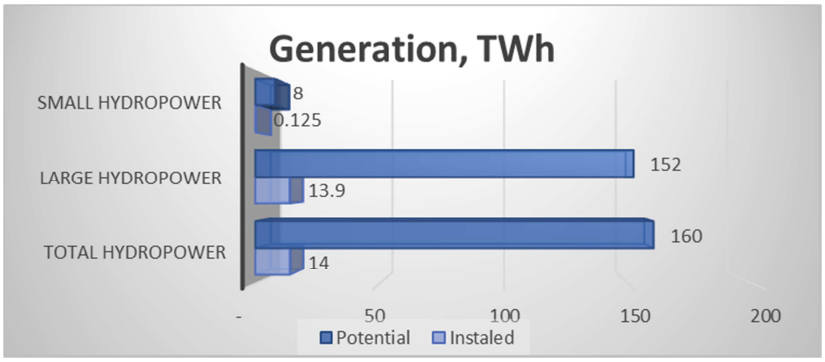
[51] International Center on Small Hydro Power and UNIDO defines small hydropower as having an installed capacity of up to 10 MW per plant, however Kyrgyzstan's local definition on small hydropower is up to 30 MW. Above this threshold plants are assumed to be larger scale and might not benefit from government subsidies. Differences in definition can cause confusion.

[52] Technical potential: can be used by implementing of available technologies, limited by legislative, administrative and environmental barriers.

[53] Economical potential: part of the technical potential that can be economically viable, given the society constrains (legislation, fiscal regulations, equipment operation costs, discount rates, inflation, etc.)

[54] Market potential: Economic potential, minus market barriers (investment risks, expected benefits, etc.).

Figure 2-22: Hydropower generation in Kyrgyzstan



Source: WSHPDR (2016); Ministry of Foreign Affairs of the Kyrgyz Republic (n.d)

According to statistics, in 1960 there were up to 200 hydropower stations in Kyrgyzstan (currently 12) with an annual electricity generation of about 285.3 GWh and installed capacity of 66.3 MW (The Government of the Kyrgyz Republic, 2015). This source accounted for 32.7 percent of the total electricity production in the republic.

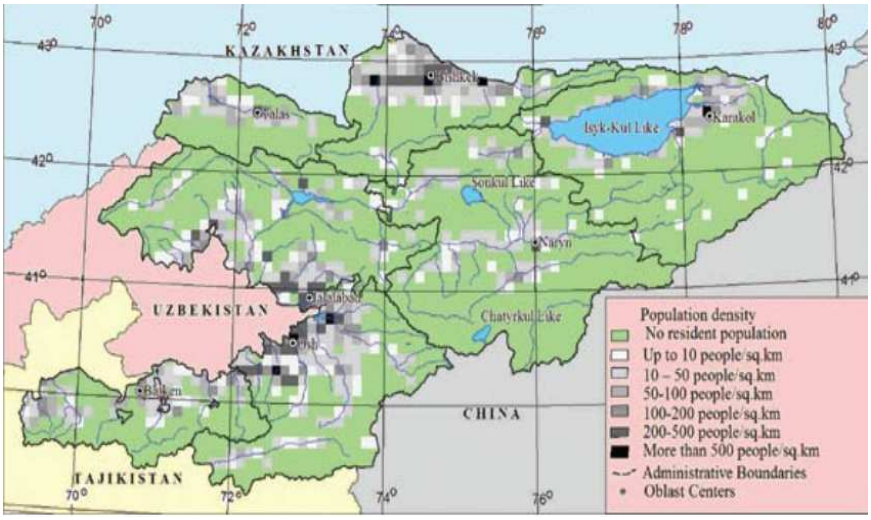
Initiatives to develop small hydropower plant shave been taken. The concept of 'SHP development in Kyrgyzstan in 2015-2017' was approved on 20 July 2015 by the Kyrgyz Republic Government Decree No. 507 (UNDP, 2016). Currently there are 87-100 economically feasible small hydropower sites[55] with capacity of 180 MW and power generation of up to 1 TWh (Ministry of Justice of the Kyrgyz Republic, 2015). Many locations suitable for SHP have maintained dams, channels and other facilities from the SHP plants previously located there (ADB, 2013b). The largest SHP potential is concentrated in the northern, southern and eastern areas (marked with blue, Figure 2-23) (WSHPDR, 2016) (Monique, 2009). The location of SHP potential is connected to the most densely resided areas of Kyrgyzstan (marked with grey, Figure 2-24). The density of population is extremely uneven, the majority of it being concentrated in the valley and foothill climatic zone, which is considered to be the area of comfort habitation and which covers about 20 per cent of the territory of the country (GoK, 2009).

[55] SHP with installed capacity up to 30MW

Figure 2-23: Map of locations of small hydropower potential in Kyrgyzstan

Source: UNFCCC (2009)

Figure 2-24: Density of resident population in the Kyrgyzstan (in 2006)



Source: Global Environmental Facility (2009)[i]

What are the factors which are preventing the country from realizing the potential?

Regional instability

Most of the hydropower projects in Kyrgyzstan have their roots in Soviet engineering plans developed in 1930s. After the collapse of the Soviet Union Kyrgyzstan's intention to continue with these plans faced much resistance from downstream countries, particularity Uzbekistan[56] (Kasym, 2014) (Mirovalev, 2016).[57] During the Soviet Union era the main agricultural objective was to maximize the area under the irrigated crops and ensure enough water in the normal as well as dry years. Kyrgyzstan's reservoirs (existing and planned) would have ensured extra water for irrigation purposes, rather than the energy needs of Kyrgyzstan.

The Almaty Agreement in 1992 was the first major joint water management agreement between the Central Asian states after the downfall of the Soviet Union. The agreement in practice meant that the old Soviet Union water-sharing regime safeguarding the downstream cotton growing systems was agreed upon (Weinthal, 2002). The agreement was passed despite protests from Kyrgyzstan. Thus, it appears that the three major economic powers of Central Asia (Kazakhstan, Uzbekistan, and Turkmenistan) acted as hydro-hegemons and pushed through the agreement that would guarantee the downstream irrigation industry. The reason for this appears to have been that the three downstream countries had no real motivation to change the original Soviet Union arrangement that was reiterated in the Almaty agreement 1992 (World Bank, 2004) (Abdolvand, Mez, Winter, 2015. All the barter agreements that obliged Kyrgyzstan to operate the reservoir in an irrigation mode, in exchange for coal and gas supplies from Uzbekistan and Kazakhstan during the winter months, were breached by all the parties (Abbink, Moller, O'Hara, 2009). The inability of downstream basin countries to participate in a fairer basin-wide water resources development might trigger a unilateral hydropower development by upstream countries (Tajikistan, Kyrgyzstan) (Zhupankhan, Tussupova, Berndtsson, 2017). For example, Kyrgyzstan plans to build a Kambarata-3 Hydro Power Plant to produce hydro-energy for export to neighbouring states, which will give Kyrgyzstan significant leverage over Uzbekistan. However, Tashkent strongly opposes this project, worrying that Kambarata will limit or disrupt the flow of irrigation water essential to its cotton fields and farmers.[58] As mentioned above this conflict of interests has caused one of the key problems for hydropower development in Kyrgyzstan and consequently most projects have been delayed (Kushkumbayev, Kushkumbayeva, 2013).

[56] A common misconception appears to be that hydropower and irrigation demand is conflicting and incompatible. The problem with hydropower production in the upper reaches is not water withdrawal and an overall reduction of water flows, but the amount and time of water releases from the dams. The main concern for the downstream countries is that Kyrgyzstan would discharge water mainly in winter times (energy needed for heating) when water for agriculture is not needed in Uzbekistan.

[57] Hundreds of people were killed in violent ethnic clashes in the Kyrgyz part of the Ferghana valley in 1990 and 2010, and the latter conflict prompted a brief exodus of hundreds of thousands of refugees. In 2015 Uzbek President I. Karimov warned: "Control over water resources in the republics of Central Asia may lead to a full-scale war."

[58] Shahbazov F. (2017). Will Central Asia Fight Over Water Resources? Forbes. Available from: https://www.forbes.com/sites/realspin/2017/02/06/will-central-asia-fight-over-water-resources/#28b7a2a64c1f

Investment and legislation framework

The total public investment projects funded by domestic sources are from 2.5 to 10 per cent of total investments between 2006 and 2012, and the rest was financed by international funding sources (Table 2.19) (OECD, 2016). Taking into account regional instability and other factors mentioned in this report[59] not many foreign investors are willing to enter the Kyrgyz market yet (Abdolvand, Mez, Winter, 2015). However, there are also other factors besides regional instability that are jeopardising investment in Kyrgyzstan such as a weak legislative framework. There is existing support for investors, but it isn't functioning as intended. According to a UNDP analysis there are a number of barriers hindering investment in the hydropower sector (UNDP, 2015), such as: (a) a lack of government guarantees for returns of investment, both local and foreign investments, and constantly "jumping" exchange rates; (b) a lack of strict rules in Kyrgyz legislation on land allocation and reliability of the use of water, land and excessive bureaucracy in land acquisition; (c) a lack of strategic and long-term vision of local authorities on informing the public about feasibility and advantages of small hydropower plants in local areas; (d) a lack of guarantees from distribution companies on timely payment for electricity, etc. Historical legacies are shaping water institutions in the region. The water administration is still characterized by a predominantly hierarchical culture, strong fragmentation, and a lack of horizontal coordination (Abdolvan, Mez, Winter, Mirsaeedi-Gloßner, Schutt, Rost, Bar, 2015). However, Kyrgyzstan seems to be the only state in Central Asia where state authorities, including members of hydraulic bureaucracies, have supported a policy of decentralization (Zinzania, Mengab, 2017).

Table 2.19: Public investment projects financed by foreign and domestic funding, as a % of total

	2006	2007	2008	2009	2010	2011	2012
Foreign	92.4	89.2	90.9	92.6	94.4	95.5	97.4
Domestic	7.6	10.8	9.1	7.4	5.6	4.5	2.6

Source: OECD (2016)

Electricity price and feed-in-tariff

The Government has continued to subsidize electricity rates, since the crisis in 2009. Electricity costs have carried out a social security function, similar to the Soviet practice.[60] According to UNECE, tariff reforms are considered the single most important policy action needed to improve the financial viability of the heating sector and to incentivise end-user energy efficiency (UNECE, 2017). Due to the slow pace of improvement in the sector, a situation has emerged whereby people do not see why electricity rate increases should be accepted in return for poor service

[59] Low electricity price, transparency and mismanagement, old infrastructure; legislation framework; etc.

[60] This policy comes at a huge fiscal cost, mostly benefiting large, wealthy consumers who have more ways of using electricity (for example, utilizing more house appliances), in contrast with its stated social objective.

(Abdolvand, Mez, Winter, 2015). In November 2014, Resolution No. 660 came into force which approved the Medium-Term Tariff Policy of the Kyrgyzstan for Electric and Thermal Energy, 2014-2017, the price should have increased by 20 per cent annually, resulting in the rate of KGS 1.21 per kWh in 2017.[61] As of October 2017, the electricity price was still KGS 0.77 for households (KGS 2.24 non-residential users), without any announced plans to increase it in the soonest future (Government of the Kyrgyz Republic, 2014).[62;63] The World Bank points out that the tariff structure is believed to incentivize fraud with small commercial users reportedly registering themselves as residential consumers to bypass the higher tariff category. Kyrgyzstan has one of the lowest electricity tariffs in the world, low tariffs motivate higher demand, given weak incentives to save energy. Residential demand has increased for almost 58 per cent during the period 2007-2016 while the number of customers only increased by 12 per cent in this period.*[64] Growing domestic demand means that the country has less surplus power to export and in fact often resorts to costly imports (World Bank Group, 2017).[65]

A feed-in-tariff scheme to promote renewable energy (SHP up to 30 MW) has been adopted through the Law on Renewable Energy Sources adopted in 2009, it would ensure the return on investment for projects within eight years (Ministry of Energy and Industry of the Kyrgyz Republic, 2008). During the project payback period, tariff on electricity generated from SHP will be determined by multiplying the maximum tariff (in 2017 it was 2.24 KGS for industrial users) for ultimate consumers by a corresponding factor: 2.1.[66] In 2013 the Ministry of Energy*[67] estimated payback period for SHP projects currently is very long (in 2017 electricity price was KGS 0.77) (Stomaliev, 2013): (a) with the tariff rate of KGS 0.7 the payback period would be over 50 years; (b) with the tariff rate of KGS 1.26 (the payback period would be between 17 and 21 years; (c) with the tariff rate of KGS 1.32 the payback period would be between 15 and 20 years; (d) with the tariff rate of KGS 2.25 the payback period would be between 6 and 9 years. Current low electricity tariffs and bad billing management of distribution companies act as a disincentive to foreign investment (SlovakAid, 2006).[68]

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[61] Households using more than 700 kW per month would pay the weighted average of the actual internal cost of supply and the cost of imports, in 2016 the price was 2.16 KGS. Electricity consumption in the category <700kWh/month accounts for 81 per cent of residential consumption and 52 per cent of total end-user consumption, therefore a large part of the consumption is below the threshold, benefitting a large proportion of consumers who do not need the subsidized tariffs and also benefitting disproportionately large consumers.

[62] Kloop (2017). Tariffs for electricity and heating will not be raised until the end of 2017. Available from: kloop.kg/blog/2017/02/09/tarify-na-elektrichestvo-i-otoplenie-ne-budut-povyshatsya-do-kontsa-2017-goda/

[63] Akcabar (2016). In Kyrgyzstan, tariffs for electricity will remain until the end of the year. Available from: https://www.akchabar.kg/news/v-kyrgyzstane-tarify-na-elektroenergiyu-sohranyatsya-do-konca-goda/

[64] The comparatively high energy consumption is a reflection of inefficient buildings and insufficient price incentives.

[65] On a scale of 0-8, with 8 indicating total reliability of supply and transparency of the tariff, Kyrgyzstan received 0; the average in Eastern Europe and Central Asia (EECA) was 5.2

[66] Hydropower Feed in Tariff is calculated by electricity price multiplying by factor 2.1. In 2017 it was 2.24x2.1=4.704 KGS.

[67] In 2015 the Ministry of Energy and Industry was abolished, with a transfer of policy making responsibilities to a new State Committee on Industry, Energy and Subsoil Use in 2016.

[68] Considering that investors are usually looking for a payback period of within 5-7 years, for a lifetime of 30 years, small hydropower plants could be seen as a sound investment

Ageing infrastructure

The electricity infrastructure in the Kyrgyzstan was built in the Soviet era, when Central Asia was treated as one region. Current infrastructure is aged and inefficient, and needs modernization. The energy sector in 2013 had a deficit of 4.6 billion USD, which had to be covered through loans, in 2014 it was already 6.3 billion dollars (income is 12 billion USD expenses -18.3 billion USD). In these conditions, the investment attractiveness of the industry suffers (Ministry of Foreign Affairs of the Kyrgyz Republic, n.d.). The sector faces frequent outages during the winter months (due to low water flows) and a high level of loss in electricity transmission (World Bank, 2014) (UNECE, 2017). The seasonal variation of the electricity load has a ratio of 3:1 between the month of the highest demand (January) and the lowest demand (May). Overloading the systems in order to meet the high winter demand has accelerated the deterioration process and increased the number of service interruptions (Ministry of Foreign Affairs of the Kyrgyz Republic, n.d.) (Jorde, Terenteva, 2009). A range of institutional barriers, such as an unsustainable tariff subsidy regime (discussed in the previous section), have led to a significant financial burden on public budgets, and resulted in a serious hold-up in the modernisation and expansion of the electricity, heat and gas systems (IEA, 2015). However, recent infrastructure works during summer 2016 reportedly resulted in a 10 percent reduction of outages in winter (UNECE, 2017).

Transparency and accountability

The Government of Kyrgyzstan has identified lack of transparency and accountability as one of the key problems hindering faster economic development in the country, and by extension hydropower projects. Exercised reforms so far have not achieved their goal. Power asymmetries marginalize the role of non-government actors that would have an interest in alternative modes of governance. Industry experts believe that only 15 percent of the electricity losses are technical in nature; the rest of the missing volume reportedly went to generate electricity that was illegally sold abroad (Marat, 2015).

Climate Change

It is recognized that the observed temperature has risen twice as fast in Central Asia as compared to global levels since the 1970s (German Advisory Council on Global Change (WBGU), 2007). Climate change is very evident in Central Asia, through the melting of the Tien Shan glaciers, which are influencing hydropower potential. Scientists have observed that even in the most glacier-friendly scenario, glaciers will lose up to two thirds (−60 per cent) of their 1955 mass by the end of the 21st century, while in 2012 already 27 per cent has been lost (Sorg, Huss, Rohrer, Stoffel, 2014) (Zhupankhan, Tussupova, Berndtsson 2017). The Government has already identified the negative impacts on water resources as one of the most severe climate change risks for Kyrgyzstan, and adaptation measures are important to secure safe and sufficient water resources for their consumers within the country and its neighbouring states (GoK, 2009).

3. Obstacles facing Kyrgyz firms

The second chapter identified three key 'strategic' manufacturing industries in Kyrgyzstan with a high potential for growth and employment creation, namely the food and beverages industry, the textiles industry and the wearing apparel industry. All three industries were, however, shown to underperform and lag well behind comparable industries in countries with similar income levels. This naturally calls for the need to identify key underlying factors, which hinder growth and employment creation in these three industries.

This chapter takes a closer look at the firm-level and sheds light on the key obstacles, which keep Kyrgyz firms in the three strategic industries from fully exploiting their inclusive growth potentials and therefore warrant attention and intervention. In particular, it identifies several general and industry-specific obstacles, which are either embedded in the external market conditions of firms or lie in the firm's internal organisation.

In view of this, Section 3.1 establishes the profiles of the three strategic industries as a backdrop for the ensuing firm-based analysis, while Section 3.2 conducts a thorough firm-level analysis. In particular, section 3.2.1 establishes performance and profitability differences between Kyrgyz firms in the three strategic industries and similar firms in benchmark countries. Section 3.2.2 sheds light on some of the key determinants of firm performance and success, which warrant further attention and policy intervention. Section 3.2.3 discusses key general and industry-specific obstacles, which keep Kyrgyz firms in the three industries from fully exploiting their growth potential and acting as engines of economic and formal employment growth.

3.1. Industry profiles

3.1.1. Agro-processing and the food and beverages industry

The agro-industry and value chains

Kyrgyzstan's economy is dominated by agriculture, which accounts for about 15% of GDP and 30% of the labour force (FAO, 2015). However, agricultural value chains remain underdeveloped in the country, with an estimated three-quarters of the people living in poverty and four-fifths in extreme poverty residing in rural areas (FAO, 2015), with females and young people especially vulnerable.

In Kyrgyzstan, over 75% of agricultural holdings are cultivated by small-scale farmers. Traditionally, the productive capacity of the agri-sector in the country has been hindered by low production volumes, a lack of permanent buyers and low levels of knowledge and skills in agricultural technology and marketing techniques (Kaseeva, 2013). **Error! Reference source not found.** below, utilizing FAO figures on the type of farm holdings in Kyrgyzstan, illustrates the extent to which the sector is dominated by subsistence/micro operators.

Table 3.1: Overview of Kyrgyz Farm Structures in 2012

Farm Categories	Quantity	Arable Land in Hectares	Arable Land as a Percentage of Total Holdings	Average Farm Size
State Farms, Land Redistribution Fund and Collective Farms	621	298,700	23.4	481
Peasant Farms and Individual Entrepreneurs	344,492	891,800	69.9	2.6
Kitchen Gardens and Household Orchards	733,909	71,100	5.6	0.1
Arable Land owned by Processors, Protected Areas, Forest Fund, Water Fund and Reserves	-	14,300	1.1	-
Total	**1,079,013**	**1,275,900**	**100**	**1.2**

Source: Kaseeva, 2013 (according to the National Statistical Committee).

Previous studies of the sector have identified a number of obstacles to realizing productive value chain in the Kyrgyzstani agro-industrial sector. One issue is a fundamental lack of trust between farmers and processors, with many agro-enterprises preferring to operate through intermediaries or procurers, who collect produce from small holdings and sell it in bulk to enterprises or larger-scale farmers. Many processors also typically prefer to work with cooperatives and major suppliers in order to avoid red-tape (Kaseeva, 2013).

Small farmers have also been hitherto reluctant to join associations or cooperatives, and until recently were rarely the target of government subsidies or support. A mobilization of these actors would have several benefits, in terms of organization of product supplies, facilitating the purchasing process and delivery of agricultural goods (Kaseeva, 2013). Small holders often complain of issues in marketing their produce while processors and traders usually cite a lack of raw materials as their main impediment. The small number of successful and active agri-value chains in the country have often led by foreign, large scale operators, who are capable of "pulling" the entire chain and driving cooperation through purchasing of products, rather than farmers attempting to "drag" the supply chain from the bottom (Ibid).

Agricultural processing is also considered to be underdeveloped in Kyrgyzstan as it requires significant financial investments (processing equipment/machineries, storage space), highly qualified human resources and bridging connections with suppliers and various agro associations, capacities which are often scarce within Kyrgyzstani agriculture. Considering the mountainous topography of the country, the geographic location of processing companies may also pose difficulties in some regions. A somewhat opaque business environment also causes some issues for investors in terms of pricing, quality, volumes and locations of produce (The Microfinancing Centre, 2011, p.11). Broadly speaking, Kyrgyz agriculture also suffers from a number of structural impediments which prevent greater value addition, including:

- A lack of integration in regional value chains;

- Insufficient training in production and processing techniques, leading to losses and inefficiencies;
- Difficulties in accessing market channels and a poor understanding of customer needs and requirements at the export and national markets;
- Lack of access to finance despite the relatively low investment requirements to develop an agricultural business;
- Inappropriate technologies and facilities leading to production spoilage and poor product quality and safety;
- Inability to ensure constant volume of deliveries at the request of the buyer and the seasonal nature of supply;
- Significant loss of production volumes for transportation due to lack of primary processing of products (UNIDO, 2012).

Yet the Kyrgyz agricultural sector does also exhibit a number of promising factors overall, including its recent accession to the nascent Eurasian Economic Union, which may help strengthen intergration within regional value chains, its comparatively low cost-base for production, and comparative advantages in some sectors, such as a positive reputation for traditional agri- goods and crafts. In this vein, the Kyrgyz Government recently announced that it expects agricultural exports in 2017 to climb from 450 thousand tons to 500 thousand tons (Kabar, 2017). Moreover, the Association of Food Industries (AFIE), founded in the mid-2000s, has managed to act as a focal point for actors in the food industry, and is active in marketing Kyrgyzstan's produce outside its borders. There are, thus, some positive trends which can be further harnessed should productive capacities be increased in agriculture.

As one can observe from Table 3.2, meat and dairy products make up the greatest proportion of the agri-sector's production, most of which is either consumed on a subsistance basis, or is sold through vendors for little profit.

Table 3.2 Agricultural produce of the Kyrgyz Republic 2008-2015 (tonns)

Krygyz Republic	2008	2009	2010	2011	2012	2013	2014	2015
Grain	648,608	747,228	702,052	915,728	552,303	718,542	611,851	847,573
Raw Cotton	94,578	49,669	73,890	100,024	83,594	65,090	67,385	43,431
Tobacco	13,314	11,370	8,328	9,043	7,284	6,316	4,149	1,122
Potatoes	648,449	641,145	584,729	492,292	423,047	673,079	545,956	608,674
Vegetables	449,805	438,222	492,857	644,621	506,286	519,629	569,934	791,150
Melon fields	118,068	108,262	135,958	134,018	167,335	187,574	194,874	230,194
Plodovoyagodny Cultures	121,928	119,833	119,400	135,307	151,656	169,539	150,677	153,189
Grapes	5,095	5,865	1,513	4,302	4,953	5,131	2,866	3,758
Meat (in live weight)	211,456	226,687	198,273	227,395	239,885	245,788	259,117	259,614
Milk	662,382	711,689	837,065	888,958	809,048	963,527	1,054,906	1,063,054
Eggs (per million)	264,064	150,798	267,721	286,335	285,163	314,459	297,914	353,251
Wool (in physical weight)	3,650	4,731	7,297	6,986	7,123	6,576	7,294	6,856

Source: National Statistical Committee of the Kyrgyz Republic, 2017

The agricultural sector is also characterised by weak linkages between suppliers and producers domestically. The privatization of land holdings following independence in 1991 resulted in the creation of a very large number of small private farms (estimated to comprise over 300,000 smallholder farmers with an average farm size of about three hectares), sharing an estimated 80-95 per cent of total agricultural production (National Institute for Strategic Studies of the Kyrgyz Republic, 2014). Agricultural goods are often exported in their raw state or unprocessed and thus the opportunity to add value domestically through intermediate activities is lost.

The following is a brief overview as to production trends and some of the challenges to, and opportunities for, agricultural value chains in Kyrgyzstan in various sub-sectors.

Dairy farming

Small-scale farming dominates the dairy sector, with few cooperatives and middle men often selling raw milk to local processors. Cow's milk is the most significant output, reaching an average of 9 million USD of exports per annum in the period 2006-2016, though horse's milk is also sold for its healthgiving properties. Most of the milk and dairy products produced are for local consumption, with approximately one-quarter produced for processing or export. Out of an estimated 390 enterprises in Krygyzstan, 90% of output is thought to be accounted for by a few large operators (UNIDO, 2016). This is thought to keep prices for some dairy products (and agri-products generally) artificially high for consumers, allied to a high level of informality within the sector. So, while consolidation within a sector often brings benefits in terms of overall production levels, downside effects can occur in the absence of effective regulatory oversight, strong competition laws and quality controls.

Pasture land is estimated to comprise roughly 87% of agricultural holdings, yet the market for Kyrgyz meat products is considered to be relatively undeveloped, primarily owing to a heavy dependence on foreign-sourced raw materials and other ingrediants needed for processing (UNIDO, 2016). Moreover, the level of knowledge of animal husbandry techniques is often low, accompanied by some outdated technology for dairy processes. Skilled expertise in associated disciplines, such as agro-economists, stockbreeders, food scientists etc. are in relatively short supply in Kyrgyzstan, as are tertiary education courses for upskilling and knowledge dissemination in the dairy sector (Microfinancing Centre, 2011).

Since Kyrgyzstan became a member of the Eurasian Economic Union, it is estimated to have exported over 130 million USD in milk products, particularly to Kazakhstan. However, the vast majority of this total is believed to have been through informal channels (World Bank, 2015) due to the difficulties of Kyrgyz farmers in meeting international standards. While milk exports comprise one of the top five agricultural exports in the country, few dairy farmers think of that occupation as their primary employment, leading to lower standards in terms of animal husbandry. The average herd size is thus around three to five heads of cattle (World Bank, 2015).

There is thus much potential for a professionalization of the dairy sector, beginning with standardization measures at the level of small farmers and moving up through the value chain,

increasing the capacities of cooperatives, traders and dairy marts. It is only through an integrated approach that Kyrgyzstan can capitalize on the export potential in the sector, moving away from subsistence-level production.

Though the dairy farming industry shows some of the best prospects for growth, an analysis conducted by UNIDO experts has identified a number of barriers preventing greater productivity in this sector. Such factors include:

- A lack of professionalization in the dairy sector;
- Low levels of animal maintenance and husbandry techniques;
- Low yields in dairy farming;
- Low levels of knowledge and access to veterinary medicine and curative medications.
- Moreover, previous external analyses have also cited some further impediments in this regard, including a lack of integration of Kyrgyz farmers into modern supply chains, with the majority of (often unprocessed) food stuffs usually sold at bazaars or open markets; an unstable macro-economic and political climate; an unreliable judicial system; a lack of FDI; and the preponderance of small holdings all serve to constraint prospects for integration in regional supply chains (FAO, 2015).

Fisheries

In terms of fisheries, Kyrgyzstan has seen significantly diminished capacity in recent decades, principally due to the break up of some of the large Soviet-era collectives which dominated output during the twentieth century. There was a large loss of institutional capacity following the dissolution of the Soviet Union, which led to heightened job insecurity in fisheries and rupturing of supply chains (Thorpe et al., 2009). Some estimates posit that the capacity of the fisheries sector was, recently, ten per cent of that before the dissolution of the Soviet Union (Merco Press, 2009). FAO figures seem to verify this precipituous fall in production, with the annual haul declining from 1,400 tons in 1991-92 to 100-140 tons in 2008-9 (FAO, 2014).

Indigenous fishery production too faces a number of issues in Kyrgyzstan, especially in terms of allowing fishermen to join value chains. In the post-Soviet era, Kyrgyz fisheries were bedevilled by a number of structural barriers to value addition, including:

- A lack of suitable fish seed, which depressed yields significantly. Even today, this continues to present a problem, to a lesser extent (UNIDO, 2017).
- Until recently, there were also restrictive fishing laws due to environmental concerns, including a moratorium on fishing in Issyk-Kul lake and a ban on fishing whitefish and trout from 2003, which lead to a substantial degree of poaching (it is thought that for this reason, domestic supermarkets often import fish rather than trading with local operators) (FAO , 2013).
- Fish farmers often lack sustainable relationships with buyers, which hampers their ability to expand their operations.

- There is also a shortage of skills, technologies and expertise in some quarters to transition to higher value added activities (FAO, 2013).
- Local consumption of fish is also low relative to global norms (at approximately 1kg per capita as opposed to 16.5 kg globally) (UNIDO, 2016).

At present, commercial fish products in Kyrgyzstan are predominantly processed, sold either frozen, thawed or fresh. The market is in the early stage of its life cycle, with little competition or product diversification in the market at present (UNIDO, 2016). Moreover, it seems that restaurants are often reluctant to purchase locally, citing some concerns over the provenance of locally-sourced catch.

The fish market within the country is more consolidated than that of dairy farming, with two large associations comprising 53 enterprises, of which 45 are engaged solely in fish production, with an additional 3 also involved in fish processing, while two companies concentrate on feed and equipment. The more integrated nature of labour in this sector offers better prospects for a more accelerated upscaling of activities, given adequate assistance and support.

Even allowing for some of the structural obstacles to Kyrgyz exports, the picture has improved somewhat in recent years. In 2014, production increased some 23% to 805 tons, while marketable fish production increased to 1,100 tons in 2015 (UNIDO, 2017). The Government has also announced an end to the moratorium on fishing in some of the country's lakes, which should prove beneficial in terms of reducing poaching, though it is still somewhat unclear what form the future regulation will take.

Fruit and Vegetables

The fruit and vegetable sector is one of Kyrgzstan's largest processing sectors, bearing 35 companies and 91 entrepreneurs (Ibid). The main food crops grown are wheat, barley, maize, potatoes, vegetables and fruits, while sugar beet, cotton and tobacco are the most remunerative crops. Yet the market value for this sector is considered to be reasonably small, given the small population of the country (6.1 million), the tendency of rural populations to home produce fruit and vegetables, traditions of conserving food for winter, and the relatively low purchasing power of the Kyrgyz population at large (Helvetas Kyrgyzstan, 2004). Vegetable exports made up 5.12% of Kyrgyz exports in 2015, while other food products comprised an additional 3.15% (World Integrated Trade Solution, 2017).

The Kyrgyzstani fruit and vegetable industry suffers from some similar travails to the sub-sectors previously discussed in this chapter, despite indigenous produce generally being considered to be good quality. The country has limited arable land, with over 90% of its territory being 1,000 metres or more above sea level, and 40% above 3,000 metres (FAO, 2012). Semi-finished goods such as juices, jams, tomato and fruit pastes, as well as dried vegetables, apricots and spices provide most of the country's exports in this sector. Quality management and product placement are also often an issue: local fruit and vegetable companies have often found it difficult to compete with imported products in local shops due to concerns on standardization and product certification (Helvetas Kyrgyzstan, 2004). Further difficulties to the growth of this export sector

include irregular supplies and a reluctance to sell goods on credit to potential buyers (Helvetas Kyrgyzstan, 2004). On the demand side, shop owners are also often reluctant to sell local goods due to issues with trade requirements and service (Helvetas Kyrgyzstan, 2004).

The main underlying issue, which arguably causes most of the issues referenced immediately above, is insufficient linkages between farmers and processors/traders. This has the effect of creating a disjointed eco-system in the fruit and vegetable sector, whereby seed providers, fertilizer suppliers, raw material producers, accessory and packaging providers, processors, wholesalers and retailers can act independently of each other. This is sub-optimal on both sides, as small farmers lack the credit and knowledge to improve their produce and yields, whereas enterprises and processors struggle to distribute and promote agricultural outputs (Helvetas Kyrgyzstan, 2004).

The case of the potato industry may be illustrative in terms of some of the issues faced by crop producers in Kyrgyzstan. Production of potatoes comprises almost 60% of the domestic yield for fruits and vegetables. However, negligible processing takes place within the country's borders: typically, middle men take unprocessed stocks and distribute them domestically and regionally, keeping prices artificially high. It also results in little wealth creation for farmers, given the export of potatoes to Russia, Kazakhstan and Uzbekistan, where they are processed into other foodstuffs (UNIDO, 2016). Furthermore, in terms of food safety, few Kyrgyzstani inspectors are up-to-date with regard to food technology, microbiology or product manufacturing techniques to meet international standards, an important consideration in increasingly globalized food markets (Government of the Kyrgyz Republic, 2014b).

A favourable climate for berries, particularly sea buckthorn, has resulted in cottage industries for herbal plants, jams and jellies, and alternative medicines. Walnuts have been identified as particularly promising in terms of export potential, with average yields of between 800 and 3000 tons per annum (Ibid). It is noteworthy that in the few cases of sustainable agro-value chains in the country, the presence of a large multinational (in the case of walnuts, Agroplast of Germany) has stimulated the development of the chain to include a cooperative, a local exporter and an international importer (Kaseeva, 2013). Outside expertise, be it through the private sector or from international development agencies, is thus desirable in terms of accelerating the integration of such value chains.

However, considerable obstacles continue to exist for both farmers and processors in terms of thefruit and vegetable sector, most notably:

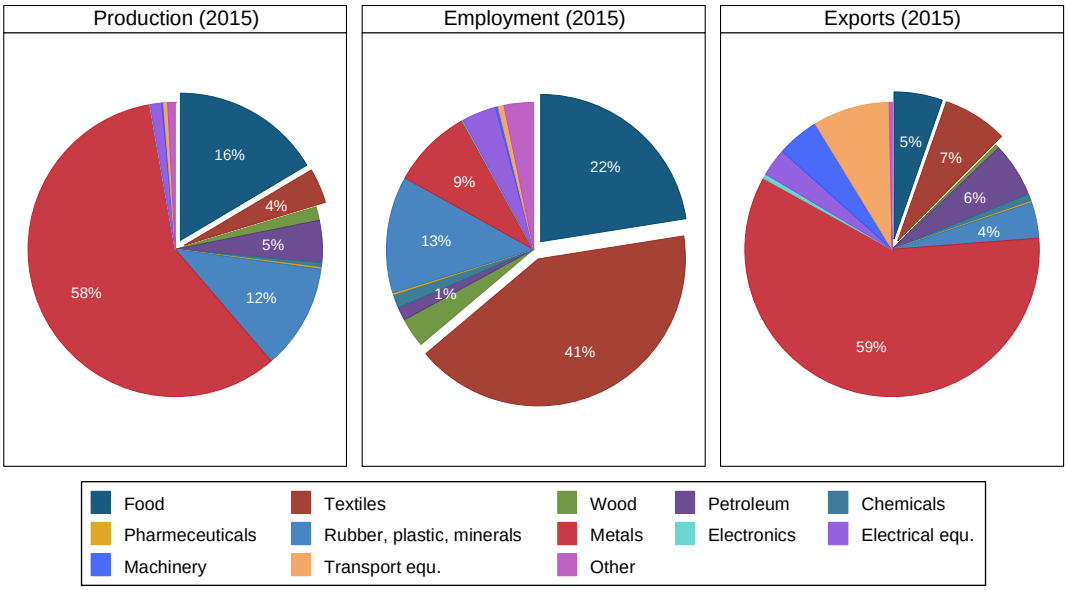
- Small production yields;
- A lack of trust between producers;
- Outdated equipment;
- A lack of reliable information for investors and a lack of knowledge for crop production;
- Lack of access to financing;

- Underdeveloped logistics' systems and issues with meeting international quality standards, such as ISO 22000 and HACCP;
- Little control and traceability within some existing value chains (UNECE and GIZ, 2015).

Size and performance of the food and beverages industry

In the Kyrgyz manufacturing sector, the food and beverages industry – which builds on the various agro-food value chains – plays a key role in terms of production, employment and exports. In 2015, it accounted for 16% of total manufacturing production and therefore ranked second, behind the very dominant basic metals and fabricated metal industry, which accounted for 58% of total manufacturing production (Figure 3-1). This, however, stands in stark contrast to its fundamental importance in terms of employment. In 2015, the food and beverages industry accounted for 22% of total manufacturing employment, which made it the second most important employer in the manufacturing sector. Furthermore, a part of the industry's output is exported. In 2015, the food and beverages industry accounted for 5% of total manufacturing exports, which made it the fifth largest exporter in total manufacturing. Generally, however, exports are dominated by the basic metals and fabricated metal industry with an export share of almost 60%.

Figure 3-1: Nominal production, employment and exports (as share in total manufacturing), 2015



Source: National Statistical Committee of the Kyrgyz Republic, UN COMTRADE.

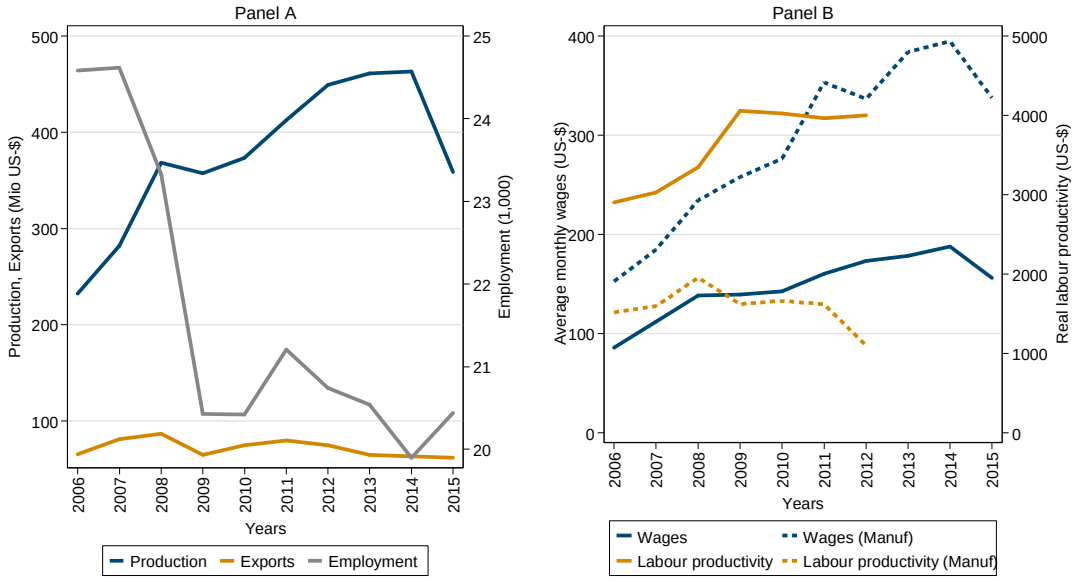
Over the last couple of years, the food and beverages industry went through a process of change. Official figures show a clear upward trend in nominal production, which doubled from around 232

million US-$ in 2006 to 463 million US-$ in 2014 (Panel A of Figure 3-2). The pronounced decline in nominal production (expressed in US dollar terms) observable in 2015 was the result of the strong devaluation of the Kyrgyz Som relative to the US Dollar.[69] In contrast, employment in the food and beverages industry followed a clear downward trend and dropped by around 17% between 2006 and 2015. The loss in employment was particularly strong between 2007 and 2009, which coincided with the global financial crisis. Similarly, exports also declined between 2006 and 2015. After an initial increase between 2006 and 2008, they continuously fell (by around 30%) between 2008 and 2015.

In general, the food and beverages industry outperformed the manufacturing sector as a whole in terms of labour productivity (Panel B of Figure 3-2). While labour productivity in the manufacturing sector started to decline in 2008, labour productivity in the food and beverages industry – which was already relatively high - continued to increase until 2009, bevor it levelled off and stagnated at around 4,000 US-$. As a result, since 2008, the positive gap in labour productivity between the food and beverages industry and the manufacturing sector as a whole has been widening. On the contrary, average monthly wages in the food and beverages industry remained generally low and only amounted to half of those paid in the manufacturing sector as a whole – despite observable labour productivity improvements in the food and beverages industry. Again, the pronounced declines in wages observable for 2015 were the result of the strong devaluation of the Kyrgyz Som relative to the US Dollar.

[69] The economic crisis in Russia and the related sharp drop in Kyrgyz exports and remittances contributed strongly to the depreciation of the Kyrgyz Som.

Figure 3-2: Development of nominal production, exports, employment (Panel A) and wages and labour productivity (Panel B) in the food and beverages industry, 2006-2015



Note: In Panel B, Manuf refers to the Manufacturing sector.
Source: National Statistical Committee of the Kyrgyz Republic, UN COMTRADE.

Firm-size structure and degree of informality

The Kyrgyz food and beverages industry is dominated by small enterprises (i.e. enterprises with less than 51 employees) (Table 3.3). However, compared to the manufacturing sector as a whole, the share of small enterprises is lower by about 10 percentage points. In 2006, the food and beverages industry officially comprised 483 enterprises, of which around 61% - or a total of 294 enterprises – were small. Following a sharp but temporary decline in 2012, the share of small enterprises again increased to almost 79% in 2015.

Table 3.3:Share of small firms, 2006-2015

ISIC Rev. 3.1	Industry	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
15-37	**Manufacturing**	**70.9**	**70.7**	**73.3**	**74.2**	**60.8**	**60.7**	**35.9**	**58.5**	**61.9**	**87.4**
15	Food and beverages	60.9	59.4	63.3	64.6	49.0	51.1	28.5	44.7	50.3	78.5

Source: National Statistical Committee of the Kyrgyz Republic.

Moreover, the degree of informality in the food and beverages industry is the second highest (Table 3.4), after the wearing apparel industry (see Table 3.6 below).

Table 3.4: Total (formal and informal) employment (2014-2016) and the degree of informality (2014)

ISIC Rev. 3.1	Industry	Formal* 2014	Formal & informal 2014	Formal & informal 2015	Formal & informal 2016	Degree of informality in 2014 (%)
15	Food and beverages	11,147	19,585	20,133	19,791	43.1

Source: National Statistical Committee of the Kyrgyz Republic and * UNIDO database.

3.1.2. The textiles and wearing apparel industry

The textile and wearing apparel industry and value chains

Globally, the garments industry has generally been growing strongly in the last decade or so, with an aggregate growth of 33 billion USD between 2008 and 2012, for example, and a projected global value of 1.56 trillion USD by 2017 (OECD, 2014). Yet textiles, clothing and leather production cumulatively are thought to have comprised just 3.3% of Kyrgyz GDP in 2014 (State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic, 2017). Historically, the Kyrgyz textiles industry and wearing apparel industry emerged during the Soviet times and date back to the 1930s. Before the collapse of the Soviet Union and Kyrgyz Independence in 1991, the textile and wearing apparel industries constituted a well-integrated value chain. The wearing apparel industry consisted of 10 large factories, while the textile industry comprised mainly medium-sized and large enterprises, which sourced raw materials, such as cotton or wool, from South Kyrgyzstan and produced wool, cotton, and silk fabrics as raw inputs for garment production (ILO, 2012).

However, with the collapse of the Soviet Union and the accompanying disruption of key economic links, the ensuing general economic collapse also manifested in the textiles and wearing apparel industry, as output collapsed, employment dropped and the value chain disintegrated.

The share of national production accounted for by various textile sub-sectors fell dramatically in many areas. A number of factors are attributable to this, chief among them being agricultural issues and a reputation of low quality for some locally-produced textiles. In terms of value chains, it is noticeable that even today, over 90% of raw cotton sourced in Kyrgyzstan is exported directly to China (Ibid). As the price of cotton is somewhat volatile, farmers are disinclined to update seed stocks, and Kyrgyz producers face competition from neighbouring Uzbekistan, where the industry receives government assistance (Ibid). Thus, value chains in the cotton industry remain severely under developed, with neglible value added within the country's borders.

Moreover, there are significant obstacles to sourcing other raw materials for garment production in the country. Since 2010, the agricultural suppliers for woollen garments almost completely reoriented their activities to the release of semi-coarse, coarse, and semi-fine wool. Of the total

volume of wool cut in recent years, the share of fine merino wool is 20-25%. Local producers can thus only avail of very small reserves of fine merino wool (State Committee of Industry, Energy and Subsoil Use of the Kyrgyz Republic, 2017).

In general, it has become unprofitable for farmers to develop merino sheep breeding, which is not a focus of public support. It is much more profitable for them to expand coarse-wool sheep breeding, where it is possible to get greater wool that is in high demand, and due to the fact that it is less troublesome than fine-fleece, which requires special care and support for breeding. It should also be noted that over the years, the quality of the processed wool deteriorated. The deterioration of the quality of wool affected the quality of woollen yarn for knitwear enterprises, in turn affecting the competitiveness of knitted clothes (Ibid).

In the face of these developments, today there are currently few local upstream raw materials and fabrics manufacturers so that garments producers predominantly source inputs from abroad, mainly from China. The majority of textile enterprises in Kyrgyzstan are small operators, with a very significant informal presence in the sector. Following political disturbances in 2010, many foreign investors left the Kyrgyz market. An estimated 95% of exports in the sector go to either the Russian Federation or Kazakhstan, while 90% of products are exported via logistics agents. The remaining 10% are sold on through bazaars in the main cities, Bishkek and Osh (Birkman et al., 2012).

In contrast, in spite of these difficulties, overall the garment production sector of the economy has picked up in recent years, particularly in terms of trade between Kyrgyzstan and Russia. For example, in 2013 alone, this bilateral trade was worth 156 million USD alone, representing 9.6% of total exports (UNCTAD, 2016).

A large proportion of this recent upswing has been accounted for by the domestic sewing industry, which employs approximately 150,000 people, the majority of which work in Micro, Small and Medium Enterprises (MSMEs). However, a note of caution must be sounded in this regard, as due to the rather disproportionate scale of the shadow economy within the country, it is difficult to confirm the relevant statistics with absolute certainty. The OECD's Country Capability Survey (2013) found that 76% of Kyrgyz clothing producers had 15 employees or less, 20% had between 16 and 50 employees and just 4% had over 50 employees (OECD, 2014). Its low cost base and a flexible system of labour remuneration have allowed it to achieve significant export growth in Russian and Central Asian markets. However, there are still significant impediments to its further growth, including low-quality raw materials and technology, low levels of qualified employees and insufficient access to credit (State Committee of Industry, Energy and Subsoil Use, 2017). Furthermore, competition from South-East Asia (principally China, Bangladesh, Viet Nam and Indonesia) have thus far acted as a disincentive to foreign garment operators from investing in the country, hindering the scope to diversify production.

It is expected that Kyrgyzstan's recent accession into the Eurasian Economic Union[70], which promises to remove tariff and non-tariff barriers to regional trade, should act as a stimulus in the long-term. Kyrgyz textile products are predominantly exported to five countries: the top partner countries in 2015 included Kazakhstan, Russian Federation, Turkey, China and Vietnam (World Bank, 2017a).

Yet Kyrgyzstan still exhibits a number of comparative advantages in terms of its textile industry, at least relative to its near neighbours in the Eurasian Economic Union. Firstly, the costs of production in the country are significantly lower in Kyrgyzstan (particularly relative to Kazakhstan), though it must also be borne in mind that the cost of production is lower still in some ASEAN countries (World Bank, 2017a). Electricity costs and labour costs are deemed to be low, with a monthly average wage of 150-500 USD in the textile industry, even allowing for a relatively low level of productivity (UNCTAD, 2016).

Moreover, the longstanding tradition and skills inherited by many Kyrgyz garment SMEs, and their familiarity with EEU markets, are also comparative advantages which may be drawn upon to maintain strong export growth, especially given that tariff barriers have been imposed on trade with non-EEU states such as China since Kyrgyzstan's accession to the Union in 2015 (UNCTAD, 2016).

However, there continues to exist a number of structural issues which impede the process of transitioning to higher value added activities in Kyrgyzstan. These include:

- A relatively low level of FDI in the sector;
- Limited sourcing options for yarns, fabrics and accessories;
- A lack of fixed capital investment to modernize technology;
- A lack of compliance with international quality standards (UNCTAD, 2016).

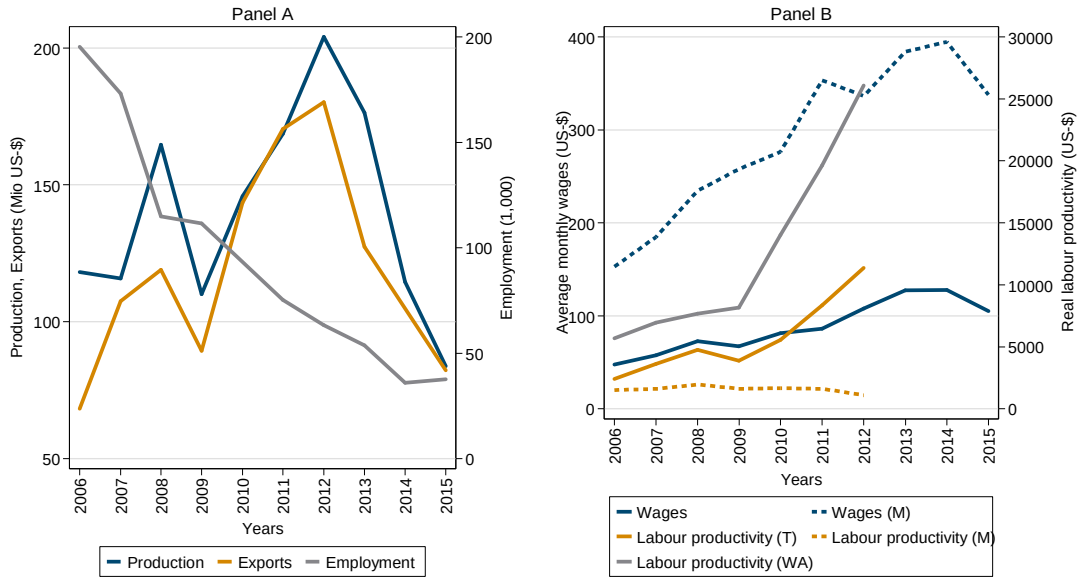
Size and performance of the textiles and wearing apparel industry

The Kyrgyz textiles and wearing apparel industry plays a non-negligible role in the overall manufacturing sector. In 2015, it was of moderate importance and only accounted for 4% of total manufacturing production, which still made it the fourth most important manufacturing industry in terms of production, just behind the coke and refined petroleum industry (which ranked third, with 5%) (Figure 3-1). However, with a share of 41%, the textiles and wearing apparel industry was the single most important employer within the manufacturing sector. With around 7% of total manufacturing exports, the textiles and wearing apparel industry was the third largest manufacturing exporter in 2015, just behind the basic metals and fabricated metal industry (with almost 60%) and the transport equipment industry (with around 8%).

[70] The member countries of the EEU include the Russian Federation; Belarus; Kazakhstan; Kyrgyzstan; and Armenia.

Between 2006 and 2012, the industry underwent some significant changes. For instance, nominal production in the textiles and wearing apparel industry increased markedly and almost doubled from 118 million US-$ in 2006 to 204 million US-$ in 2012 (Panel A of Figure 3-3). However, after 2012, production collapsed and even dropped below the initial 2006 production level. Similarly to production, exports continuously rose (with the exception of a short-term dip in 2009) and increased by around 20% between 2006 and 2012. However, after 2012, exports collapsed and by 2015 almost fell below the initial 2006 level. In contrast to both production and exports, the (formal) employment in the textiles and wearing apparel industry continuously declined throughout the entire period: it dropped by 81% from around 200,000 in 2006 to around 38,000 in 2015, which was likely the result of substantial movement of employment into the informal sector.

Figure 3-3: Development of nominal production, exports, employment (Panel A) and wages and labour productivity (Panel B) in the textiles and wearing apparel industry, 2006-2015



Note: In Panel B, M refers to the Manufacturing sector, T to the textiles and WA to the wearing apparel industries.
Source: National Statistical Committee of the Kyrgyz Republic, UN COMTRADE and UNIDO database.

Furthermore, the Kyrgyz textile and wearing apparel industry is characterised by comparatively low but over time increasing average monthly wages (Panel B of Figure 3-3). In 2006, average monthly wages were low and only constituted a third of those paid in the manufacturing sector as a whole. And while they almost tripled in US dollar terms between 2006 and 2014, the gap between wages paid in the manufacturing sector and those paid in the textile and wearing

apparel industry failed to narrow. Unlike wages, labour productivity in the textiles and especially wearing apparel industries has been consistently higher than in the manufacturing sector as a whole. In 2006, labour productivity in the textiles and wearing apparel industries was almost twice and four times higher, respectively, than in the manufacturing sector as a whole. Furthermore, due to strong labour productivity improvements in both industries – particularly in the wearing apparel industry – the gap between these two industries and the manufacturing sector as a whole broadened significantly between 2009 and 2012.

Firm-size structure and degree of informality

The Kyrgyz textiles and wearing apparel industry is strongly dominated by small enterprises (Table 3.5). The underrepresentation of medium and large enterprises may be the result of the considerably more difficult regulatory environment and the higher cost and administrative burden associated with meeting all necessary requirements (ADB, 2013a). In 2006, the textiles and wearing apparel industry officially comprised 171 enterprises, of which almost 80% - or a total of 135 enterprises – were small. Following a decline in 2012, the share of small enterprises rose again and reached around 87% in 2015.

Table 3.5: Share of small firms, 2006-2015

ISIC Rev. 3.1	Industry	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
15-37	**Manufacturing**	**70.9**	**70.7**	**73.3**	**74.2**	**60.8**	**60.7**	**35.9**	**58.5**	**61.9**	**87.4**
17-18	Textiles, wearing apparel	78.9	80.7	78.0	77.3	67.3	61.7	35.0	56.2	57.4	86.8

Source: National Statistical Committee of the Kyrgyz Republic.

Furthermore, with only around 28% in 2014, the degree of informality in the textiles industry was moderate and only half as high as in the manufacturing sector as a whole (Table 3.6). This is likely the result of the relatively high capital intensity of production in the textiles industry, which generates a non-negligible entry barrier for resource- and capital-deficient informal firms. In contrast, the wearing apparel industry is characterized by an extreme degree of informality. In 2014, around 97% of total employment in the industry was informal, which made it the industry with the highest level of informality in Kyrgyz manufacturing. In the wearing apparel industry, low entry barriers facilitate informality since production requires relatively little capital and with low monthly rents vacant factories can be rented and equipped with affordable machinery. For instance, in the sewing industry, sewing machines can be bought at 250 US-$, and a production line of only 5 sewing machines already allows for operation.

Table 3.6: Total (formal and informal) employment (2014-2016) and degree of informality (2014)

ISIC Rev. 3.1	Industry	Formal* 2014	Formal & informal 2014	Formal & informal 2015	Formal & informal 2016	Degree of informality in 2014 (%)
15-37	**Manufacturing**	**41,491**	**92,173**	**96,441**	**86,793**	**55.0**
17	Textiles	1,544	2,146	2,415	1,832	28.1
18	Wearing apparel, fur	975	33,325	34,771	26,453	97.1

Source: National Statistical Committee of the Kyrgyz Republic and *UNIDO database.

3.2. Firm-level analysis

In what follows, a detailed firm-level analysis is conducted which relies on three key data sources: First, it exploits firm-level information contained in the Enterprise Survey (ES), which is a joint initiative of the World Bank (WB) and the European Bank for Reconstruction and Development (EBRD). Enterprise Surveys are conducted by means of face-to-face interviews with managers, owners or directors of establishments on a three- to four-year rotation. They collect information on the quality of individual firms' business environment, how it is perceived by them and how it changes over time, identifying various constraints or obstacles to firm performance and growth and capturing the effects of a country's business environment on firms' international competitiveness. It focuses on the formal private, non-agricultural sector of an economy. For the ensuing analysis, the last two ES-surveys are used, namely ES-2009 and ES-2013, which refer to fiscal year 2007 and 2011, respectively.

Second, it uses information from stakeholder interviews in the three strategic industries, which were conducted during a field mission between October 7 and 12, 2017 in the Bishkek area and its vicinity to collect additional information of relevance.

Finally, whenever necessary, additional secondary sources were used for the sake of completeness.

Methodologically, the analysis relies on country-benchmarking and uses other countries as comparators to tease out, and potentially explain, apparent differences and identify key obstacles to firms' growth and competitiveness. In particular, the following main benchmark countries are used: Cambodia (KHM), the People's Democratic Republic of Laos (LAO) and Vietnam (VNM), which are all Low-Middle Income Countries and have similar income levels as Kyrgyzstan, but, in contrast to Kyrgyzstan, have successful textiles and wearing apparel industries. Another benchmark country is Moldova (MDA), which is a landlocked Low-Middle Income Country and geographically and economically similar to Kyrgyzstan, but has a more successful food and beverages industry. Finally, due to the common economic history as former country of the Soviet Union and as one major export destination of Kyrgyz products, neighbouring Kazakhstan (KAZ) is also included in the analysis.

3.2.1. Economic performance of Kyrgyz firms in international comparison

Previous chapters have emphasised the rather disappointing performance not only of the Kyrgyz manufacturing sector as a whole but also of the three strategic industries, which stay well behind their performance and inclusive growth potentials. Similar performance deficiencies also materialise at the firm-level, which becomes particularly obvious when compared to similar firms in the more successful industries of the benchmark countries.

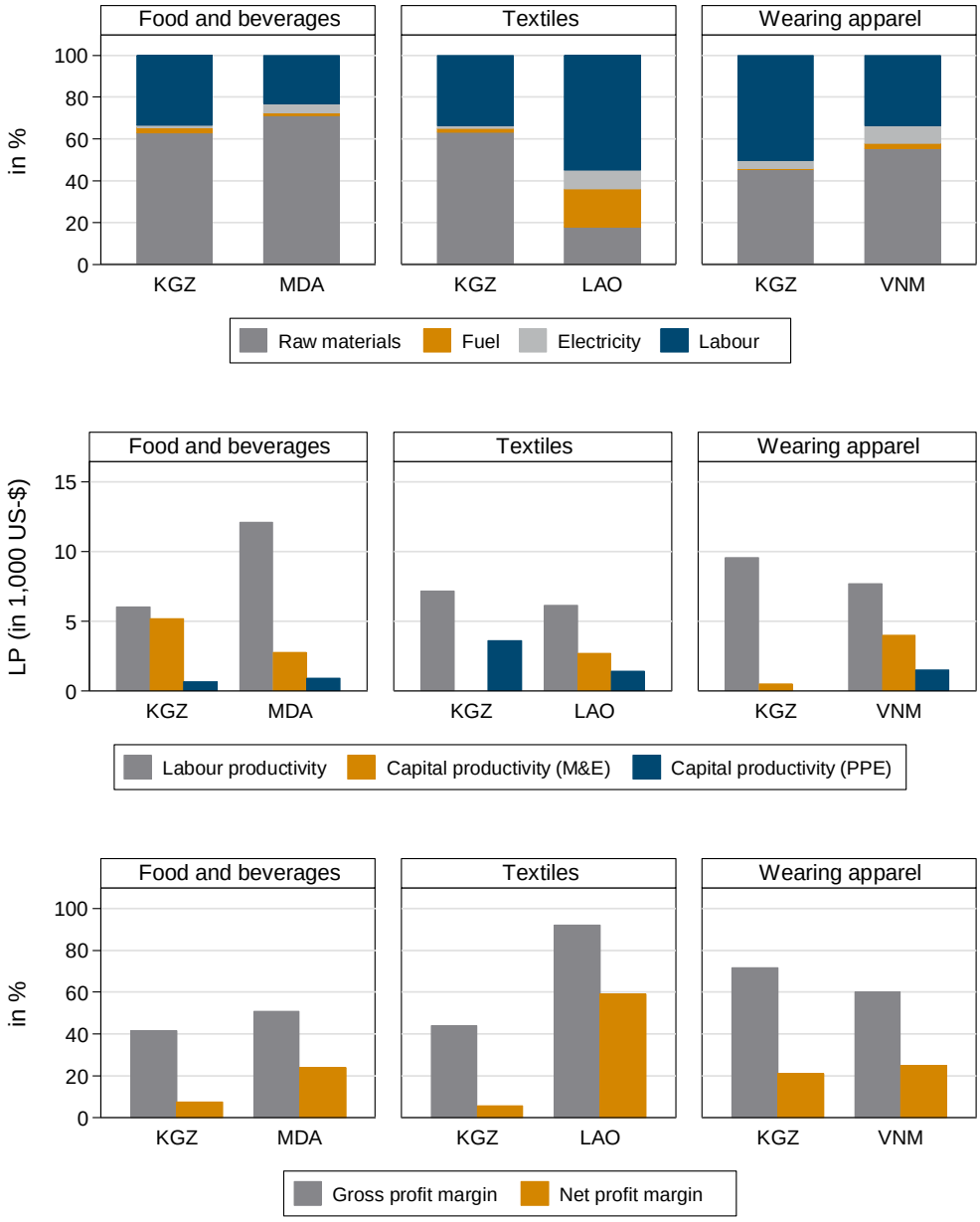
Higher labour costs and inferior performance of small Kyrgyz firms. In order to determine the relative performance of small Kyrgyz firms, they are compared with small firms in the same industry of the benchmark country (that is Moldova for the food and beverages industry, Laos for the textiles industry and Vietnam for the wearing apparel industry) with similar legal status,

ownership structure, age and export intensity. Due to the lack of sufficient data for small Kyrgyz textiles firms, the benchmarking analysis for the textiles industry is based on large firms instead.

The cost structure of small Kyrgyz firms – captured in terms of the share of raw materials, fuel, electricity and labour costs in total costs – differs from the cost structure of similar firms in benchmarking countries. This particularly applies to higher labour costs, which not only include salaries and wages but also bonuses and social security payments (Figure 3-4). Labour cost shares are higher among small Kyrgyz firms in the more labour-intensive food and beverages industry, but particularly in the wearing apparel industry, where labour costs represent around 50% of total production costs. In this respect, small Kyrgyz firms are outperformed by similar firms in benchmarking countries. In terms of labour productivity, differences are particularly strong in the food and beverages industry, where the labour productivity of Kyrgyz firms is only half of that of similar Moldovan firms, which points to substantial efficiency-issues of small Kyrgyz firms. The situation is less bleak in the textiles and garment industries where Kyrgyz firms seem to even have slight labour productivity advantages.

Interestingly, in terms of capital productivity, either measured as sales over the market value of machinery and equipment (M&E) or of total property, plant and equipment (PPE), Kyrgyz firms fare quite well. Relative capital productivity advantages characterise Kyrgyz firms in the food and beverages and textiles industries, while the rather limited information for the wearing apparel industry points to substantial capital productivity deficiencies (M&E-based). Overall production costs as well as (labour and capital) productivity deficiencies obviously also affect the profitability of Kyrgyz firms, as reflected in their gross and net profit margins. Irrespective of strategic industry considered, the net profit margin tends to be lower among Kyrgyz firms. The profitability-discrepancy is the highest in the textiles industry where net profit margins of Kyrgyz firms only amount to a tenth of Laotian firms. In view of their limited profitability, Kyrgyz firms lack internal funds and therefore have little financial leeway to finance and expand their businesses and to grow and thrive.

Figure 3-4: Cost structure (in % of total production costs) and business performance of small firms, 2011



Note: M&E refers to machinery and equipment, PPE to property, plant and equipment. Due to incomplete information for small Kyrgyz firms in the textiles industry, large Kyrgyz and large Laotian textiles firms were used instead. Labour productivity (as sales per permanent full-time employee) is measured in 1,000 US-$. Capital productivity is defined as sales over the market value of machinery and equipment (M&E) or of total property, plant and equipment (PPE).
Source: Enterprise Surveys, World Bank Group. Last wave.

3.2.2. Important determinants of the performance of Kyrgyz firms

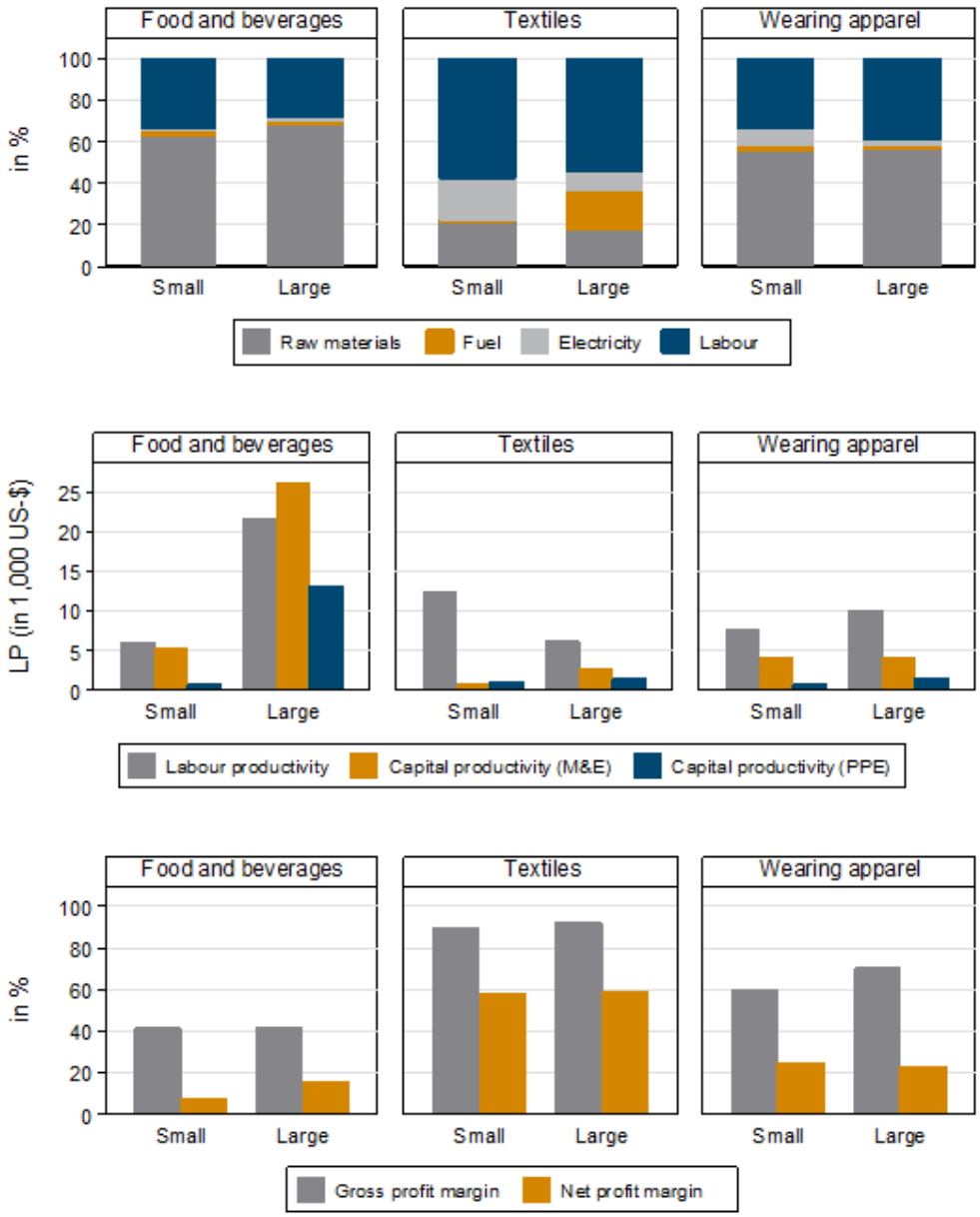
In general, the performance of firms is determined by numerous factors, some of which are more important than others. In this respect, business upscaling, FDI and exporting are three important factors that are considered to have important performance and growth-enhancing effects and will therefore be considered in what follows.

For instance, business growth (i.e. business upscaling) – from small to large – is advantageous since larger firms tend to be more productive as a result of easier access to (new) technology, finance, skilled workforce, or managerial skills (Castany et al., 2005; Van Biesebroeck, 2005; Pagés, 2010) as well as more substantial investments in training, advertising or R&D. Similarly, due to economies of scale, larger enterprises also tend to be more efficient, and consequently, more cost-competitive. FDI can bring modern technologies, managerial skills, and production and marketing networks to industries and act as engine of growth, which could have important demonstration effects on local firms. Finally, in the context of the learning-by-exporting hypothesis, exporting can translate into better business performance since internationally operating firms can tap into and harness global knowledge to improve their products, production processes, productivity, cost competitiveness, profitability and growth prospects.

Upscaling is associated with better business performance. Important insights as to the effects of, and consequently the need for, business upscaling can be derived from a benchmarking analysis between small and large Kyrgyz firms with similar firm characteristics in the same industry. It helps to demonstrate, what potential for improvement and growth lingers in small firms that awaits utilization. For the textiles and garment industries, the benchmarking analysis was based on Laotian firms and Vietnamese firms, respectively, due to insufficient firm level information for Kyrgyz firms.

In general, business upscaling, in terms of small firms becoming big, has little effect on the cost structure in the food and beverages and wearing apparel industries. The cost structure only changes in the textile industry, where the transition to a large firm reduces the electricity cost share but substantially inflates the fuel cost share, which could be the result of a stronger reliance on fuel-driven production processes (Figure 3-5). However, business upscaling helps to boost productivity and profitability, particularly among firms in the food and beverages industry. This underscores the importance of upscaling for further growth, particularly for the underperforming firms in the food and beverages industry. Furthermore, upscaling helps to improve firm performance, as labour and capital productivity increase substantially. The only exception is in the textiles industry where the labour productivity of firms halves, as they grow big. The most substantial productivity improvements emerge for the food and beverages industry, where labour productivity increases four-fold and capital productivity increases between five-and twenty-fold, depending on its definition.

Figure 3-5: Comparison of cost structure (as % of total production costs) and business performance of small and large Kyrgyz firms, 2011



Note: Due to insufficient data, the upscaling-analysis in the textiles and wearing apparel industries is based on Laotian and Vietnamese firms, respectively. For the food and beverages industry, Kyrgyz firms are used. Labour productivity (as sales per permanent full-time employee) in 1,000 US-$. Capital productivity is defined as sales over the market value of machinery and equipment (M&E) or of total property, plant and equipment (PPE).

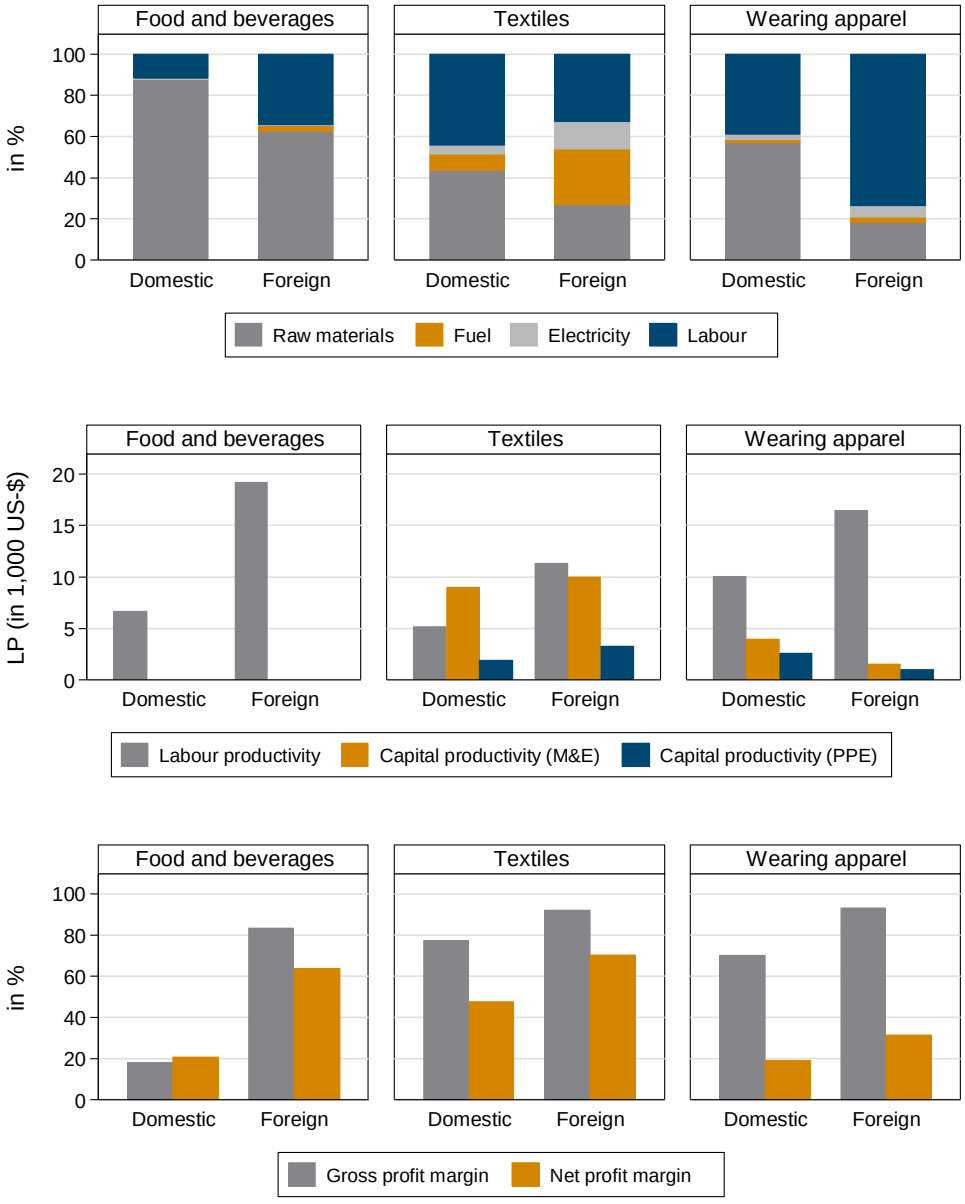
Source: Enterprise Surveys, World Bank Group. Last wave.

Moreover, productivity-improvements also materialise in the textiles industry, predominantly in terms of a doubling of the capital productivity, and the wearing apparel industry, where labour productivity increases slightly and capital productivity (PPE-based) doubles. Interestingly, except for food and beverages industry, both gross and net profit margins hardly improve as a result of business upscaling. Thus, the success of large firms is likely to come from lower prices with lower costs, which make their product competitive and allow them to sell a large volume of products.

Foreign ownership is an important driver of business performance in all strategic industries. A similar benchmarking analysis between purely domestically-owned firms, and firms with some foreign ownership participation, is conducted to shed light on the potential effects of foreign ownership on firm performance, profitability, and consequently firm growth. Due to insufficient data for Kyrgyz firms, the analysis uses Moldovan firms for the food and beverages industry, Laotian firms for the textiles industry, and Vietnamese firms for the wearing apparel industry.

Generally, some foreign ownership participation is associated with a noteworthy change in the cost structure (Figure 3-6). In the labour-intensive industries (food and beverages and wearing apparel), it leads to an increase in the labour cost share. In the capital-intensive textiles industry, both fuel and electricity cost shares increase, which is likely the result of a higher degree of mechanization of production. Furthermore, except for the wearing apparel industry, productivity improves substantially. In the food and beverages industry, labour productivity triples, while in the textile and garment industries, labour productivity doubles and almost doubles, respectively. In the textiles industry, capital productivity also improves to some extent. In addition, both gross and net profit margins increase, with the largest improvements observable in the food and beverages industry, where gross profit margins increase four-fold while net profit margins more than triple.

Figure 3-6: Comparison of cost structure (in % of total production costs) and business performance of domestically- and foreign-owned firms, 2011

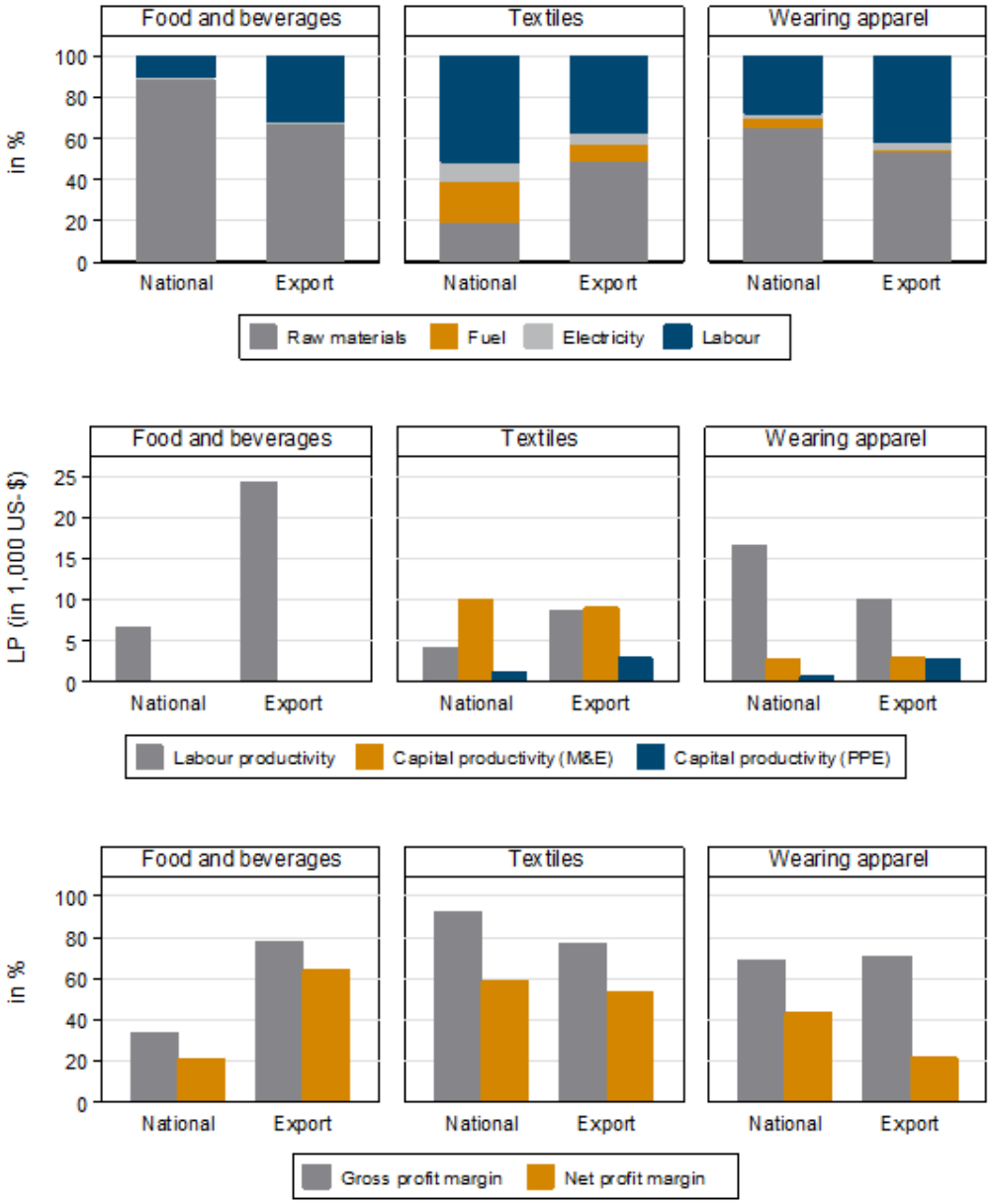


Note: Moldovan firms are used for the food and beverages industry, Laotian firms for the textiles industry, and Vietnamese firms for the wearing apparel industry. No information is available for capital productivity for domestic and foreign-owned firms in the food and beverages industry. Labour productivity (as sales per permanent full-time employee) in 1000 US-$. Capital productivity is defined as sales over the market value of machinery and equipment (M&E) or of total property, plant and equipment (PPE).
Source: Enterprise Surveys, World Bank Group. Last wave.

Exporting helps improve business performance, but only selectively so. In order to identify the potential effects of exporting, a similar benchmarking analysis is conducted between firms, which cater to domestic markets only, and firms, which export directly, on the other. Due to insufficient data for Kyrgyz firms, the analysis uses Moldovan firms for the food and beverages industry, Laotian firms for the textiles industry, and Vietnamese firms for the wearing apparel industry.

A shift from purely domestic markets to foreign markets is associated with changes in the cost structure as well as productivity and profitability improvements, particularly in the food and beverages industry (Figure 3-7). This underlines the need for export-promotion and support to fully exploit the associated performance and growth improvements. In the labour-intensive food and beverages and wearing apparel industries, the labour cost share increases, whereas in the textiles industry, the raw materials cost share rises substantially, which is likely the result of the participation in global value chains and the more intense acquisition of raw materials from abroad. Moreover, particularly in the food and beverages industry and the textile industry, but to some extent also in the wearing apparel industry, exporting is associated with an improvement in productivity. Again, productivity-improvements are strongest in the food and beverages and textiles industries, where labour productivity increases four-fold and two-fold, respectively. Capital productivity (PPE-based) also increases in the textiles and wearing apparel industries. Additionally, gross and net profit margins consistently improve and almost triple in the food and beverages industry but tend to remain unchanged or even fall slightly in the textiles and wearing apparel industries.

Figure 3-7: Comparison of cost structure (as % of total production costs) and business performance of purely domestically-oriented and directly exporting firms, 2011



Note: Moldovan firms are used for the food and beverages industry, Laotian firms for the textiles industry, and Vietnamese firms for the wearing apparel industry. No information is available for capital productivity for domestic and foreign-owned firms in the food and beverages industry. Labour productivity (as sales per permanent full-time employee) in 1000 US-$.
Source: Enterprise Surveys, World Bank Group. Last wave.

3.3. Obstacles and challenges

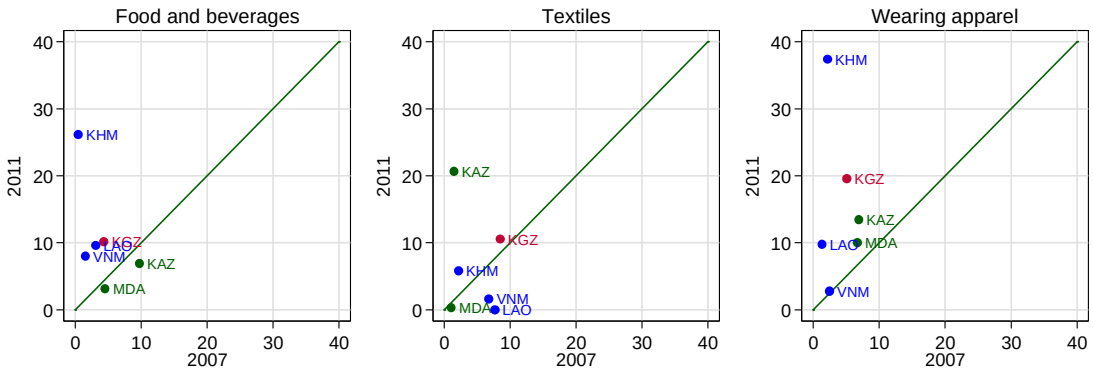
3.3.1. Key obstacles embedded in the business environment

Kyrgyz firms in the three strategic industries operate in business environments characterised by partly sizeable obstacles, which tend to affect their business operations, disrupt strategic and operative processes and ultimately impair their performance and undermine their growth prospects.

Complex and costly regulatory environment. Kyrgyz firms in the three industries operate in fairly complex regulatory environments that are time-consuming and costly to comply with. Since the regulatory environment and the cost and administrative burden associated with meeting all necessary requirements increase with firm size (ADB, 2013a), firms have a strong incentive to stay small and forego any opportunity for growth.

The degree of regulatory burden, as measured by the percentage of total senior management's time spent in a typical week on dealing with requirements imposed by the government, differs across industries. In 2011, senior managers of Kyrgyz firms in the food and beverages industry and the textiles industry spent around 10% of their time on dealing with government regulations (**Error! Reference source not found.**). In contrast, in the wearing apparel industry, the time spent on dealing with government regulations was twice as high (20%). Between 2007 and 2011, Kyrgyz firms in all three industries experienced an increase in the regulatory burden, which was relatively minor in the textiles industry but more pronounced in the food and beverages industry and strongest in the wearing apparel industry, where the time spent on dealing with government regulations almost quadrupled. The regulatory burden of Kyrgyz firms in the food and beverages industry as well as the textile industry is on average comparable to all benchmark countries. In contrast, in the Kyrgyz wearing apparel industry, the extent of regulatory burden is relatively high and is only surpassed by the Cambodian garment industry, where senior managers spend almost twice as much time on dealing with government requirements as in Kyrgyzstan.

Figure 3-8: Regulatory burden (% of time of senior managers spent on dealing with government regulations), 2007 and 2011

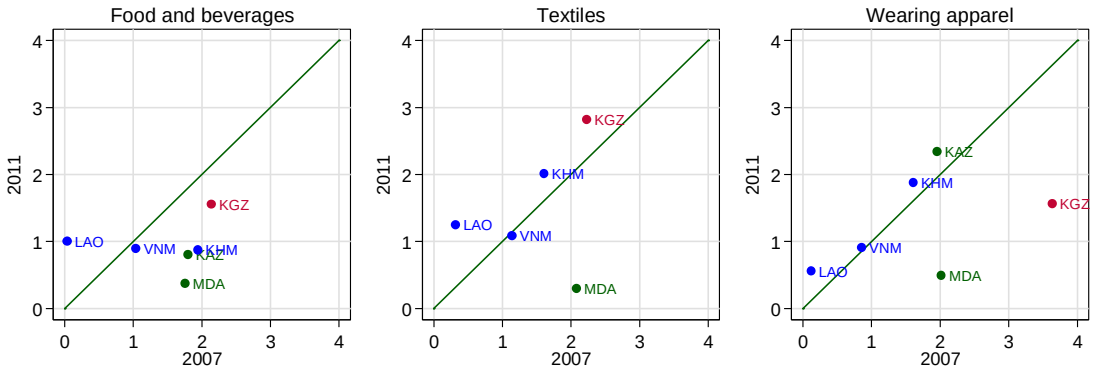


Source: Enterprise Surveys, World Bank Group. Last 2 waves.

Practices of informal firms are harmful to business operations. Formal Kyrgyz firms in the three strategic industries operate in business environments characterised by a relatively high degree of informality, which negatively affects and obstructs their business operations. This high degree of informality, particularly in the wearing apparel industry, is of major concern as it not only leads to low labour productivity, but also holds off and retards potential and nascent labour productivity improvements, which are crucial for the improvements in their international cost competitiveness and growth.

In 2011, formal Kyrgyz firms in the food and beverages industry as well as the wearing apparel industry considered practices of informal firms as a moderate obstacle to their business operations (**Error! Reference source not found.**). In contrast, formal Kyrgyz firms in the textiles industry considered practices of informal firms even as a major obstacle to their business operations. In the case of the textiles industry, practices of informal firms became even more detrimental between 2007 and 2011. In general, as can be seen from a comparison with all benchmark countries, the negative effects of informal firm practices are highest in Kyrgyzstan, particularly in the food and beverages and textiles industries.

Figure 3-9: Severity of obstacle posed by practices of informal firms, 2007 and 2011



Note: 0: no obstacle, 1: minor obstacle, 2: moderate obstacle, 3: major obstacle, 4: very severe obstacle.
Source: Enterprise Surveys, World Bank Group. Last 2 waves.

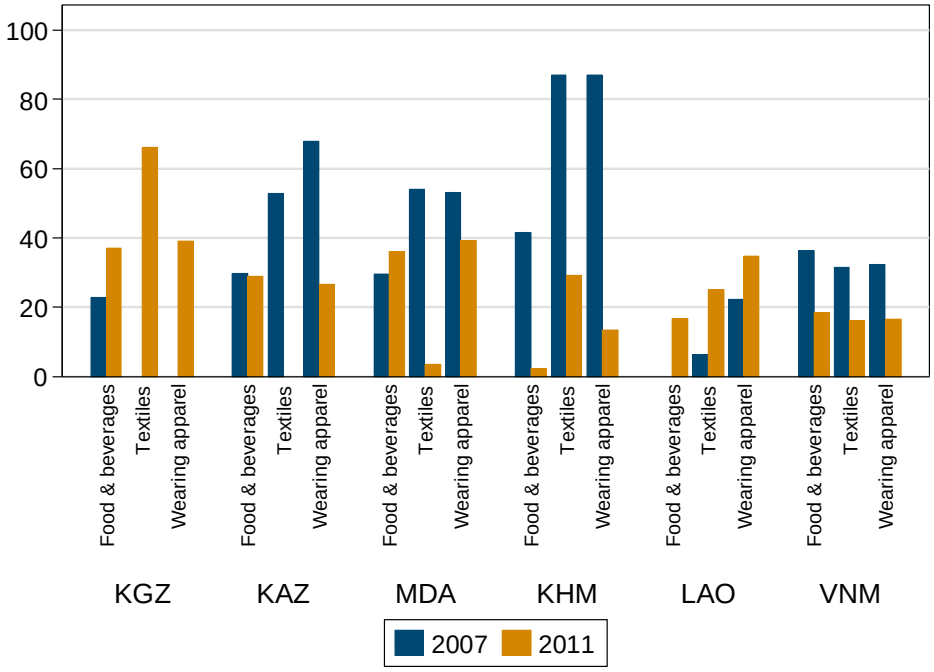
Interviews with stakeholders in the three industries revealed that the lack of tax payments and the resulting cost-advantages of informal firms are the key concern for formal firms, particularly smaller formal firms, which renders them comparatively less cost-competitive and disadvantaged. In view of this, stakeholders emphasised that except for the attempt to compete in terms of superior quality and services, no particular counter-strategy was in place.

3.3.2. Key obstacles to business operations

Cross-cutting issues

Lack of skilled workers results in a strong need for complementary training activities. An above-average proportion of Kyrgyz firms in the three strategic industries offers formal training programs to their employees. In 2011, almost 70% of all firms in the textiles industry offered formal training programs to their employees, which was by large the highest number among all benchmark countries (**Error! Reference source not found.**). In the food and beverages industry and the wearing apparel industry, around 40% of firms offered formal training programs to their employees, which is again higher than in the other benchmark countries and only comparable to the situation in Moldova.

Figure 3-10: Share of firms with formal training programs, 2007 and 2011



Source: Enterprise Surveys, World Bank Group. Last 2 waves.

Stakeholder interviews in the three industries have shown that the strong prevalence of training activities is associated with severe difficulties in finding appropriately skilled employees. Despite the relatively high unemployment rate in the country, entrepreneurs have a hard time filling vacant positions with well-qualified and trained personnel. It seems comparatively easy to find skilled personnel at the management level, while skilled and well-trained personnel at the production level is especially hard to find. In particular, stakeholders in the food and beverages industry emphasised the lack of technicians and specialists (such as VET-specialist or microbiologists). Stakeholders in the textiles industry stressed the lack of skilled dyers and machine operators while stakeholders in the garment industry highlighted that skilled sewers, machine operators, electric repair personnel and programmers (for programming of more complex knitting patterns) are difficult to find.

Stakeholders generally stressed that their difficulties with finding appropriately skilled employees are predominantly the result of low-quality and deficient or altogether lacking education schemes and systems, particularly as concerns (technical) vocational training systems and schools. Hence, in view of this, many entrepreneurs offer necessary training, either in the form of basic and short-term on-the-job practical training or vocational training in terms of medium- to long-term

theoretical and on-the-job training schemes, which last between a few days and up to three years. Partly with the help from international organizations, some firms send their employees abroad for further training in order to enable them to operate locally used foreign machinery and equipment. In the textiles industry, the lack of training facilities is seen as a result of the general decline of production (ILO, 2012). Hence, the Association of Light Industry (Legprom), which has around 600 members (predominantly apparel businesses), is taking important counter-measures. It closely cooperates with four vocational schools and has also established several vocational training centres. However, skill shortage remains an issue since not all graduates enter the Kyrgyz textiles and wearing apparel industries due to the availability of more lucrative and attractive jobs outside Kyrgyzstan.

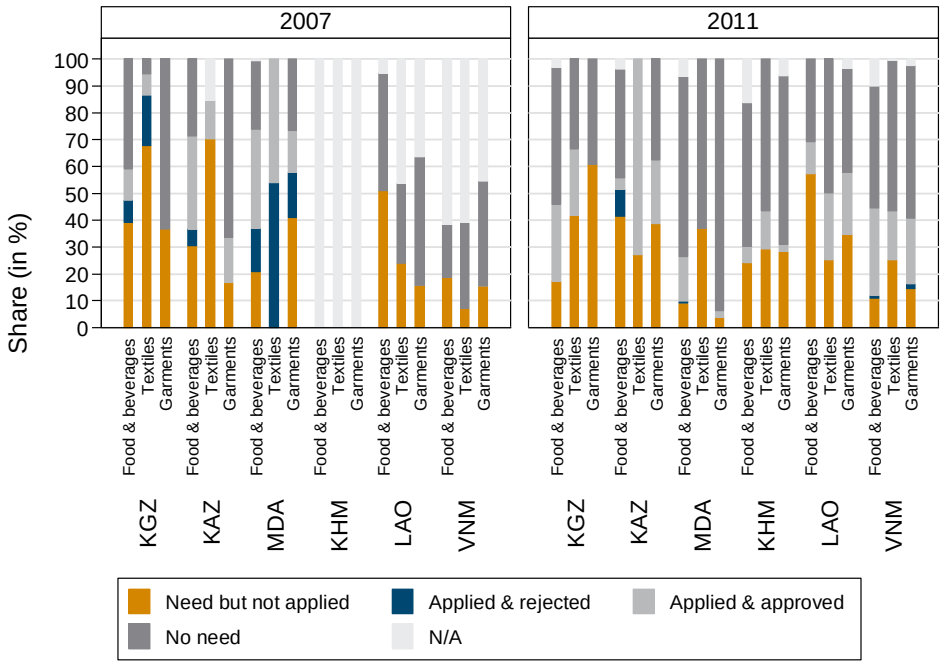
The lack of qualified personnel in Kyrgyz firms is, of course, problematic as both unfilled positions and inadequately educated employees adversely affect their performance, profitability and growth prospects. A comparison of Kyrgyz firms with low (below 50%) and high (above 50%) shares of skilled workers among production workers underscores the importance of skilled employees at the production level. This analysis demonstrates that relative to Kyrgyz firms with low high-skilled production shares, Kyrgyz firms with high-skilled production shares have higher labour productivities (6,033 US-$ per permanent full-time employee as compared to 5,463 US-$) as well as higher gross profit margins (of 38% as compared to 32%) and net profit margins (of 11% as compared to only 3%). In this context, the effectiveness, and therefore the importance, of training are further substantiated by a comparison of Kyrgyz firms with and without training activities. It shows that the additional time and resources spent on training pay off since training is associated with higher labour productivity (6,378 US-$ per permanent full-time employee as compared to 5,430 US-$), higher capital productivity (in terms of the ratio of sales to machinery investment) (17.5 as compared to 4.6) and higher gross profit margins (44.5% as compared to 33.7%).

Sizeable financing constraints: low and falling credit constraints but non-negligible credit application obstacles. Kyrgyz firms face sizeable constraints when they seek credits from the banking sector. On the one hand, in connection with credit application processes, Kyrgyz firms face or anticipate various obstacles, which prevent them from applying for credits or loans in the first place, despite their need. In 2011, such application obstacles were particularly strong in the wearing apparel industry, where 60% of all firms reported that despite the need for a credit, they refrained from applying for one (**Error! Reference source not found.**). With 40% and around 20%, application obstacles were more moderate in the Kyrgyz textiles and food and beverages industries, respectively. However, all in all, in comparison with all other benchmark countries, application obstacles were highest in the Kyrgyz wearing apparel industry, only somewhat comparable to the Laotian textile industry. Furthermore, application obstacles in the Kyrgyz textiles industry were fourth largest, only comparable to those in the Kazakh food and beverages and wearing apparel industries or the Laotian wearing apparel industry.

On the other hand, they encounter credit constraints whenever their credit applications are rejected by the respective bank. Among Kyrgyz firms, such credit constraints were still prevalent

in 2007 but, irrespective of industry considered, totally absent by 2011 (**Error! Reference source not found.**), which points to a clear abolishment of credit constraints between 2007 and 2011. In 2007, credit constraints were strongest in the textiles industry, where almost 20% of all firms received a rejection of their credit applications, followed by the food and beverages industry (almost 10%). However, in the wearing apparel industry there were no credit constraints because there were no credit applications in the first place. A closer look at firms in the wearing apparel industry shows that they exclusively relied on internal funds or retained earnings to finance working capital and fixed capital purchases, such as machinery and equipment or land and buildings.

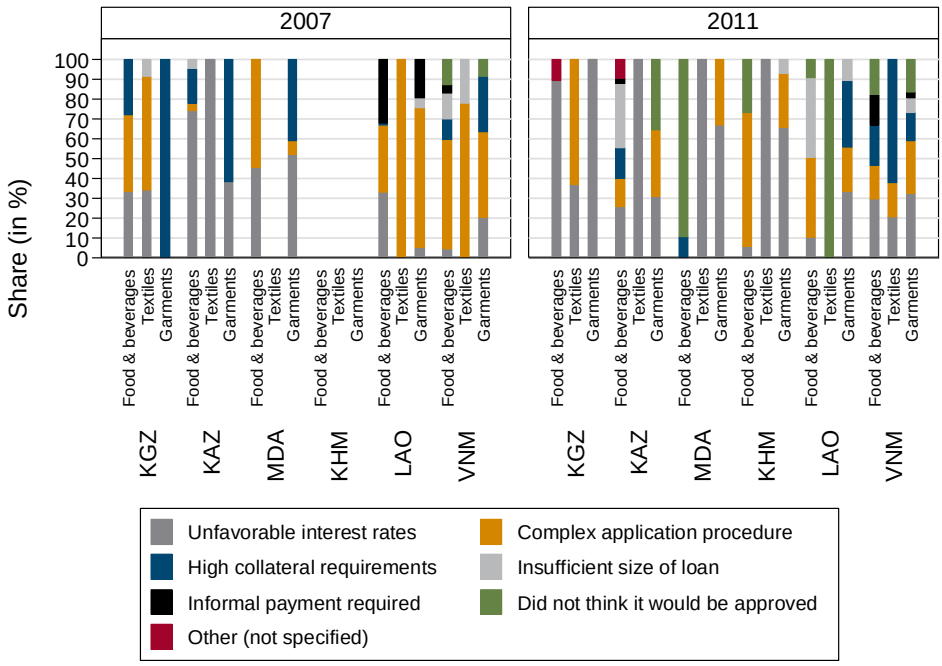
Figure 3-11: Prevalence of financing constraints, 2007 and 2011



Note: No data are available for Cambodia in 2007.

Source: Enterprise Surveys, World Bank Group. Last 2 waves.

Figure 3-12: Reasons for not applying for a credit or loan, 2007 and 2011



Note: No data are available for Cambodia and textiles industry in Moldova for 2007.
Source: Enterprise Surveys, World Bank Group. Last 2 waves.

Kyrgyz firms highlight three key application obstacles, which keep them from applying for bank loans or credits, namely unfavourable interest rates, complex procedures and high collateral requirements (Figure 3-12). In 2011, Kyrgyz firms in the wearing apparel industry quoted unfavourable interest rates as the only and single most important reason for not applying for credits, which helps to explain why Kyrgyz wearing apparel firms abstained from applying for credits in the first place. Unfavourable interest rates were also the single most important reason among firms in the food and beverages industry. In contrast, complex application procedures were the most important application obstacle among firms in the textiles industry. This is different from what was reported in 2007, when high collateral requirements were the key reason for not applying for a credit in the wearing apparel industry and also of greater importance in the food and beverages industry. Table 3.7 provides nominal interest rates firms report having to pay and highlights that Kyrgyz firms indeed pay comparatively high interest rates (20% on average) for their credits or loans.

Table 3.7: Average nominal interest rate paid for loans, 2011

Country	2011
Kyrgyz Republic	19.9
Kazakhstan	12.5
Moldova	15.4

Note: unavailable for Cambodia, Laos and Vietnam.

Source: Enterprise Surveys, World Bank Group. Last wave. European and Central Asian module only.

Interviews with stakeholders in the three strategic industries showed that access to finance was a more acute obstacle for smaller firms, which have fewer fixed assets that could act as collateral, generally have a considerably harder time repaying expensive loans due to lower profit margins, and hardly have the necessary time and resources to handle the complex application procedures.

Limited access to finance is, of course, problematic as it undermines firms' investment potential and forces financially weak firms to either scale down or totally abandon planned investment projects. In the Kyrgyz case, where many firms still operate outdated and inefficient production technologies, limited access to external funds strongly decelerates the shift to more efficient and productive leading-edge production technologies and inhibits the expansion of existing production processes and lines. Consequently, financially constrained Kyrgyz firms are unable to exploit existing growth potentials. Moreover, in the light of generally stronger financing obstacles among smaller firms and the predominance of small firms in the three strategic industries, the size of unexploited growth potential is substantial.

Low quality competitiveness of exporters leads to a high degree of exporter churning and low survival of new exporters. Kyrgyz firms increasingly enter foreign markets to move outside the confines of their small local market. Generally, exporting is important as it allows exporters to access, learn from and exploit international knowledge, which helps them to improve their products, production processes, productivity, and profitability and to grow. The associated performance and profitability advantages of exporters relative to non-exporters have already been established above. However, while the entry rate of new exporters into foreign markets is relatively high and promising, at the same time, the exit rate of exporters is relatively high as well, which is indicative of an extensive shake-out of Kyrgyz exporters in foreign markets due to their relatively poor international competitiveness. For instance, in 2012, around 50% of Kyrgyz manufacturing firms started exporting while in the same year, around 46% of Kyrgyz exporting manufacturing firms exited foreign markets and stopped exporting, resulting in a slightly positive net exporter entry rate (

Similar dynamics are also observable in the three strategic industries. In the food and beverages industry, with 87% and 86%, respectively, entry and exit rates were highest in the manufacture of grain mill products, starches and starch products, and prepared animal feeds. In contrast,

exporter entry and exit rates were lowest in the manufacture of dairy products, which also had the highest net exporter entry rate of around 10%. In the textiles industry, exporter entry and exit rates were highest in spinning, weaving and finishing of textiles. However, with around 21%, the net exporter entry was highest in the manufacture of knitted and crocheted fabrics and articles. Finally, in the wearing apparel industry, with almost 80%, exporter entry rates were particularly high in dressing and dyeing of fur and manufacture of articles of fur. This industry was also the most successful net exporter, with the highest net exporter entry rate of 44%.

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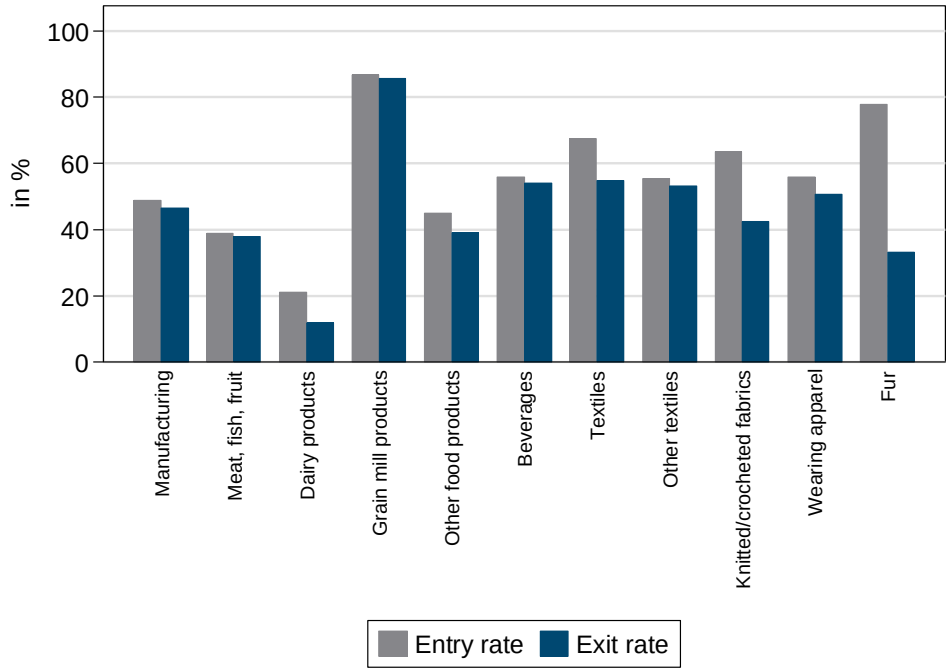
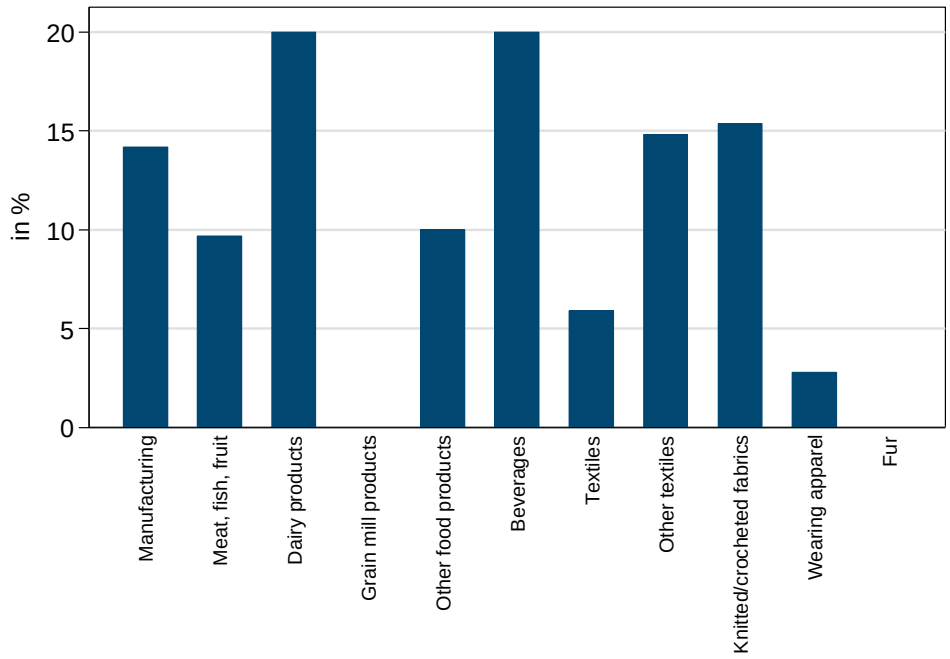
Figure 3-13: Exporter entry and exit rates, 2012



Source: Exporter Dynamic Database.

However, in the face of fierce international competition, only a small fraction of new exporting Kyrgyz firms manages to survive beyond the third year after starting to export. This is another clear sign of the weak competitiveness of Kyrgyz exporting firms, since shortly after entry into foreign markets, the majority of new exporters is forced out again. In 2009, only every sixth new manufacturing exporter survived in the foreign market beyond the third year of exporting (Figure 3-14). In the food and beverages industry, third year survival rates were particularly low in production, processing and preservation of meat, fish, fruit, vegetables, oils and fats, and manufacture of other food products, where only every tenth new exporter survived beyond the third year of exporting. In the textiles industry, the situation was even worse in spinning, weaving and finishing of textile, where only every twentieth new exporter survived beyond the third year of exporting, and worst in manufacture of grain mill products, starches and starch products, and prepared animal feeds, where not a single new exporter survived the third year of exporting. Finally, the situation was worst in the wearing apparel industry: in manufacture of wearing apparel (except fur apparel) only every 33rd new exporter survived the third year of exporting, while in dressing and dyeing of fur and manufacture of articles of fur, none of the new exporters survived beyond the third year of exporting.

Figure 3-14: Third year exporter survival rates by 3-digit ISIC code, 2009



Source: Exporter Dynamic Database.

The high level of exporter churning and the low third-year exporter survival rates point to obvious competitiveness deficiencies of Kyrgyz products, which could be due to either low cost or low quality competitiveness. Stakeholder interviews revealed that it is an issue of low quality competitiveness. Kyrgyz products suffer from quality deficiencies, which makes them internationally less competitive. This becomes obvious in Kyrgyzstan's current situation. In particular, as a member of the Eurasian Economic Union (EAEU), it has pledged to adopt the technical regulations and sanitary, phytosanitary and veterinary requirements of the Customs Union in order to ensure the safety of products and prevent diseases and pests in plants and animals. Consequently, all exporters need to obtain mandatory certificates for their products to move them freely within the EAEU. However, stakeholders emphasised that they were encountering difficulties with meeting quality standards and, consequently, acquiring quality certificates, which would allow them to export to and fully profit from the EAEU. Quality standards are also in force in other potential destination markets (such as the EU), which currently also makes these markets inaccessible for low-quality Kyrgyz products.

The importance of quality standards and certificates is also reflected in the performance and profitability advantages of Kyrgyz firms, which have international quality certificates over firms, which lack such certificates. A comparison of Kyrgyz firms with and without international quality certificates demonstrates that international quality certificates are essential for successful exporting activities and are associated with higher labour productivity (6,033 US-$ per permanent full-time employee compared to 5,617 US-$) and capital productivity (in terms of the ratio of sales to machinery investment) (10.5 compared to only 5.2). Furthermore, international quality certificates are profitability-enhancing in terms of higher gross profit margins (44.4% as compared to 38.5%) as well as net profit margins (12.4% as compared to only 6%).

Industry-specific obstacles

In addition to general and broad obstacles that affect business operations and undermine performance and growth prospects of Kyrgyz firms in all industries of interest, there are also some very industry-specific obstacles, which warrant emphasis and discussion.

Food and beverages industry

Disintegrated and dispersed small-scale raw material producers cause substantial costs. As a consequence of the land reform policies of the 1990s, the raw material base of the food and beverages industry disintegrated into a large number of small-scale raw material producers and suppliers. The concomitant disestablishment of economic facilities at the village-level forces processors in the food and beverages industry to cooperate with numerous different small-scale producers instead of a few large suppliers, which causes high coordination costs on their end. Stakeholders in the industry emphasised that, while some villages have already joined forces and re-established village-level cooperatives, still more needs to be done to facilitate the acquisition

of raw materials. This would help processors in the food and beverages industry to reduce costs and raise profitability.

Insufficient laboratory infrastructure to meet EAEU sanitary and phytosanitary requirements necessitates the use of expensive and time-consuming foreign alternatives. As a member of the EAEU, the Kyrgyz Republic pledged to also adapt its provisions on sanitary and phytosanitary (SPS) standards in the food and beverages industry, which necessitates the acquisition and provision of mandatory certificates for exports within the EAEU. Stakeholder interviews revealed that the current bio-laboratory infrastructure is deficient in size, quality, endowment and skills and therefore unable to issue the necessary quality certificates to exporters in the food and beverages industry, which would prove their compliance with EAEU SPS requirements and guarantee barrier-free exports within the EAEU. Consequently, many necessary tests need to be conducted abroad, which is not only more time-consuming and administratively burdensome, but also more costly. However, given recent developments, the situation is expected to improve as currently two phytosanitary laboratories are being built (in the Talas region) and another three laboratories are in the pipeline.[71] Moreover, repeated border issues with Kazakhstan related to phytosanitary norms also further inhibit exports of particular agricultural products, such as potatoes[72], milk or meat. Currently, due to the violation of phytosanitary norms, Kazakhstan has imposed a ban on the transit of milk (from five Kyrgyz milk processing enterprises[73]) and meat, which some stakeholders in the food and beverages industry consider a key obstacle to their current business operations. This further underlines the need for a high-quality bio-laboratory infrastructure in order for Kyrgyz agricultural exporters to fully penetrate and benefit from the larger EAEU market.

Low quality of raw materials affects the quality of final products. Stakeholders raised concerns about the quality of raw materials and of the production practices of raw material producers (farmers). Due to a lack of professional knowledge about high-quality cultivation, raw materials are often of low quality. Similarly, raw material producers sometimes do not follow the necessary quality standards in their production processes. In particular, stakeholders in the meat industry highlighted that cattle farmers tended to ignore essential quality standards when slaughtering their cattle, which is problematic for the ensuing complete chain of quality proof that is necessary for exports. In particular, firms in the food and beverages industry may face severe difficulties attaining the quality certificates that are necessary to access and export within the EAEU.

Textiles and wearing apparel industry

Absence of thread production. Currently, due to the absence of thread production in the Kyrgyz Republic, the textiles and wearing apparel production chain is fragmented and incomplete. Interviews with stakeholders in the industry show that threads are imported (from e.g.

[71] #35 Kyrgyzstan Agriculture Bulletin, BFC: https://issuu.com/bfc-pub/docs/_bfc-kyrgyzstan-agri-bulletin-35-ja.

[72] Kazakhstan bans import of potatoes from Kyrgyzstan, May 6, 2016: https://24.kg/archive/en/evraziasoyuz/180323-news24.html/.

[73] Kazakhstan bans imports of dairy products from Kyrgyzstan, AZERNEWS, October 18, 2017: https://www.azernews.az/region/120596.html.

Uzbekistan, Tajikistan but also China), which creates some unnecessary problems and costs. First, imported threads seem to be of unsatisfactory quality, which causes concerns for the overall quality and competitiveness of the final product. Second, the value-added tax (VAT) that needs to be paid on imports of thread can only be claimed and refunded 6 months after the purchase, which creates temporary cash-flow issues and requires non-negligible additional administrative efforts. Third, the whole buying and importing process of thread is logistically complex and costly.

Towards an inclusive and sustainable industrial development strategy: Recommendations and Actions that could make a difference

4 Towards an inclusive and sustainable industrial development strategy: Recommendations and Actions that could make a difference

4.1 Objectives and Institutional Aspects of an Inclusive and Sustainable Industrial Development Strategy

Making an inclusive and sustainable industrial development a key priority. The negligible contribution of the industrial sector to Kyrgyzstan's economic growth and its inability to generate a substantial amount of jobs – in particular formal jobs – demonstrate the urgent need for an industrial development strategy. While there are numerous sector-specific programmes, e.g. for the development of the food and processing industry, and a National Strategy for Sustainable development, currently in the process of being revised, so far no comprehensive industrial development strategy exists. This is bound to change though as the Kyrgyz government is currently working out a concept for the sustainable development of industry that should set the general framework and priorities.

A prerequisite for a successful industrial strategy is that it is designed and implemented in an inclusive and sustainable manner. It is imperative that the re-industrialisation of the country is transparent, open to and to the benefit of all parts of the society, thereby supporting social goals such as combat against poverty. Furthermore, environmental sustainability needs to be an integral part of the industrial development strategy, ensuring an efficient use of natural resources, a check on pollution and an increasing use of renewable energy and resources. These objectives are in line with the country's National Sustainable Development Strategy already in place.

A strong re-industrialisation push should take the form of an inclusive and sustainable industrial development (ISID) that revitalises manufacturing activities and exports and makes use of the abundant renewable energy resources efficiently. The challenges and opportunities brought about by the country's accession to the Eurasian Economic Union (EAEU) and the prospect of a depletion of the Kumtor gold mine by 2023 make the need for an accelerated industrial development even more acute.

A strong and clear institutional framework can support the effective implementation of industrial development programmes. Experiences from other countries such as Brazil suggest that the appropriate institutional setting facilitates the design and the implementation of a comprehensive industrial policy programme (OECD, 2013) that has many linkages to other policy field (e.g. education, energy, health, environment, technology). In that respect, the installation of the State Committee of Industry, Energy and Subsoil Use, which is a government unit, is a step in the right direction. This State Committee was created in 2016 in order to align and improve coherence between the policies in the interrelated fields of industry, energy and mining. The State Committee should closely co-ordinate all industrial development plans with other stakeholders, in particular the Ministry of the Economy which is responsible for the formulation of

Kyrgyzstan's medium-term (2018-2022) and long-term (until 2040) development strategy. The co-ordination of the industrial development agenda can also be supported by the Inter-Ministerial Working Committee that was established within the office of the Vice Prime Minister and has therefore the backing of the top level government, which is important for a successful implementation (Wade, 2016).

Programmes and plans need proper implementation and evaluation. An important element for the success of industrial development programmes is monitoring and evaluation. Realistically, not all initiatives launched under a broad-based industrial development strategy will be successes. Failures need to be seen as part of the process and can strongly contribute to learning, provided all activities are properly monitored and evaluated. The evaluation needs to be taken into account at the design stage of policy programmes.

The general objectives of the industrial development well known by stakeholders. The objectives of an inclusive and sustainable industrial development these can be broadly defined as *(i)* pushing up the real GDP growth rate beyond the 5% level in a permanent manner by increasing the growth contribution of the industrial sector and *(ii)* the creation of formal jobs in the industrial sector. In order to arrive at these overarching objectives, industrial development policies must strive for

- a re-industrialisation and the diversification of the production and export structure within manufacturing;
- the improvement of the cost competitiveness to improve the export performance; and
- an expansion of the formal economy.

These targets reflect the fact that as a small economy, Kyrgyzstan's industrial development is dependent on exports because of domestic demand constraints. Moreover, public support programmes should be granted exclusively to firms operating in the formal sector which may be an issue in certain instances (e.g. the textile and wearing apparel industry). In this respect, the Export Development Strategy, which is currently revised and updated, already launched some specific initiatives such as the 350 million som interest rate support programme for export-oriented industries.

4.2 Linking industrial with regional development

The industrial development strategy should be linked with regional development plans. Even within a small country such as Kyrgyzstan, economically relevant resources and capabilities are rather unevenly distributed across the territory. Therefore synergies between the industrial development strategy and the incipient Regional Policy Concept and the 20 growth points (cities) that have been defined therein[74]. These growth points will have varying interests across and within each of the strategic industries. For example, the cities Bishkek and Osh will have particular

[74] Some information on the key elements of the Regional Policy Plan has been kindly provided by the Kyrgyz authorities.

interest in incentives provided for the textile and wearing apparel industries, whereas for Naryn oblast support measures for the development of hydro power may be seen as the first priority. The necessity of in-depth knowledge about local conditions calls for making the regional dimension an integral element of inclusive and sustainable industrial development. Therefore, in line with Step 21 of the "40 Steps to New Era", depending on the financial resources granted to the envisaged business services centres within each of these city growth points, these centres could be involved as key actors in the implementation of concrete actions for industrial development.

Figure 4-1: City Growth Points across Kyrgyz regions (oblasts)

Region	Growth points
Chui oblast	Bishkek, Tokmok, Kara-Balta
Issyk-Kul oblast	Karakol, Balykchi
Naryn oblast	Naryn, Kochkorka
Talas oblast	Talas
Osh oblast	Osh, Uzgen, Kara-Suu, Sary-Tash
Batken oblast	Batken, Isfana, Kadamjay
Djalal-Abad oblast	Djalal-Abad,Tash-Kumyr, Kara-Kul, Kerben, Kochkor-Ata

Note: 20 city growth points as defined in current Regional Policy Concept of the Kyrgyz Republic
Source: Regional policy concept of the Kyrgyz Republic (presentation); map: Oriental Express Asia available at https://kyrgyzstan.orexca.com/img/kyrgyzstan/map.jpg.

Despite this regional focus, the instruments for industrial development available can and should be designed at the national level. A rule-based approach is strongly recommended, with the conditions and eligibility criteria of support programmes clearly defined. These rules must be transparent and clearly communicated from the outset. In addition, any support provided should be temporary and contingent on progress achieved with regards to international cost competitiveness. For example, any interest rate support for the textile industry should be available for all formal firms, irrespective of where they are located. The regional dimension,

however, comes into play when it comes to public investments and the provision of public goods. An example would be the decision where to establish a vocational training centre for textile workers and designers.

4.3 Industrial Policy Measures for the Manufacturing Sector

4.3.1 Principles of industrial policy support

Conventional industrial policy tools are essential to nurture manufacturing development. Classical industrial policy instruments remain key ingredients of an industrial policy strategy. Given the identified lack of cost competitiveness across most manufacturing industries, some budgetary resources need to be pledged for temporary loss financing of firms in strategic industries. For any support provided, a carrot-and-stick approach should be applied. That is, there should be continued support for firms which can give evidence of successful learning and a narrowing of the cost gap to international price competitiveness. At the same time, support is to be discontinued for firms where no such progress has been achieved or is to be expected within the pre-defined time periods. The sources for loss financing may partly come from financial incentives provided by the government, but equally from foreign investors and – given the high ODA intensity of the country - also from international donors.

Industrial policy support should focus on improving cost competitiveness. With regard to financial incentives, Kyrgyzstan has recently launched several interest rate subsidy programmes. For example, an interest subsidy programme worth 700 million som for the agro-food sector[75] was implemented, and the Ministry of the Economy earmarked 350,000 million som for an interest subsidy programme targeted at export-oriented firms, including textile and garment producers[76]. Discussions with stakeholders suggest that these programmes, together with the operations of the Russian-Kyrgyz Development Fund (RKDF), have helped to ease the problem of obtaining finance at an affordable interest rate for eligible firms. Given the impact of these measures to ease credit constraints, further actions could be considered to support Step 11 of "40 Steps to New Era" – export support. Hence, the current focus on interest rate support mechanisms appears appropriate and could be supplemented by other forms of subsidies programmes, depending on the obstacle the support measure is destined to tackle. For example, training subsidies in form of tax credits and tax rebates would make it less costly for firms to provide in-house trainings for new personnel. Irrespective of the form in which they are provided, all subsidies should be in line with the overriding target of achieving cost competitiveness. In this respect it may be useful bearing in mind that Kyrgyzstan's cost competitiveness is suffering not only from insufficient capital equipment of firms but also from a lack of planning and organisational capacity. This calls for measures that support improving management and

[75] The programme is part of the Food Industry Development Programme for 2017-2021.

[76] This programme forms part of the National Export Promotion Strategy for 2018-2022 which is still under development, although the interest rate programme is already in place. The public interest rate support brings the interest rate to be paid by firms down to 10% while the government covers the difference to the market rate (all loans are provided by commercial banks).

organisational capacity within firms. In other words, industrial policy incentives should not focus on physical investment only but pay at least equal attention to organisational learning processes.

Tax subsidies may also prove useful for luring informal firms into the formal sector. Such tax incentives will, by lowering the tax burden, make staying in the shadows relatively less attractive.

Transparent and non-discriminatory allocation of subsidies. Subsidies are to be used within the confinements of the General Agreement on Tariffs and Trade (GATT) within the WTO. As a consequence, subsidies contingent on export and local content subsidies are ruled out. Kyrgyzstan is also bound by the WTO Agreement on Subsidies and Countervailing Measures (ASCM) but sufficient room for manoeuvre in the field of subsidies remains[77]. With regard to the design of subsidy programmes, it is important that subsidies, including outright grants, are not provided in a discriminatory manner, i.e. handed-out to selected firms only. Rather there need to be clear and transparent eligibility criteria for firms to obtain support. This way equal access to support programmes can be guaranteed.

Widening and strengthening additional support measures based on existing institutions. Direct financial support for firms is useful for helping firms to achieve international cost competitiveness. Still, further action and institutions may be useful. The State Agency for Investment and Export Promotion is a very good example for such additional action. The facilities of this agency could be widened to include financial support for exporting firms[78] and could, following the example of Russia in 2011[79], finally evolve into a full-fledged export credit agency (ECA). Another tool Kyrgyzstan could envisage is the establishment of some sort of a business angel fund. Business angels are typically people with an above average education and a professional or business career who invest in and counsel young entrepreneurs. Especially, the counselling aspect would be important and could be publicly supported, given the weaknesses in managerial, technical and organisation skills. Funding of the operations would also fit into the operations of the RKDF, founded in 2014, with the objective of supporting structural change in Kyrgyzstan.

4.3.2 Import tariffs

In default of an independent tariff policy, trying to influence the EAEU Common External Tariffs seems the most effective approach. Compliance with EAEU Common External Tariffs (CET) rules out using tariff policy as an industrial policy tool. Absent any national tariff autonomy, the Kyrgyz government should try to influence the CET via the Eurasian Economic Commission in its favour. In particular, the government should prevent changes in the tariff schedules from further eroding

[77] The Eurasian Economic Union (EAEU) also contains an Agreement on Unified Rules for Granting Industrial Subsidies but as of 2017 this is not deemed to impose any substantive restrictions.

[78] The State Agency for Investment and Export Promotion was initially established as an investment promotion agency (in 2014). While its mandate has been broadened to include export promotion, so far it can only provide advisory services.

[79] Establishment of the Export Insurance Agency of Russia (EXIAR).

the manufacturing sector[80]. In case of import surges from EAEU partners, Kyrgyzstan should be prepared to make use of safeguard measures foreseen in the EAEU agreement.

4.3.3 FDI attraction

The EAEU has the potential to boost FDI from Russia and China. Kyrgyzstan's high dependence on foreign technologies implies that foreign direct investment (FDI) can have a huge impact on industrial development. Some of the current disadvantages of Kyrgyzstan in attracting FDI, such as a small domestic market and its relatively remote location, are difficult to alter. Nevertheless, the recent improvements in infrastructure – thanks mainly to investments from China in the context of its *One Belt One Road* initiative – as well as EAEU accession make Kyrgyzstan potentially a much more attractive location for FDI investors. The most promising sources for FDI are Russia and China.

Attracting FDI in strategic industries should be made a priority. While the harsh business environment (ADB, 2013a) remains an obstacle for investors, FDI inflows have been relatively high since 2010, amounting to between USD 300 mn (2012) and USD 1.1 bn (2014). Since these FDI inflows are still highly concentrated in resource-based industrial activities (mainly mining and more recently oil refining), a priority of an FDI attraction policy should be to foster FDI inflows in industries that were identified as strategic. Apart from a modernisation of equipment, FDI inflows would also bring in foreign managerial and organisation skills that are dearly needed. From the perspective of technology spillovers, a particularly supportive type of FDI for Kyrgyzstan would be joint ventures between foreign and Kyrgyz companies.

The aforementioned State Agency for Investment and Export Promotion already has FDI promotion tools in place. The impact of the current FDI attraction strategy, however, appears to be limited because the agency does not offer more to potential foreign investors then the general economic framework conditions such as a low corporate tax rate (10%). Hence, additional incentives for foreign investors may be envisaged. Another important aspect in the context of FDI promotion is the national treatment of foreign investors and protection against expropriation[81]. In this respect, solving the current legal disputes with major existing FDI investors[82] would probably help to confirm the Kyrgyz government's commitment to these principles.

4.3.4 Specific Measures for the food and beverages industries

The analysis of obstacles to the business operations of Kyrgyz firms in the food and beverages industry points to a number of measures and initiatives, which can be taken to overcome them and fully exploit the industry's growth and employment generation potentials.

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[80] So far, Kyrgyzstan could not reap the full export potential from EAEU. Rather in the short-term, export performance was negatively affected, especially in the field of agricultural and agro-processed goods where exporters found it hard to comply with the stricter enforcement of enhanced quality standards by EAEU partners (World Bank, 2017a).

[81] See http://www.invest.gov.kg/en/why-kyrgyzstan/liberal-legislation-and-benefits-for-inv/

[82] Noteworthy in this respect is the legal dispute with the Canadian gold mining company Kumtor, the largest FDI investor in the country.

More investments are needed to update and expand the bio-laboratory infrastructure. Currently, there is a lack of modern veterinary and phytosanitary laboratories in Kyrgyzstan, which could issue the necessary quality certificates to exporters, in compliance with EAEU sanitary and phytosanitary (SPS) requirements. Hence, substantial investments are needed not only to modernise the existing but outdated bio-laboratory infrastructure but also to enlarge it to make it more easily accessible to exporters throughout Kyrgyzstan, who frequently have to send their food products to Kazakhstan for more expensive testing. Since 2015, sizeable funds have yearly been re-allocated from the Kyrgyz budget for this purpose (1.5 million soms in 2015, 26.5 million soms in 2016, and 29.9 million soms in 2017).[83] Furthermore, the Cabinet of Ministers allocated 5.9 million soms for the repair of the Issyk-Kul Laboratory for Plant Quarantine, which began in 2016.[84] Moreover, the Russian Federation and Kazakhstan provide additional financial support for the swift modernisation of the Kyrgyz bio-laboratory infrastructure.[85] As a result of all these efforts, by the end of 2017, 13 phytosanitary and veterinary laboratories are planned to be put into operation.[86]

Furthermore, the skills of the laboratory staff are outdated and inadequate to fulfil the new and more sophisticated tests that need to be conducted in compliance with all SPS requirements. Hence, complementary training is necessary to teach the current staff how to operate the new equipment and conduct all the necessary tests. International specialists, who possess the necessary expertise and skills, best offer such training activities in cooperation with the Kyrgyz government. There is generally also a shortage of professionals with the appropriate level of technical skills to staff and run the existing and future testing facilities, which necessitates efforts to improve the quality of education in the required fields and an overhaul of the current curricula to meet new needs and standards.

Production and service cooperatives as means to integrate and coordinate raw material producers. The disestablishment of village-level distribution facilities in the course of the land reforms of the 1990s has left food and beverages processors with the difficulty of having to coordinate with numerous small-scale raw material producers. In this context, cooperatives should be actively promoted, which solve the problem of the large number of small-scale raw material producers. Production cooperatives could bundle labour and means of production to produce more sizeable production volumes, which makes them attractive to processors. Service cooperatives, which go beyond pure production cooperatives and combine production functions with storage, marketing or distribution functions, could also market and sell their produce, in total, to processors. For such rather complex cooperatives to work, however, managerial skills are needed that are typically not found among farmers. Furthermore, there is a need for investments

[83] Kyrgyzstan annually increases cost of creation phytosanitary laboratories, KG 24, 2 June, 2017: https://24.kg/english/53527_Kyrgyzstan_annually_increases_cost_of_creation_phytosanitary_laboratories/.
[84] Ibid.
[85] EEC: http://www.eurasiancommission.org/en/nae/news/Pages/17-03-2017-2.aspx.
[86] Kabar, 9 March, 2017: http://kabar.kg/eng/news/zheenbekov-the-opening-of-phytosanitary-laboratories-in-the-country-is-the-result-of-kyrgyzstans-accession-to-eeu/.

to establish the necessary infrastructure so that affordable funds need to be made available for the construction of the necessary collection, storage/cooling and distribution facilities. Currently, due to the high risk linked to agricultural lending and its generally lower profitability, agricultural lending is rather underdeveloped in Kyrgyzstan, with the Kyrgyz Agricultural Finance Corporation (non-bank financial institution) as the key player.

In general, the number of active cooperatives in Kyrgyzstan is low. In 2011, there were 1,400 registered cooperatives, of which only 400 were active (Lerman, 2013). The majority of registered cooperatives was production cooperatives. The low number of cooperatives can to a large extent be explained by (i) farmers' wish to preserve their independence, (ii) lack of information about the merits of cooperatives, and (iii) the lack of trust in managers and other members of the cooperative (Lerman, 2013). A large-scale country-wide information campaign could help to acquaint the rural population with the workings and merits of cooperatives and encourage their widespread establishment.

Training and information activities to guarantee raw materials of better quality. Due to the absence of professional knowledge about high-quality cultivation (which shows in the use of low-quality seeds, several seeds reproductions, or the non-use of fertilizers, among others) and farm management, raw materials for the food and beverages industry are often of low quality. Capacity-building initiatives are needed, such as training and information campaigns, to teach raw material producers how and where to acquire high-quality inputs (such as seeds), where to purchase and how to use fertilizers, and how to adjust their production processes to produce high-quality raw materials, which fulfil all the necessary quality standards, particularly those necessary for export. The establishment of demonstration and training units or centres would greatly help in this respect. Furthermore, poor storage and cooling facilities affect the quality of farmers' produce, which is a cause of concern for processors. However, due to limited funds, raw material producers are often unable to acquire the necessary high-quality inputs for the production process, upgrade or build good storage and cooling facilities, or invest in technological upgrading, which calls for special agricultural lending schemes particularly tailored to their needs with affordable interest rates and sensible payback periods. Some Kyrgyz food and beverages firms, particularly big exporters, provide their raw material suppliers with the necessary high-quality inputs (such as seeds, fertilizers etc.), which guarantees their continuous supply with the needed high-quality raw materials.

Easier access to finance helps to enable and encourage necessary investments. Raw material producers and food and beverage processors face substantial barriers to finance, which keeps them from raising the necessary funds to buy not only the required inputs for the production process (fuel, seeds, feed, fertilisers, etc.) but also to invest in new and productivity-enhancing machinery and equipment, such as modern storage, cooling, packaging or feeding facilities. As a consequence, prevailing potentials for productivity improvements, growth or employment generation are inhibited. Both, the rather underdeveloped lending landscape and the terms and conditions of available funding schemes form almost insurmountable barriers, which limit the access of Kyrgyz firms in the sector to funds. Currently, agricultural lending schemes are in limited

supply and the banking system is rather small, though alternatives, such as microcredit institutions, exist. But most importantly, barriers are predominantly associated with complex and time consuming application procedures as well as high interest rates and high collateral requirements, which affect small firms the most. Given the predominance of small firms in the industry, MSME-oriented funding mechanisms are needed. However, some important developments are on the way as the Ministry of Agriculture and Food Processing Industry has recently implemented a funding scheme and offers 700 million Soms of subsidised credit loans to the agricultural sector for its development.

Foreign investors can contribute greatly to agricultural and processing performance improvements. Starting at the level of individual farmers, all the way up the value chain, there is a strong need for an increase in production capacities and qualities. Lack of knowledge, unsustainable production processes, small-scale production or outdated machinery and equipment all contribute to generally low levels of productivity and profitability, while poor knowledge about high-quality cultivation and production processes or the lack of compliance with Hazard Analysis and Critical Control Points (HACCP) standards result in low-quality inputs, which undermine the industry's full export potential. In this context, as direct sources of capital, skills and technology, foreign investors, both in agro- and food and beverages production, could play a key role by bringing in skills to improve production processes, increasing production scales, or assisting in technological upgrading and innovation.[87] Apart from leading-edge machinery and equipment for production, the overall logistics infrastructure represents a priority area of investment, as modern and sanitized storage facilities and cooling systems are in dire need. Furthermore, foreign skills and knowledge could also help to address currently unattractive packaging and design, upscale and expand marketing strategies and increase product diversification. In the latter case, the development of new products unique to the region could create the necessary comparative advantage and export potential. The stronger presence of foreign investors could also help Kyrgyz agro-processors to specialize and become competitive in particular production stages and more strongly integrate into regional and global value chains.

In the past, the food and beverages industry was able to attract foreign investors – particularly from the region – and next to mining, has been the third top FDI recipient (UNCTAD, 2015). Furthermore, according to fDi.Markets[88], of all 51 greenfield investment project announcements between 2003 and 2017, three were realised in the food and tobacco industry with an overall investment volume of 75.5 million Euro, which created 376 jobs in total.

4.3.5 Specific Measures for the textiles and wearing apparel industries

Similarly, the analysis of obstacles in the textiles and wearing apparel industries points to some key issues, which calls for counter-measures to guarantee that the industries can utilise their full growth and employment generation potentials.

[87] In the agricultural sector, entry of foreign investors is limited to joint ventures or non-equity forms of production, since the use of agricultural land is limited to Kyrgyz nations.

[88] fDi Markets is a database collecting information on cross-border investment monitor (see. https://www.fdimarkets.com/). The investment projects listed therein reflect committed greenfield investment projects as well as announcements of such projects.

Re-establishment of full production chain to fully exploit production and income generation potentials. To fill the gap in the textiles and wearing apparel production chain, the missing thread production, which is currently substituted by imports also from China, needs to be revitalised. The inferior quality of imported thread paired with the increase in tariffs as a result of the implementation of the common external tariff (CET) of the EAEU, calls for the import substitution of threads by domestic production, either through new entrants or vertically integrating existing local firms. This would not only guarantee a quicker and cheaper supply with local thread but also allow local cotton and wool producers (farmers) to cater to a bigger market and also provide local produces with the opportunity to capture more of the value chain and generate more income. Currently, some promising initiatives in this direction are already in place[89] or in the pipeline. However, since thread production is highly capital-intensive, substantial investments are necessary to acquire high-quality production facilities. Hence, for this purpose, sizeable funds need to be made available in terms of low-interest loans. An important funding source is the Russian-Kyrgyz Development Fund (RKDF), which offers medium- to long-term concessional loans at interest rates of between 4 and 5% to firms in priority sectors, such as the light industry. As of August 11, 2017 761 projects worth 246 million US-$ have already been approved, predominantly in agriculture and the manufacturing industry. Foreign investors could also play an important role in this context, not only as a source of capital but also of skills, knowledge and know-how.

A more dedicated FDI outreach strategy needs to be encouraged in the textiles industry. Despite low costs of production, so far, FDI promotion strategies of the past have failed to attract sizeable foreign investments into the textiles and wearing apparel industries, due to political instability, governance issues, and competition from lower-cost markets in South-East Asia, (UNCTAD, 2016). Hence, in view of the positive effects of FDI, a more dedicated and effective FDI promotion strategy needs to be developed and implemented. Superior access to capital, skills, know-how and technology through foreign investors would help the textiles industry to address some of its key challenges by easing access to needed funds, modernising the currently outdated technology, improving production efficiency or improving poor design and product differentiation capabilities.

Better marketing of Kyrgyz apparel products in regional and global markets to diversify export markets. Exports of Kyrgyz apparels are regionally concentrated in a few markets: 95% of apparel exports go to either the Russian Federation or Kazakhstan, which exposes textiles exporters to strong uncertainties and volatilities stemming from these two markets. Hence, to expand the customer base and more strongly differentiate export markets, better marketing and an improvement of the poor marketing capabilities are needed to better place Kyrgyz textiles and garments products in regional and global markets, particularly in the EAEU.

Better access to finance is imperative for the full exploitation of growth and employment generation potentials. Firms in the textiles and garment industries still greatly work with old and outdated machinery and poor equipment. To replace, update and expand existing production

[89] Kyrgyzstan: new Tekstil Trans factory to boost textile sector, February 6, 2017: https://fashionunited.uk/news/business/kyrgyzstan-new-tekstil-trans-factory-to-boost-textile-sector/2017020623406.

processes and develop new production capabilities, substantial investments are needed. However, firms in the industries face non-negligible barriers to finance, which keep them from exploiting existing growth and employment generation potentials. High interest rates, too complex application processes and high collateral requirements are most problematic, particularly for small firms. In view of the rather small banking sector, additional funding sources need to be made available, which offer administratively simple credits at affordable interest rates. An important source in this respect is the RKDF, which offers loans of up to 1 million US-$ (at 5% p.a. in US-$ or at 10% p.a. in KGS), for a period of five years to SMEs.

Upscaling of business operations is key for competitiveness in production to increase. The majority of firms in the textiles industry operate small-scale production facilities at relatively low productivity levels, which makes them unattractive and unable to compete for large orders from big customers. Hence, investments in the expansion of business operations are necessary, which are, however, made difficult by the sizeable financing barriers that exist in the banking sector and the lack of affordable and attractive alternatives. In this respect, the Association of Light Industry (Legprom) is taking important steps. In line with the objective of developing clusters, it is in the process of setting up a large industrial park (technopolis), which puts textile and garment firms 'under one roof'. It therefore helps to reduce industry fragmentation and exploit prevailing production and marketing synergies to increase productivity, product quality, product design capacities, competitiveness and market outreach. For this purpose, the government already provided 41 hectar of land.

Compliance with international quality standards needed for products to become exportable, particularly to the EAEU. Currently many firms in the Kyrgyz textiles and wearing apparel industries are unable to meet regional and international quality standards or, as has become necessary since Kyrgyzstan's accession to the EAEU, the technical regulations of the EAEU. As a consequence, textiles and wearing apparel firms are unable to acquire the necessary quality certificates, which bars them from exporting to the EAEU or other markets, such as the EU. Hence, measures are necessary to improve production processes and subsequently the quality of products, to ensure their exportability to the EAEU, or even the EU.

4.4 Specific Measures for the Hydro Power Sector

Based on the analysis of the current situation of hydropower generation, there are a number of initiatives that can be taken to overcome the existing problems which have prevented the exploitation of the country's vast hydropower potential to a greater extent.

Food-Water-Energy Nexus and mediation – cooperation the best solution for regional stability and investment attraction. The International Union for the Conservation of Nature (IUCN), the EastWest Institute (EWI) and the International Water Association (IWA) assessed potential pathways for cooperation in Central Asia across the food-water-energy nexus to respond to high-

priority challenges. They came up with five Action Plans, which addressed high-priority nexus challenges with project proposals (IWA, 2015), recommending *inter alia*:

- A system of payment in exchange for ecosystem service provision, ensuring that wealthier downstream users cooperate financially in protecting upstream water resources. Upstream country's decisions can impact the quality and quantity of water resources for downstream countries. If upstream and downstream countries share costs, and in effect, would create a system of payment in exchange for ecosystem service, it could provide better collaboration and better success in solving challenges. The funds will be used to monitor and improve water quality.
- Building an integrated basin-wide information system on natural resource use. In order improve cooperation between upstream and downstream countries, a system should be created for strengthening information exchange and cooperation at the regional and national levels.
- Strengthening regional economic integration as a catalyst to simultaneously minimize border disputes.
- A network of training centres for improved irrigation capacity building and service. There is high land degradation due to inappropriate irrigation techniques represents a huge problem to upstream and downstream countries. It is necessary to raise the professional skills of water specialists, farmers, and water user associations through the establishment of professional training centers. These centers could improve knowledge on the use of water in the basin, and equip water users to continue re-evaluating water use practices.
- A network of Nexus Knowledge & Innovation Centres to tackle food insecurity. This would improve working knowledge on nexus issues, and would create cooperation on the nexus at regional and national levels. It would define each country's water demand, and would verify existing data on water use and water needs (IWA, 2015).

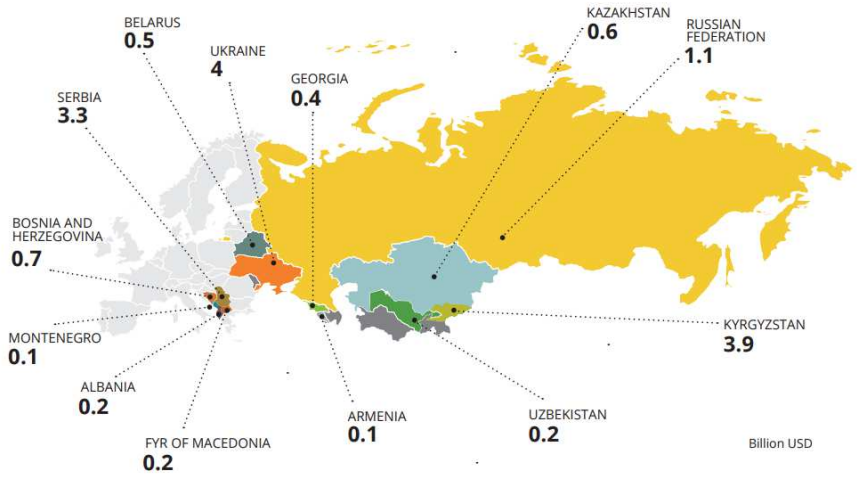
Kazakhstan could play an important role here as a regional mediator in Central Asian water questions, and as it is economically the strongest of the Central Asian countries. The Chu-Talas Commission (Kazakhstan-Kyrgyzstan) is taken as a success story for water cooperation in Central Asia supported by the United Nations Economic Commission for Europe (UNECE) and other donors (Zinzania, Mengab, 2017). All the countries in the region agree with its strategic objectives, but cannot find mutually acceptable forms of water resource use. Nevertheless, if achieved, regional cooperation would be beneficial for all the involved parties.

Electricity tariff increase. To make the electricity sector more sustainable, it is important to increase electricity tariffs. It would help to solve inefficiency in production, limit rising wasteful demand and provide funds for investments in the sector. However, it should be noted that it is important to strengthen targeted assistance to low income households as part of the social security dimension of such a reform package. Currently the safety net does not cover all in need and offers only modest support to the extreme poor.

Increasing the price will help create jobs, improve comfort and health, and increase the reliability and quality of energy services, and in general will improve the quality of life for Kyrgyz citizens. However, there is considerable scepticism amongst the populace regarding such plans, presenting a political challenge for policymakers in the country.

Coherent policies. Hydropower project planners highlight the need for guidance through integrated programmes and coherent policies in the energy sector as regulatory documents often lack coverage on how to follow and implement requirements (Ministry of Energy and Industry of the Kyrgyz Republic, 2013).

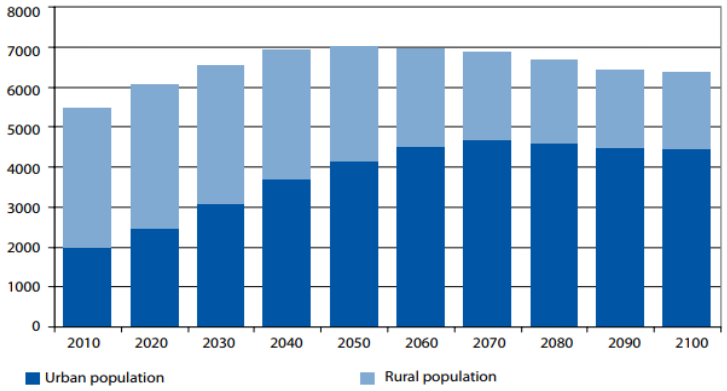
Figure 4-2: Cumulative Renewable Energy Investment in Selected Countries, 2004-2015



Source: UNECE (2017)

Hydropower project planning. It is very important to determine the criteria for the selection of economically feasible projects. Project planners should take into account manifold aspects, among others: hydrological, geological, technical, and territorial socio-economic conditions as well as seismic activities, landslides, sedimentation, as well as demographics and changing urban/rural population (GoK, 2009; Ministry of Justice of the Kyrgyz Republic, 2015; Abdolvand et al., 2015).

Figure 4-3: Urban/rural population perspectives 2010-2100



Source: GoK (2009)

The education system – knowledge sharing. Several studies have pointed out that the key setback for hydropower development is a lack of local qualified experts who can install and maintain hydropower projects. The few Kyrgyz specialists available are in high demand and they are generally unmotivated to share or teach their knowledge because there are few incentives for knowledge sharing. The situation could be improved by government involvement and organised training courses.

Green Energy Systems. Due to seasonality, streams are more likely (than larger rivers) to freeze in winter. This leads to unfavourable economic conditions for commercial SHP plants (WSHPDR, 2016). Therefore, it is advisable to combine them with other RE systems to ensure a continuous energy supply (IHA).

Financial support. A major barrier for rural renewable energy projects is affordability and the absence of financial mechanisms that are adapted to the renewable energy connected to the isolated grids (not connected to the central electricity grid). Financial support in the form of (i) affordable credits, (ii) subsidies on construction materials or (iii) donor support from the Kyrgyz Government or international organisations could help in this regard.

One person in charge in community projects – could help operation & maintenance. Non-repair of damaged systems has been identified as a major restriction in many rural community based projects (Nachtnebel, 2014; Liu, Pistorius, 2012). Reasons for non-repair of SHP systems included non-availability of spare parts, high cost of repair and maintenance, long travel distances as well as negligence interfered with the repair. Improving these aspects might help avoiding negligence issues (Liu, Pistorius, 2012).

Women's involvement could help informational barriers. Public acceptance of renewable energy has been identified as one of the main barriers to SHP development in Kyrgyzstan (Nachtnebel,

2014). In studies it has been observed that women were less impartial and more interested in maintenance of RE systems. The reason for this is that men are often responsible for the labour-intensive duties of RE systems (e.g. assembling/refilling a solar barrel by hand), while women are the actual beneficiaries (e.g.in homemaking tasks). Therefore, greater involvement of rural woman in SHP project would help them to be successful in long run (Liu, Pistorius, 2012).

4.5 A competitive exchange rate

A slightly undervalued real exchange rate increases the chances of a successful industrial development. In contrast to the sector-specific issues discussed in the previous section, the exchange rate is often considered as the most horizontal industry policy tool. Kyrgyzstan has no official exchange rate target and maintains a managed float strategy with occasional interventions to mitigate fluctuations in the exchange rate of the Som. As a result, and partly due to the inflow of foreign assistance, the economy has operated with an almost chronically overvalued exchange rate. With regards to trade with EAEU partners, the exchange rate appears to be even more strongly overvalued, especially since 2015. This overvalued real exchange rate acts like a uniform tax on Kyrgyz exports and undermines the competitiveness of Kyrgyz products. With the ongoing dismantlement of remaining barriers to trade within the EAEU, such factors as competitive exchange rate become even more important.

Cross-country evidence (e.g. Rodrik, 2008) shows that an overvalued exchange rate makes the already difficult task of engineering an industrial development even more difficult. This implies that Kyrgyzstan would be well advised to aim for a slightly undervalued exchange rate in order not to undermine other efforts in this respect. Since the interest rate has been brought down drastically in the course of 2016 (World Bank, 2017a) to 5%, the government may consider additional measures. In particular, it could use the managed float regime (either direct interventions to lower the som exchange rate or lifting of interventions that prevent the exchange rate to decline) to weaken the exchange rate, while at the same time keeping an eye on the impact of a depreciation on debt sustainability[90]. How exactly and at what speed the exchange rate depreciation should be engineered is to be seen but it should be borne in mind that a competitive exchange rate is, in combination with industrial policy measures, a sine qua non condition for an export-led industrial development strategy as is necessary for Kyrgyzstan.

Kyrgyzstan could benefit from a proper exchange rate co-ordination within the EAEU. In light of the EAEU arrangements, pressures on exchange rates in one of the EAEU partners also induce the need for symmetric adjustments in other members. Some form of exchange rate coordination is desirable in the context of the EAEU to avoid beggar-thy-neighbour scenarios, which already became an issue recently as the sharp depreciation of the Russian rouble in 2014 forced a cascade

[90] This is imperative as foreign debt is denominated in foreign currency so that a depreciation of the domestic currency raises the foreign debt (in domestic currency terms).

of devaluations in the partner countries pressurized and displeased by sudden significant external competitiveness gains of the Russian producers.

4.6 Aligning macroeconomic policies with the needs of industrial development

The general monetary and fiscal policy frameworks ought to be supportive of reindustrialization and competitiveness, which appears to be a challenge on account of the multiple external and internal vulnerabilities in Kyrgyzstan. Great pragmatism should be taken in implementing monetary and fiscal policies to ensure this does not lead to detrimental effects for industrial competitiveness.

Balancing public investments and industrial support measures with the need for fiscal consolidation. While public debt sustainability should remain the guiding principle of fiscal policy framework, it is important that fiscal consolidation effort is carefully adjusted as regards its specific revenue and expenditure components. In particular, it is important to avoid excessive pressures on the already struggling agricultural and manufacturing sectors and ensure that public investment capable of crowding-in private investment does not fall victim to fiscal consolidation efforts.

The primary focus of fiscal policy should rather be on permanent measures improving efficiency of tax administration and effectiveness of public spending in light of weak institutions. Similarly, efforts to broaden and diversify the tax base should continue, but caution should be exercised to smooth social costs of contracting informal economy. So rather than trying to suppress informal sector activities, the industrial policy measures should lure informal firms into the formal economy.

The overdue review of the subsidies (IMF, 2017) that is demanded by the IMF in the context of the current 3-year (2016-2018) Extended Credit Facility (ECF), may also lead to higher revenues if it leads to a tariff reform in the energy sector that curtails existing energy subsidies. These additional proceeds may be channelled into the support for industrial development.

Monetary policy is severely constrained by the need to satisfy multiple objectives simultaneously. Given the absence of external sector stability – a prerequisite for effective inflation targeting – the effectiveness of the current monetary policy framework is questionable. The situation is aggravated through weak monetary policy transmission channels on account of a weak financial system and high dollarization. The de facto capacity of the current monetary policy setup to anchor inflationary expectations and mitigate nominal shocks is rather limited. Nevertheless, monetary policy should strive to find the right balance between external competitiveness, risks for the financial sector and keeping inflation at bay. As conventional tools of the inflation targeting framework alone do not provide sufficient instruments to allow for a more flexible approach to simultaneously address these objectives, this calls for a mix of instruments to be implemented to insulate against free movement of speculative capital, i.e. capital controls and macroprudential measures focusing on capital flow management thereby relaxing the constraints of the 'impossible trilemma' should such a need emerge.

Considering a switch to a nominal GDP targeting regime. Alternatively, Kyrgyz authorities may also wish to consider the possibility of switching from an inflation targeting to a nominal GDP targeting policy. For this reason an alternative monetary regime, in particular a nominal GDP targeting approach may constitute a more appropriate policy framework that is better suited to deal with terms-of-trade and other external shocks (Frankel, 2012) and maintaining a stable and competitive real exchange rate and low real interest rates. Given the current inflation target (5-7%) and the average real growth rate in the past (approximately 5%), a target set at around 10-12% appears to be reasonable. The nominal GDP targeting approach would avoid unreasonable monetary reactions in case of external shocks or internal supply shocks (e.g. further incidences at Kumtor gold mine). The advantage of this regime over the current inflation targeting regime is that it would allow Kyrgyzstan to follow a more rule based monetary policy without constant need to resort to discretionary policy action as under the current inflation targeting policy.

Synchronising wages with productivity growth. Wage policies need to be pursued with care, pursuing the double objective of further reducing poverty and raising living standards on the one hand and improving international cost competitiveness on the other hand. Until now, the wage level in Kyrgyzstan, especially in the two strategic manufacturing industries, are very low by international standards. Nevertheless, wage increases over the past decade have been quite high compared to the development of labour productivity. For this reason a wage setting rule that aims for wage progression aligned with labour productivity growth should be installed (see for example also Nassif et al., 2017). This should help to maintain the currently highly competitive wage rates. At the same time minimum wage rates in all sectors should be increased to a level where they are binding since current minimum wage levels are far below market rates. How this wage policy approach and minimum wage rates can be applied to the informal economy is unclear but implementing the scheme in the formal part of the private sector could be a first step.

4.7 Priority Areas in Improving the Economic Framework Conditions

Focus on the key weaknesses in the broader economic framework. Like many developing countries, Kyrgyzstan faces a plethora of problems related to the economic framework conditions. Given the severe resource constraints it is imperative to identify the key bottlenecks that impede industrial development, hold back entrepreneurship and firm growth. According to information obtained from stakeholders the main obstacles for businesses, which the Kyrgyz government may want to consider prioritising, are summarised in the following. To this we add transportation and logistics as an issue which the Kyrgyz authorities have already make one of their priority actions.

The impediments to growth include public goods which are typically beyond the control of firms as well as shortcomings in the management capacity and entrepreneurial spirit on the side of entrepreneurs themselves. With regards to the latter, the main responsibility lies with the firms themselves but public action may help to overcome some obstacles without interfering directly with private sector activities. In contrast, in the case of public goods, by definition the government has a prime responsibility. The public goods include both industry- and trade-specific elements as well as general framework conditions.

4.7.1 Industry-related and export-oriented framework conditions

Weak trade infrastructure annihilates opportunities of export-oriented industries. A key issue for Kyrgyz manufacturing firms are technical regulations[91], standards and certifications. These issues are an increasingly important issue for firms worldwide but the situation is particularly acute in Kyrgyzstan, affecting domestic sales as well as export activities. To some extent the problem lies within the firms as many of them are unable to meet international or even regional quality and safety standards. For example, for firms in the informal economy official export activity is ruled out due to the lack of necessary certifications. But even for registered firms compliance with standards and technical regulations is difficult. This can be considered as the first layer of the standardisation and certification problem.

The second layer is the fact that with the accession to the EAEU, Kyrgyz firms have to comply with technical regulation of the customs union if they were to benefit from the large common market. The technical regulations of the EAEU are more demanding than Kyrgyz national regulations (UNECE, 2015). The EAEU's approach to technical regulations is a Unified List of Products, which are subject to mandatory requirements. This Unified List includes most of Kyrgyzstan's major export items, including products of the light-industry (e.g. knitted goods, garments, carpets, fur products) as well as food products and beverages (UNECE, 2015). Moreover, Kyrgyz firms are also struggling with fulfilling international and regional (i.e. EAEU) standards, including sanitary and phytosanitary (SPS) control measures. The national registry of standards, maintained by the Centre for Standardisation and Metrology (CSM) is dominated by the regional – i.e. CIS – GOST[92] standard. While there are attempts to harmonise GOST standards with international standards

[91] A technical regulation is a legal act that defines the set of safety requirements that a product has to comply with.

[92] GOST standards were originally developed by the government of the Soviet Union and means 'State Standard' (gosudarstvennyy standart).

(ISO), important differences remain for example in the field of SPS rules. The GOST standards are numerous and detailed, making it difficult for the private sector to fulfil them. The standards are equally difficult to supervise and control. Compliance with the required standards is challenging especially for a small country like Kyrgyzstan which features insufficiently funded and staffed SPS agencies.

Hence, Kyrgyzstan currently finds itself in the difficult situation that it is bound to comply with the GOST-based SPS system. Given that the Kyrgyz food industry is mainly exporting to EAEU partners (Russia and Kazakhstan) plus Uzbekistan, it is still advisable to strive for compliance with the requirements of the GOST standards. The SPS requirements illustrate well the general infrastructure-related problems associated with standardisation and certification: the lack of up-to-date certification bodies and testing laboratories where domestic exporters could obtain all necessary certificates. This constitutes the third layer of the standardisation and certification problem. Due to the insufficient capacity of national laboratories, EAEU members such as Kazakhstan do not recognise certificates of compliance for food products issued in Kyrgyzstan and insist on a re-certification by an accredited laboratory in Kazakhstan (UNECE, 2015).

Some changes for the better but still a long way to go. Public authorities seem to be fully aware of the problem and there has been substantial improvement since EAEU accession thanks to Russian support for the establishment of testing and certification facilities in Kyrgyzstan. Nevertheless, consultations with firms from the food and beverages industry revealed that as of October 2017 there are still instances where food products need to be sent abroad for testing which creates extra costs. Moreover, all food and beverage companies that are HACCP certified – an UN food safety standard that is increasingly requested by EAEU partners[93] – have obtained their certification from foreign certification companies. These certificates are expensive and are an option only for the larger companies in Kyrgyzstan.

Another common problem is inefficiencies and hold-ups at border controls (UNECE, 2015). Most of the border control posts are not equipped with up-to date facilities that allow for a speedy border clearance. Given the insufficient domestic capacities, support from EAEU partners in improving the quality of the services at border control posts seems inevitable. Hence, in order to speed up the build-up of appropriate trade infrastructure, Kyrgyzstan is dependent on foreign support from EAEU partners and international donors. Technical co-operation should hence be focussed on this area.

Another issue with customs control are informal payments. According to a survey by UNECE (2015), more than 70% of the firms that were interviewed reported that they make in the process of customs clearance. These payments may serve the purpose of speeding up the process and avoid long delays or risk the damage of goods in the course of physical inspection. But at the same

[93] HACCP stands for Hazard Analysis and Critical Control Points and are a set of food safety testing principles recommended by the Codex Alimentarium issued by the United Nation's FAO.

time they also add to the costs of businesses therefore counteracting international competitiveness.

Skill shortages show up mainly at the secondary level of education. The opinions of businessmen and businesswomen on the availability of skilled labour force vary considerably across firms and sectors but there is a general pattern. Most stakeholders were of the opinion that the skills of engineers and other professionals with tertiary education were deemed adequate, while severe shortcomings at the secondary level were reported (e.g. machine operators, technicians for repair works). The low and apparently deteriorating qualification of medium-skilled workers is related to the insufficient quality of vocational training schools. Major problems of vocational training schools include the lack of modern equipment which would allow training apprentices on up-to-date machinery; outdated curricula and a lack of knowledge on the side of vocational education teachers. While international donor organisations such as ADB and GIZ of Germany implemented several vocational education and skill development projects, especially in the garment industry, as of 2017 the availability of skilled textile workers has been reported to be a critical issue.

Larger firms (respectively industry associations such as Legprom) respond to the shortage of qualified skilled workers by providing in-house training for new staff or establish a technical training centre in co-operation with existing vocational training schools. The latter have been realised with the technical and financial support from international donors.

In order to ease this problem of a skill shortage at the medium skill level, more investment in vocational schools is needed. The initial vocational training is a public good which is why the government clearly has a responsibility in this area. At the same time, current status quo when many firms train their staff in-house anyway may suggest the implementation of a dual vocational training system. In such a dual system apprentices receive formal education at vocational schools but practical training in the firm where they are already employed during the duration of the apprenticeship (see Box B4.1). This approach envisages a burden-sharing between government and the private sector which has the potential to be advantageous to both sides.

Given the budgetary constraints, initiatives in the realm of vocational training need to focus on and be tailored to the requirements of the strategic industries. By providing training subsidies, for example, the government could increase the interest of private firms to train apprentices. This would be in line with the envisaged investments into the education and training system for 'light industries' that feature prominently in the government's 'Jany Dorogo – Kyrk Kadam' (40 Steps) programme as one of the public policy measures supporting the creation of clusters in these industries[94]. Importantly, the quality of the training provided by firms and their capacity with respect to qualified and experienced staff needs to be closely monitored.

[94] See Kadam 25 of the programme.

Box B4.1 The dual system in Germany

An essential feature of vocational education and training in Germany is the so-called dual system. Under the dual system the initial vocational training takes place at two different places, a company and a vocational school. Typically, the initial vocational training period under the dual system is three years (Hippach-Schneider et al., 2007) and young people can start their training immediately after completion of compulsory education with no additional requirements. Trainees learning under the dual system enter a private-law vocational training contract (*Lehrlingsvertrag*) with a company. The actual training takes place mainly in that company where trainees typically spend 3-4 days per week but supplemented with 1-2 days training at a part-time vocational school (Hippach-Schneider et al., 2007). The in-company training of apprentices is monitored by the relevant autonomous industrial bodies (Chambers). These bodies also control the quality and suitability of enterprises and the training personal. Upon completion of the vocational training course, trainees have to pass an examination (*Lehrabschlussprüfung*) and receive their certificate.

The dual system is an institutional arrangement whose primary function is to guarantee the supply of well-trained skilled workers. Binding requirements in the training directives by the Federal Government ensure a uniform standard concerning the training quality. As a consequence people completing an initial vocational training programme for one of the 344 training occupations have the necessary qualifications and competences to practice an occupation as a skilled worker (*Facharbeiter*). The German government actively supports the in-company training of young people in the framework of the dual system. This means that the government aims at increasing the supply of training places. An illustrative example is the Federal Ministry of Education and Research's 'Jobstarter' Programme which supplements the 'apprenticeship pact' of 2004 (*Nationaler Pakt für Ausbildung und Fachkräftenachwuchs in Deutschland)* between the Federal Government and the employers' association of German industry (Hippach-Schneider et al., 2007).

It is often argued that the German vocational training system for skilled workers is one of the major strong points in Germany's industrial policy that to a large extent takes the form of *Ordnungspolitik*, the German variant of general framework polices. The fact that skilled workers are to a large extent trained within companies means that workers from the very beginning of their vocational training gain practical on-the-job experience but at the same time they also receive formal education at vocational schools. Since the cost for vocational training has to be borne by the companies themselves (with public incentives for offering vocational training or disincentives for companies not doing so) the investment in skilled workers in the dual system is also more likely to be aligned with demand in industries. This is because firms in declining industries with no need for additional personnel are less likely to offer initial training places. The fact that the in-company training takes place in a framework of well-defined qualification criteria and that actual training is also monitored ensures that trainees receive high quality education and training. Another advantage of the dual system is that young people learning in companies acquire highly specialised skills needed in the particular company with which they have their training contract. This specialised knowledge is important in industries that build on incremental (and partly non-codified) in-house knowledge such as the automobile industry or the machinery industry (Bock-Schappelwein et al., 2013).

4.7.2 General framework conditions

Continue co-operations with neighbouring countries to improve transport and logistics infrastructure. As in most developing countries, there are severe shortcomings in road and rail infrastructure which are partly due to geographical factors (such as land-lockedness and an average elevation of 2,750 meters above the sea level[95]). In the case of the road infrastructure the main issue is the degradation of roads which is owed to a lack of fresh investments and maintenance. In contrast, the railroad network is in reasonable condition but the network is very limited and the Northern part of the network is directly not linked the network in the Southern part of the country.

While, apart from one company in the non-metallic mineral resources sector, firms did not mention transport and logistics (high tariffs charged by freight forwarders) as one of the key obstacles that foil their business opportunities, improvements in this area are supportive of cost competitiveness.

Therefore it is reasonable that the government fully commits and supports further improvements in the physical transport infrastructure. Interesting projects already under discussion include the railroad line from Osh to the Chinese border post at Torugart and further to the nearby terminal of Kashgar (China) – would lower transport costs for firms in the South of Kyrgyzstan. In fact, this railroad project could be of strategic importance as it would turn Kyrgyzstan into a transit country linking Uzbekistan with China. In general, Kyrgyzstan should welcome the provision of foreign finance for infrastructure projects such as those, which form part of China's "One Road – One Belt"-strategy, should be supported by Kyrgyz authorities.

Lack of legal certainty for firms risks to hold back investment in manufacturing activities. There is overwhelming consensus that the respect of property is one of the quintessential requirements for the functioning of a market economy. In this respect, the positive aspect in Kyrgyzstan is that the liberal economic stance makes it comparatively easy to set up a business. For this reason Kyrgyzstan also fares comparatively well in the Doing Business Ranking of the World Bank, occupying rank 75 in 2016, far ahead of more dynamic lower middle income countries such as Cambodia (131) or Laos (139) (World Bank, 2017a). While the law provides for a standard protection of investments (domestic and foreign), loose enforcement of these laws undermines the security of existing investments and private property (UNCTAD, 2017). For these reasons there remains a perceived risk of expropriations and illegal seizing of existing companies by private groups. This perception in the private sector is in line with a study by the World Bank and the Swiss Cooperation Office in Kyrgyzstan (2011), according to which only 34 per cent of respondents were satisfied with court protection of property rights. In this context it is noteworthy that legal disputes between the Kyrgyz government and foreign investors are numerous and typically lengthy. While conflicts with foreign investors are discouraging for potential new investors so urgently needed, the even bigger problem associated with the lack of

[95] Given the mountainous terrain, there is for example no connection between the Southern railway line leading from Issyk-Kul region via Bishkek to Kazakhstan and the Southern lines.

sufficient protection of property rights is that small domestic firms that happen to be successful are a primary target for illegal seizing by private groups. Such firms typically do not have the financial means to enter into a legal case with the government, so that for many firms the most effective form of protection against such action is to get on good terms with government authorities.

Irrespective of whether these concerns about illegal seizing of existing companies are valid and to what extent, the government must signal its clear assertiveness to change this situation for the better. Since even in 'light-industries' such as textiles the amount of investments at stake is much higher than, for example, in most services industries, the manufacturing sector can only develop and grow, when entrepreneurs can rely on an effective protection of their assets and businesses. In present environment, a private-market driven industrial development strategy has a limited chance to succeed.

Curb the rampant informal sector activities by providing incentives for the formal sector. With between a quarter (official national data) and more than half (UNDP) of value added produced in the informal sector, the shadow economy constitutes an obstacle to industrial development for at least three reasons. First of all, productivity is considerably lower in the informal economy because it is characterised by small scale production and under-employment of workers. Secondly it is also a drain on the national budget due to the foregone tax payments and social security contributions. Thirdly, people employed in the informal sector cannot rely on even minimum labour standards or minimum wages.

Given that informality is also wide-spread in strategic manufacturing industries such as garment production, a fierce move against the shadow economy is not recommendable as it would be disastrous from a social (employment) and an industrial development perspective. Instead, a more viable solution to get on terms with the issue of informality seems to be to provide strong incentives for firms to move to the formal economy. An appropriate starting point for this would be tax incentives (see section 4.3). To further the establishment of formal firms, also outright tax holidays for informal firms that decide to register could be considered. Such a measure would be characterised by high visibility and therefore would also be a strong signal.

Fighting extra costs. The high incidence of bribery adds extra costs to businesses directly but also leads to wasteful use and outright abuse of public funds. The fight for transparency and accountability should be made a priority. In this respect the formally declared Step 20 in the "40 steps to New Era", in the country's digital strategy Taza Koom sets the way forward.

4.7.3 Support for technological and managerial skills in the private sector

Strengthening the sense of entrepreneurship. Consultation with stakeholders suggests that many businessmen and businesswomen consider the collection of information on business processes and market potential of their products as the sole responsibility of the government. While public investment and export promotion agencies and industry associations (e.g. the Kyrgyz Union Manufacturers and Entrepreneurs or Legprom for the textile industry) should be able to provide valuable information about market prospects, it should be the responsibility of entrepreneurs

themselves to collect and analyse such information. The same is true for necessary documents and certificates needed for export. Some awareness raising that entrepreneurship involves not only the technological capability to produce a product but that the production process requires careful planning, co-ordination of procedures within the firm, identification of market potential and also marketing and branding is therefore warranted. The business angels concept (see section 4.3) could be one instrument to strengthen the much-quoted entrepreneurial spirit also in Kyrgyz firms.

Mind the gaps in industrial value chains. Consultations with stakeholders revealed that in several industries, including the textile sector and agro-food processing, the lack of complete domestic value chains can create disadvantages for domestic firms vis-à-vis foreign competitors. In the textile industry, for example, both domestic cotton and wool are available. Currently, however, it seems that neither cotton nor wool processing is profitable in Kyrgyzstan due to the low volumes involved but also the low quality of these inputs. Given the low wages in Kyrgyzstan and the long tradition in garment production, there are clear comparative advantages in this industry but these could be sharpened if the existing domestic inputs could be better exploited. This would require investment in the physical infrastructure for textile processing and a quality upgrading. A cluster approach, as envisaged in Kyrgyzstan's regional development plan, appears to be highly appropriate for analysing holes in the domestic value chains in strategic industries. At the same time, absent any large foreign investments[96], closing the existing gaps in value chains also requires government support for such investments (or outright public investments). The recent opening of a textile factory producing fabrics, which benefited from a subsidised loan from the Russian-Kyrgyz Development Fund, is a good example of the initiatives that are needed. Still, there are far too few such investments, and gaps in the value chain, notably in the production of yarns, persist.

This suggests that additional public resources for loss financing of new operations that attempt to fill gaps in domestic value chains are warranted. Such support is required in the initial phase but can only be granted temporarily with clear indications about the period over which such support is granted. Also, such support should only be released after careful identification of essential inputs along the value chain where latent comparative advantages exist. This requires a proper assessment of import substitution, i.e. domestic production, and relying on the integration into regional value chains, in cases where regional partners can provide required inputs at lower costs or in superior quality. For such assessments, public authorities should enter into close dialogue with private sector actors. This way, an appropriate trade-off can be struck between closing the most critical gaps in the domestic value chains in strategic industries and exploiting the benefits from trade with (regional) partners.

[96] The involvement of Turkish business in specific agro-industries (e.g. kidney beans) can have a strong positive impact on export activities.

4.8 Prioritizing support for strong and inclusive growth

Some of the constraints facing Kyrgyzstan are specific to the country and industries; however, many of the challenges discussed in this Chapter are common in lower-middle income countries. Kyrgyzstan cannot address all the shortcomings in a short period of time to improve the competitiveness of the manufacturing industries across the board. Given the financial and human resource limitations, again common across countries at a similar income level, Kyrgyzstan should focus its efforts on the industries which have strong and inclusive growth potential to make a significant difference in the socio-economic conditions within the period of country's medium development plan. To realize the full potential, policies from macro to micro levels should be aligned for the purpose of making the labour intensive industries competitive. Such multi-level support include competitive exchange rates, investments in transport infrastructure, establishments of testing laboratories, technical upgrading to meet regional and international product standards, ease of access to finance for upscaling and modernizing production equipment, and attracting foreign capital, technologies and managerial skills through FDIs. The focus should encompass not only the level of national policies but addressing the bottlenecks of the targeted industries through the coherence and coordination of bilateral and multilateral assistance programmes. Strong competitiveness orientation across stakeholders is the key for strong and inclusive growth; therefore, the performances of the industries should be regularly compared with and evaluated against the benchmark industries in successful countries at a similar income level and comparable geographic conditions.

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