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# **TRANSITIONING TO BETTER JOBS IN THE KYRGYZ REPUBLIC: A JOBS DIAGNOSTIC**

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**CURRENCY AND EQUIVALENT UNITS**  
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US\$ = 61.02

**WEIGHTS AND MEASURES**  
Metric system

**ABBREVIATIONS**

CIS	Commonwealth of Independent States	OECD	Organization for Economic Cooperation and Development
ILO	International Labor Organization	PER	Public Expenditure Review
IZA	Institute for the Study of Labor	SITC	Standard Industrial Tariff Classification
KER	Kyrgyz Establishment Reporting sample	SOE	State owned enterprises
KIHS	Kyrgyz Integrated Household Survey	TFP	Total Factor Productivity
LFS	Kyrgyz Labor Force Survey	UN	United Nations
NBKR	Central Bank of the Kyrgyz Republic	VA	Value Added
NACE	European Industrial Activity Classification	WDI	World Development Indicators
NSC	National Statistics Committee of the Kyrgyz Republic	WITS	World Integrated Trade Solution
MoF	Ministry of Finance	W&R	Wholesale and Retail

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# CONTENTS

EXECUTIVE SUMMARY .....	v
CHAPTER 1. THE CONTEXT FOR JOBS IN THE KYRGYZ REPUBLIC.....	1
A. COUNTRY CONDITIONS SHAPING DEVELOPMENT AND EMPLOYMENT OUTCOMES ...	1
B. LABOR MARKETS IMMEDIATELY AFTER THE TRANSITION .....	5
C. CONTEXT-SPECIFIC SOLUTIONS FOR JOBS IN THE KYRGYZ REPUBLIC.....	9
CHAPTER 2. A CHANGING MODEL OF GROWTH AND JOBS .....	11
A. GROWTH RESUMPTION AND POVERTY REDUCTION THROUGH LABOR EXODUS .....	11
B. KEY SHIFTS IN EMPLOYMENT .....	13
C. GROWTH, PRODUCTIVITY AND WAGE IMPLICATIONS OF THE MODEL .....	18
D. LIMITED DEVELOPMENT OF A FORMAL PRIVATE SECTOR.....	23
E. IMPLICATIONS OF THE MIGRATION LED DEVELOPMENT MODEL ON SUSTAINABLE, PRODUCTIVE JOB GROWTH .....	24
CHAPTER 3. GROWTH, PRODUCTIVITY AND COMPENSATION DYNAMICS FROM FIRM LEVEL DATA ANALYSIS .....	27
A. A SNAPSHOT OF EMPLOYMENT IN THE FORMAL SECTOR.....	28
B. A SNAPSHOT OF GROWTH AND EMPLOYMENT OUTCOMES IN FORMAL ESTABLISHMENTS.....	33
C. UNDERSTANDING JOB CREATION DYNAMICS IN THE KYRGYZ REPUBLIC .....	38
D. IMPLICATIONS OF THE JOBS AND GROWTH DYNAMICS IN THE FORMAL SECTOR ..	43
CHAPTER 4. ASSESSING JOBS CHALLENGES AND LEARNING FROM COMPARATORS.....	52
A. DUTCH DISEASE.....	54
B. BUSINESS ENVIRONMENT .....	55
C. THE CHALLENGES OF GEOGRAPHY .....	59
D. MIGRATION RELATED CHALLENGES .....	62
E. THE MIGRATION SUCCESS STORY “TRAP” .....	64
APPENDICES .....	65
A. NOTES ON DATA AND ANALYSIS AT THE FIRM LEVEL .....	65
B. REGRESSION ANALYSIS OF NET JOB GROWTH IN FORMAL ESTABLISHMENTS .....	68
REFERENCES .....	77

## EXECUTIVE SUMMARY

1. **Jobs are a central lens to a country's economic development.** Job outcomes largely determine the growth of national earnings and are thereby fundamental to improving standards of living. The ability of an economy to provide good jobs outcomes—to create sufficient jobs for those seeking work, to generate productive jobs, and to ensure that high-quality jobs are available to the broad population—is a key measure of a country's overall development performance.

2. **This report takes an in-depth look at the development of jobs in the Kyrgyz Republic over the past decade to understand why the country has not realized better job outcomes.** Drawing on evidence at the macro, household, and firm level, it examines key shortcomings in the current migration-led, remittance-driven development model that have weakened the country's ability to create sufficient and high-quality employment opportunities and are likely to result in deteriorating job outcomes in the future. The report argues that several broad transformations will be needed to develop engines of growth in the Kyrgyz Republic outside remittances and shift to a better jobs path. The distortions and obstacles that currently prevent the expansion of private sector employment need to be unraveled; macroeconomic, regulatory, and logistical impediments to greater, more diversified export orientation need to be strategically addressed; the compensation of public employees must be reformed to reduce the level of corruption that discourages business growth; and the migration phenomenon, which will be a part of the employment mosaic for at least another decade, must be made to contribute to domestic employment creation and the country's development.

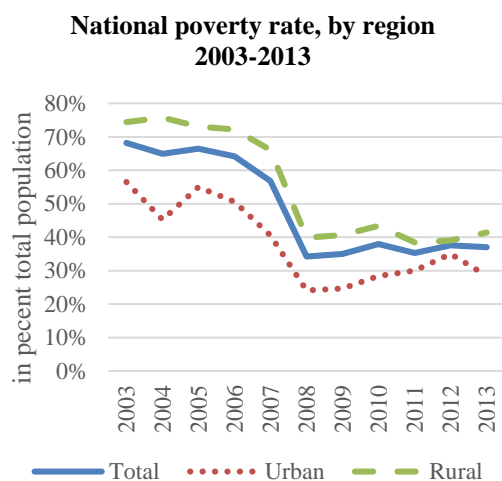
### A GROWTH RECOVERY BASED ON LABOR EXODUS

3. **Over the first decade of the 2000s, because of the severe lack of jobs and low salaries, Kyrgyz workers began to move abroad in droves in search of better employment prospects.** The country thus managed to pull itself out of the deep economic collapse following independence largely through the incomes of these migrants and the remittances they sent back home. Unofficial estimates of the extent of migration put the number of migrants abroad between 500,000 – 1 million, or between 9-17 percent of the population. Most are young men (between 15 and 34), where the deficit in needed domestic jobs was highest. In the span of a decade, the Kyrgyz Republic moved from a country with virtually no out-migration to one in which remittances accounted for more than 32 percent of gross domestic product (GDP).

4. **Remittances were instrumental in reducing poverty, particularly in the poorest regions of the country.** Poverty, which impacted almost three-quarters of rural areas and over half of urban households in 2003, had fallen by more than 30 percentage points by the mid-2000s (Figure 1). For households with a migrant abroad, the receipt of remittances accounted for almost double the reduction in poverty over the 2008 to 2013 period (with lower levels of domestic employment and lower domestic wages for those working contributing to some poverty worsening). Remittance flows not only aided migrant sending families directly, but they financed a boom in domestic consumption spending that spurred a rebound in domestic job growth, primarily in

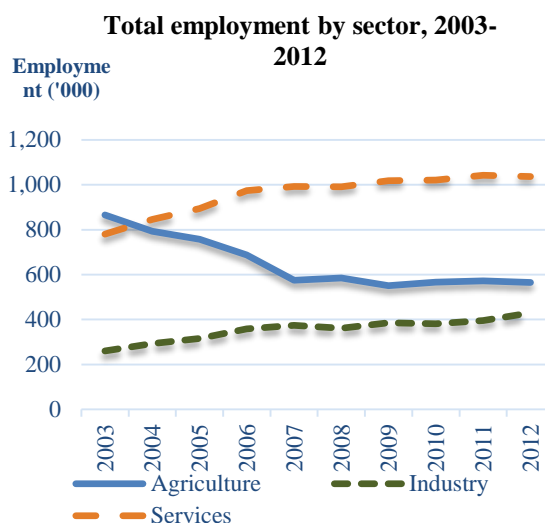
services (Figure 2). This allowed initially strong productivity improvements as workers in agriculture moved to higher-value work in cities and abroad.

**Figure 1: Remittances supported significant declines in poverty...**



*Source:* Staff estimates from Kyrgyz Integrated Household Survey. *Note:* Estimates based on constant 2013 poverty line.

**Figure 2: and a shift from agriculture to services, facilitating a consumption boom**



*Source:* Staff estimates from Kyrgyz Integrated Household Survey.

**5. Remittances and the growth of jobs in new areas also reduced long-standing geographical disparities.** The north and the south of the country are divided by mountain ranges, and there are ethnic and socio-economic divisions between the north and south as well. In part stemming from the natural disadvantages of its rough topography (rendering access to many services difficult), large socio-economic disparities have existed between rural and urban areas, which have on occasion led tensions significantly impacting economic performance<sup>1</sup>. The influx of remittances (many to rural families) and the creation of new employment (largely in the services sector) in rural areas has mitigated these socio-economic differences.

### ...BUT A DEVELOPMENT MODEL SHOWING SIGNS OF DISTRESS

**6.** Despite many of the positive byproducts that accompanied migration, there are increasing signs that the current model of economic growth and jobs based on a migration-led, remittance-driven model of development is unsustainable.

**7. The domestic economy is unable to generate sufficient employment to accommodate the growing labor force.** While the inflow of worker remittances supported a boost in economic

<sup>1</sup> The Kyrgyz Republic has experienced violent conflict on several occasions since its independence, including ethnic clashes in 2010.

growth and domestic employment creation, mostly in the services sector, domestic job growth has continued to lag the expansion in the size of the labor force. In 2009–13, job growth averaged only 0.9 percent a year, about two-thirds the pace of the expansion in the labor force. Although the official unemployment rate held relatively steady, the gap between the number of available workers and the number of jobs was filled by climbing rates of out-migration and exits from the labor force. The presence of remittances affected reservation wages, and as migration expanded, domestic labor force participation declined. The steepest decline emanated from females, where between 2000 and 2013, participation declined from over 62 percent to less than 50 percent.

8. **Job quality is not improving sufficiently to ensure convergence in the region.** The Kyrgyz Republic has the second-lowest level of output per worker—worker productivity—in the Europe and Central Asia region, providing abundant potential for productivity convergence with neighbors. However, although it realized stronger productivity growth than in previous periods, its productivity growth relative to comparators has been low. Output per worker has increased, on average, by only 4.3 percent a year since 2005, below the average productivity growth in the economies of the Commonwealth of Independent States (CIS) and far off the pace of the poorer CIS countries. Were productivity growth rates in the region to continue as over the past decade, output per worker in the Kyrgyz Republic would not approach that of any neighboring country for 70 years. The current model of job creation does not provide the pace of productivity growth needed to move the Kyrgyz Republic to a higher income status.

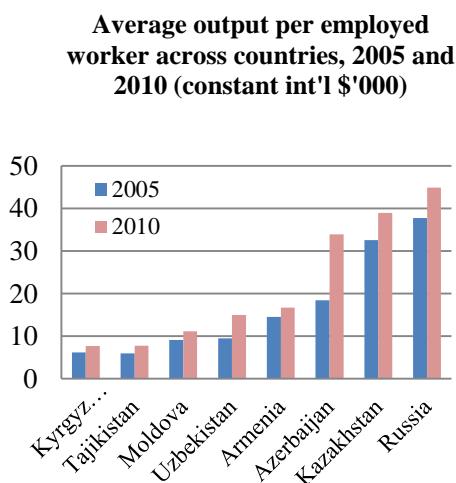
9. **Productivity growth is steadily declining.** Not only is productivity growth slower than the pace achieved by neighboring economies, productivity growth in the Kyrgyz Republic has steadily declined (from an average of 7.0 percent a year in 2005–09 to 0.7 percent a year in 2009–12), suggesting there are limits to the current model (Figure 3). Most of the country’s productivity gains have derived from services (Figure 4). While the initial growth in services was spectacular, it was largely accounted for by a dramatic increase in transport and communications, which shadowed the needs of the migration-led economy. As migration expanded, so did the need for transport services and communications technology, including mobile telecommunications and Internet. Over 2009–12, however, that robust source of productivity growth waned. Without continued strong growth in migration, services are unlikely to buoy the country’s productivity enhancements.

10. **Productivity has been dragged by informality.** A comparison of economy-wide productivity estimates with productivity estimates from the formal sector suggests that informality has been a significant factor in the deteriorating productivity growth both at the national level and particularly within the industrial sector. Formal sector firm data suggests that aggregate productivity growth in the formal sector has been strong, averaging 6.7 percent a year since 2009. Economy wide, however, productivity growth averaged less than 1 percent a year, hinting at significant productivity declines emanating from the informal sector. The formal/full economy productivity differential is particularly large in the industrial sector, where informality has risen strongly. The results suggest that both rising informalization (and productivity declines within the informal sector) are strongly impacting overall productivity.

11. **The decline in productivity has provided weakening scope for rising wages and income per capita growth.** Indeed, between 2009 and 2012, wage growth averaged only 2.8 percent a year (Figure 5). This amounts to about a quarter of the wage growth achieved in neighboring countries. Long term income per capita growth also has trailed neighbors. Between 2003 and 2014, income per capita growth in the Kyrgyz Republic averaged 3.1 percent a year, lower than every other CIS economy, half the rate of Uzbekistan, and a third of the rate in

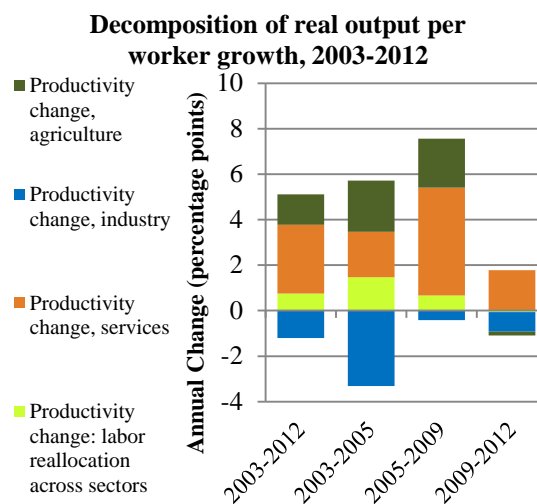
Azerbaijan and Turkmenistan. As a result, while in 2003 income per capita in the Kyrgyz Republic was about 30 percent of the CIS average, by 2014 it had fallen to only 23 percent (\$607).

**Figure 3: Productivity growth in the Kyrgyz Republic trails that of neighbors**



*Source:* Estimates based on data from country sources and World Development Indicators. *Note:* The figure shows the average output per employed worker in thousands of constant international U.S. dollars.

**Figure 4: Services supplied strong initial gains in productivity**



*Source:* Value added: estimates based on data in Kyrgyz Republic, World Bank Development Economics LDB Database, 2015. Sectoral employment: estimates based on data of the Kyrgyz Labor Force Survey.

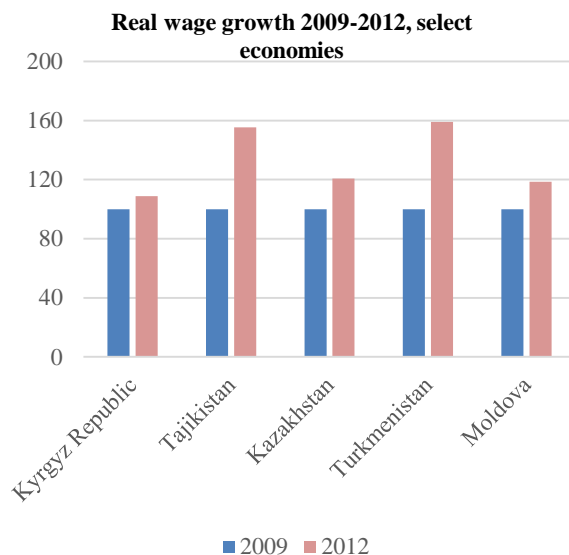
**12. Despite lackluster wage growth compared with neighbors, Kyrgyz's real wage growth exceeds productivity growth, weakening competitiveness.** Real wages have grown by 10 percent a year since 2005, driven by strong wage growth in both construction and services. Productivity growth, on the other hand, has averaged less than 5 percent a year. The difference between wage growth and productivity growth has been particularly high in the tradables sectors, weakening external competitiveness. Real wages in agriculture averaged 17 percent a year, compared with 4 percent a year productivity growth. Manufacturing wages increased by an average of 6 percent a year compared with productivity declines averaging 4 percent. This could be a symptom of labor shortages developing from both internal and external migration. The general rise in wages in tradeables without accompanying productivity growth is concerning because it signals a further weakening of external competitiveness.

**13. Rising migration may be further undermining human capital accumulation and inclusive growth.** The current model may be putting longer-term skill development at risk because young workers are increasingly opting for work abroad over secondary-school completion. As migration has risen labor force participation rates among young workers have increased, while the proportion of workers who have not completed secondary education has almost doubled (Figure 7). The decision to leave school early has been particularly prevalent among poor workers. Between 2004 and 2007, the labor force participation rate among young workers increased from 72 to 76 percent, while the proportion with incomplete secondary education grew from 5 percent to 11 percent.



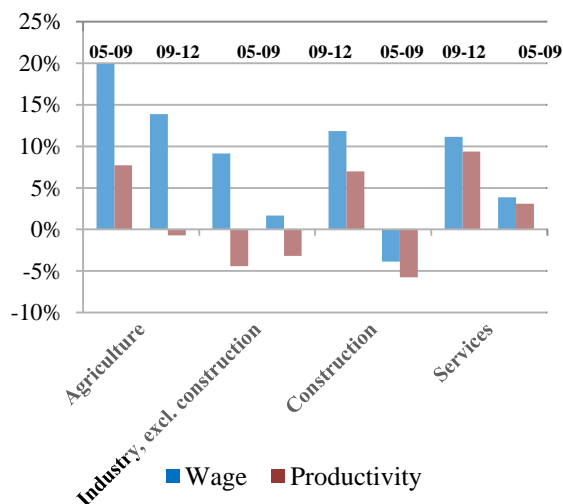
14. **The formal private sector, with the potential to generate higher-quality jobs, remains trivial in size and has not exhibited strong employment creation given its level of output growth.** A range of supply and demand factors are inhibiting the growth of the private sector, ranging from distortive patent and compliance systems to logistical constraints. As a result, the informal sector, in which productivity and wage growth have been anemic, has continued to be the core job-creating sector.

**Figure 5: The decline in productivity has resulted in significantly lower wage growth**



Source: Staff estimates from Kyrgyz LFS.

**Figure 6: Wage growth exceeds productivity growth in tradeables, weakening competitiveness in 2005-2012**



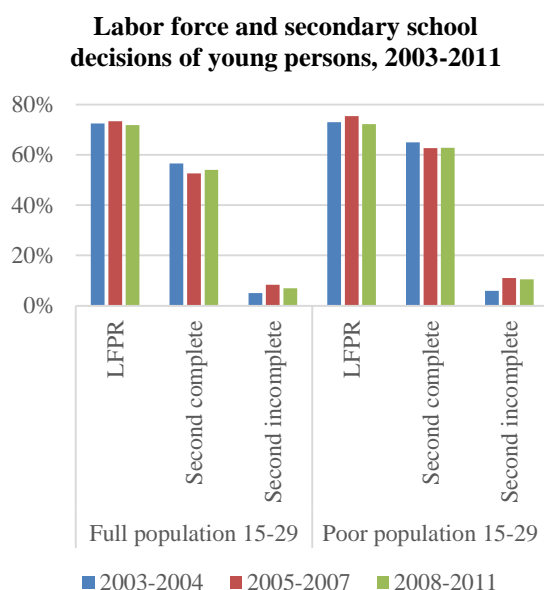
Source: Staff estimates from Kyrgyz LFS.

15. **The small formal private sector has not expanded rapidly...** The Kyrgyz Republic has one of the smallest formal private sectors in the region in terms of employment (Figure 8). Formal private sector jobs account for only 11 percent of overall employment in the Kyrgyz Republic. This is the lowest share among all CIS countries. More than 70 percent of employment occurs in the informal sector, and about 18 percent in the public sector. While formal private sector output has grown an average of 6.6 percent a year since 2009, the rate of growth has been inadequate to change the employment dynamics meaningfully in the country. Informal sector activities continue to dominate employment creation, but the activities are smaller in nature—most operate with fewer than five employees each—and are of significantly lower value. Moreover, while the formal private sector demonstrated some productivity improvements in 2009–12, output per worker in the informal sector stagnated, averaging about 1 percent a year.<sup>2</sup>

16. **... and it has demonstrated limited capacity to create jobs.** On top of low levels of growth, the employment-creation capacity of growth in the formal sector is low. On average, while the formal sector grew in real terms by 6.6 percent a year, job creation averaged less than 0.4 percent. The bulk of formal sector job creation comes from the public sector and nonprofit establishments, and value-creating firms actually shed labor in net terms in 2009–12.

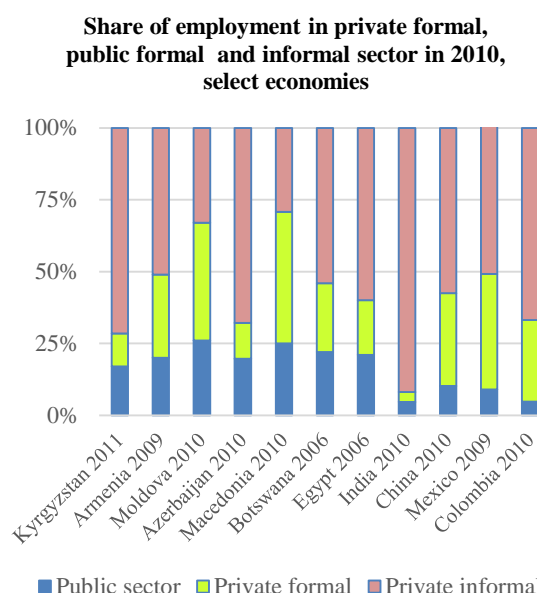
<sup>2</sup> Estimate based on overall productivity and productivity exhibited in formal sector value-producing establishments (based on employment shares in the nonpublic sector).

**Figure 7: Migration has changed participation rates and schooling decisions**



Source: Staff estimates from country sources, Kyrgyz Integrated Household Survey and Labor Force Survey.

**Figure 8: Employment in the formal private sector is among the lowest in ECA**



Source: Staff estimates from country data, including World Bank 2014a and 2014b; National Statistics Committee of the Kyrgyz Republic data and Kyrgyz LFS (to calculate share formal and informal); IZA 2011; ILO 2011, 2012; Bayramov 2012; Bino 2009; OECD 2012.

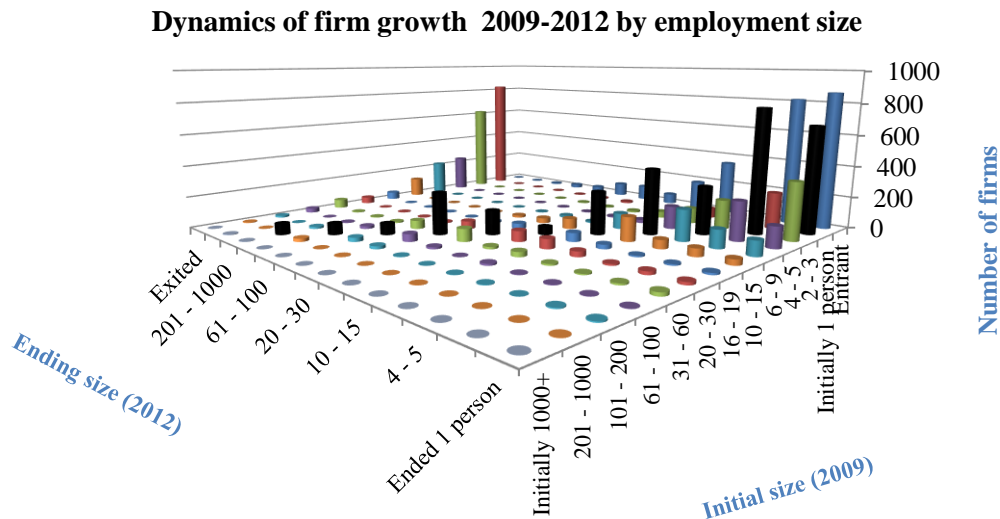
17. **Underlying these job outcomes are challenges to private sector productivity growth and job creation, to which the remedies may stretch across a range of potential policy areas and the development arena.** Labor demand is inhibited by a distortive patent and compliance system that constrains small-firm growth. Likewise, the limited amount of competitive pressure faced by large establishments tends to help discourage firm entry and exit and technology spillovers. Informality may be additionally fueled on the supply side by factors blocking registration and formal sector employment.

18. **Small firms create jobs, but are incentivized to stay small or informal.** The formal sector does not exhibit barriers to entry in aggregate, but it does exhibit barriers to firm growth among small firms. Small firms exhibit significantly higher exit rates and significantly lower graduation rates past smallness (Figure 9). Indeed, the lowest probability of an additional job created among formal sector firms occurs among small firms on the cusp of medium size.

19. **Growth past smallness is cost ineffective because of significant regulatory requirements and formal or informal payments.** Medium firms face the largest regulatory burdens among firms according to size. They encounter higher taxes, additional payments for labor insurance and social security, and additional costs associated with compliance, often stemming from greater government harassment. Medium firms face the highest incidence of graft payments in the operation of business. The burdens associated with growing past smallness inhibit formal

sector firm growth and, indeed, formalization altogether. There are few advantages for small firms in becoming formal.

**Figure 9: The dynamics of firm entry and growth suggest small firms face the greatest constraints on job growth**



Source: Staff estimates from KER data. Note: Black bars reflect firms that stayed within the same employment size band over the four-year period.

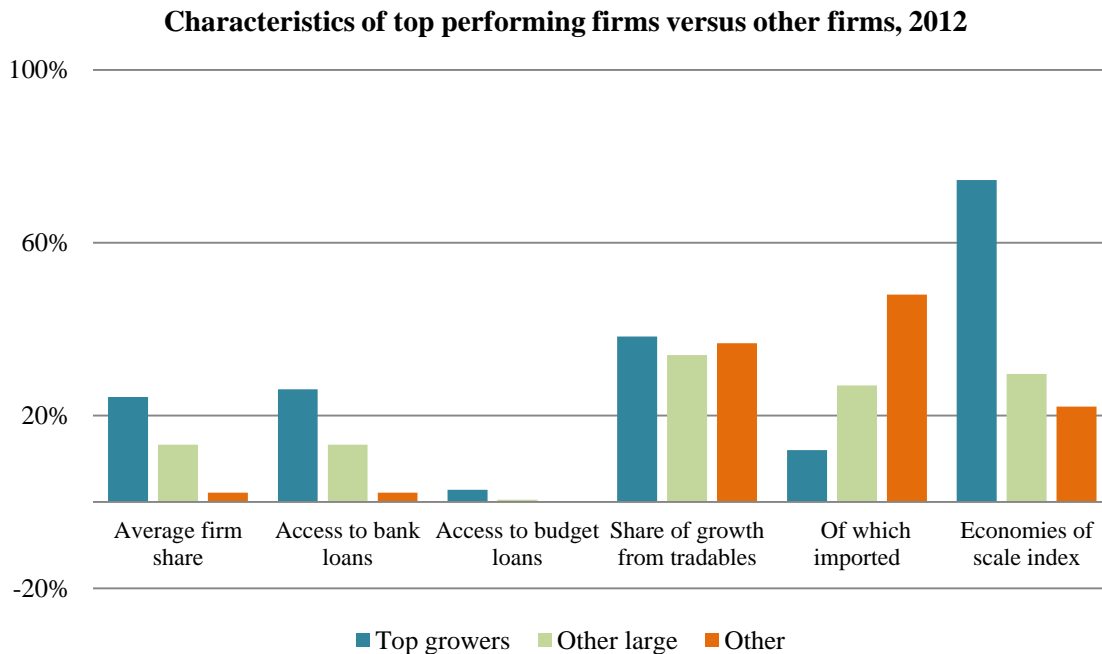
20. **A handful of large firms account for the majority of economic growth, but face few incentives to create jobs.** Economic growth is overwhelmingly concentrated in a small number of large establishments that, as a whole, have created limited employment. Little more than 40 firms are responsible for more than half the overall output growth of growing establishments, but their contribution to employment growth is negligible.

21. **As a group, these large establishments demonstrate limited competitive pressures, reducing their incentives to invest and hire** (Figure 10). They have about twice the access to bank lending as other large establishments and 5 times the access to government budgetary financing relative to other large firms. While they produce similar proportions of tradables relative to other companies, they face much less competition in terms of imports, suggesting that there is implicit or explicit protection.<sup>3</sup> Because many of these large growing firms are involved in the production of heavy goods (concrete, bricks, motor vehicle parts, and so on), geography may also provide natural import protections given the appreciably higher freight costs. The evidence suggests there are substantially larger economies of scale available to the largest growing companies. And, the limited competitive pressures facing these large conglomerates have reduced business dynamism in the formal sector, thereby preventing the exit of otherwise unproductive industries

<sup>3</sup> The correspondence between import data and production data is not exact. Nonetheless, a rough correspondence between Standard International Trade Classification revision 2 product classifications at the four-digit level and Statistical Classification of Economic Activities in the European Community codes suggests that, under any circumstance, there was significantly greater import value relative to production among large firms and firms that were not large, but not among high-growth establishments.

and the opening up of space for new firms, limiting entry in some sectors, particularly the most important job-creating sectors, and limiting the technological spillovers to other firms, which ultimately impedes job growth.

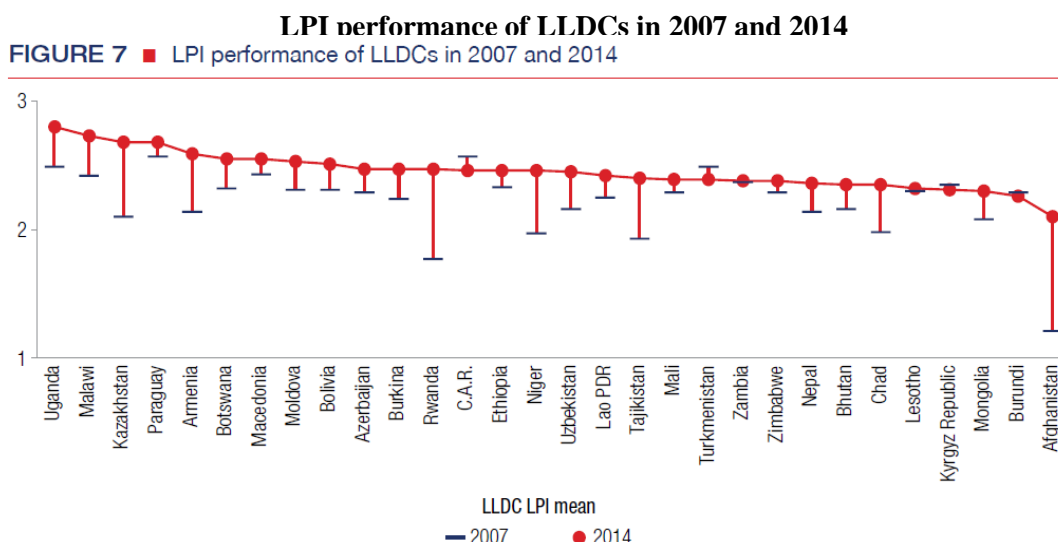
**Figure 10: Top growing firms face fewer competitive pressures**



*Source:* Staff estimates from KER, COMTRADE data. Economies of scale index calculated as average returns to additional inputs (intermediate + depreciation of fixed assets) over the average returns of original inputs. To graph with other indicators, that index value has been divided by 10. Access to bank/budget loans calculated as the share of establishments in sample with reported bank or budget loan. Top growers represent large establishments (with 60+ workers) in the top 5 percent of establishments with regard to value added growth. Average firm share = the share of overall value added in the sector (3-digit European Industrial Activity Classification) held by the establishment on average over the 2009–12 period.

22. **Export-oriented manufacturing is particularly impeded from stronger growth.** While, in aggregate, the rate of entry of establishments into the formal sector is high, particular sectors, such as export-oriented manufacturing, exhibit significantly lower rates of firm entry. Given the job-creation capacity of export-oriented manufacturing (on average, firms create 29 jobs), lack of entry into this sector is particularly troublesome for jobs. As importantly, the experience of other countries suggests that manufacturing firms are more likely to innovate, and the innovation that takes place in manufacturing leads to productivity improvements throughout the economy. The lack of entry in export-oriented manufacturing sectors may stem from the impediments to competitiveness, those associated with inherent disadvantages in transport and logistics associated with the fact that the Kyrgyz Republic is a landlocked country far from ports. Indeed, the Kyrgyz Republic is one of the most logistics-disadvantaged countries even among landlocked economies, and it has failed to make substantial progress in improving logistics in the last decade (Figure 11).

**Figure 11: The Kyrgyz Republic has made little progress in logistics performance relative to other landlocked states**



Source: World Bank 2014c.

**23. Informality is also fueled on the supply side.** Despite revisions in laws on internal migration, there is evidence that the registration system for employment remains both complicated and nontransparent. This especially impacts internal migrants from predominantly poor southern regions to the urban north. Because of higher utility fees and associated fees, there are incentives for landlords not to provide tenants with necessary documentation, hindering migrant registration and legal employment. This provides a large pool of unregistered, cheap labor that feeds the informal sector. Between 2003 and 2012, there was a fivefold increase in the share of industrial employment outside the construction sector held by workers from other *oblasts* (regions), and, among these internal migrants, the proportion working without a contract rose from 28 percent to 47 percent. In construction, a similar trend occurred whereby internal migrants accounted for 11 percent of construction jobs by 2012 (up from 3 percent), and, among these internal migrants, the share working without a contract increased from 36 percent to 81 percent. Without registry in the city, migrants not only have more limited access to higher-value formal sector employment, they also have more limited access to medical treatment, education, and other basic services.

## EMPLOYMENT CREATION ON THE PATH TO GREATER GROWTH

**24. The current model of growth has resulted in both employment insufficiency and declining productivity and wage growth.** Shifting to a higher job growth path will require fundamental transformations in the sources of economic growth and jobs, which call for efforts across several policy fronts. In addition to reducing the regulatory distortions that inhibit private sector growth and employment, efforts will be needed to maintain an enabling environment for export competitiveness through appropriate macroeconomic management and improvements in transport and logistics, to ensure businesses are unshackled from the widespread prevalence of low-level corruption, and to facilitate the utilization of remittances for domestic growth and employment creation through greater financial intermediation.

25. **Job growth in the formal sector is thwarted by regulations and a lack of competition.** Distortions in the patent and regulatory system and the costs associated with compliance that affect especially small firms need to be addressed to reduce the current barriers to small-firm survival and growth. The degree of concentration of output among a small number of large firms suggests there are barriers to competition that impede the growth of business and jobs. Other obstacles to operations may also exist that contribute to the lack of dynamism among firms.

26. **Enabling the expansion of the export-oriented manufacturing sector will require greater efforts to improve competitiveness.** The influx of worker remittances into the Kyrgyz Republic has heightened the risks of Dutch Disease, which could hinder the expansion of exports. Migration-sending countries can adopt a range of policies to offset the effects of remittance flows on the equilibrium real exchange rate, or compensate the economy's traded goods sector for the loss of competitiveness that it suffers from real exchange rate appreciation. Investment in the export-oriented sectors (for example, improving transport and logistics infrastructure) could help to increase productivity and drop costs for firms in the sector, helping offset the Dutch Disease effect. These are examples of issues that can be explored as part of the Kyrgyz Republic's jobs policy agenda.

27. **The business environment can also be enabled through a concentrated reduction in the facilitating factors behind corruption.** The Kyrgyz Republic ranks higher than other developing countries in Europe and Central Asia and even higher than the average among low-income countries across a range of corruption indicators. One contributor to corruption is the problematically low wages among public servants, which creates greater incentives for corruption. If wages are unrealistically low, the incentives for gaining income through corruption increase, thereby not only lowering the quality of public service, but significantly deterring formal sector growth.

28. **While remittances are well targeted to individual needs, their broader economic impacts can be enhanced by reducing the costs of remittance transfers and better intermediation.** At present, only a small portion of remittances are transferred through formal channels. Strengthening the financial intermediation of remittances can improve the ability of the economy to mobilize savings and direct savings toward high-return projects, to improve the access of formal remittance recipients to other financial products (thereby reducing risks), and to enable policy makers to monitor and react more effectively to changes in remittance flows that could impact poverty and job-creating investments. Table 1 illustrates a range of policy areas that should be considered to create a more promising environment for the creation of jobs.

29. **The policy directions for improving jobs outcomes are multiple.** To break out of the migration trap, the Kyrgyz Republic will need to redirect its policy direction toward the creation of more and higher value jobs domestically, which must come from an expanding and competitive private sector. Table 1 outlines some of the major policy directions that can underpin more effective domestic and external job creation.

30. **...but the rewards are high.** At present, jobs options for the majority of Kyrgyz workers are largely limited to low-value (but better paid) migration opportunities and domestic work in low value services. Expanding the pool of employment options domestically, driven by new engines of growth, will reduce the vulnerabilities of Kyrgyz workers to external shocks, incentive educational investments, and support continued favorable growth and poverty reduction prospects for the Kyrgyz Republic.

**Table 1: Policy directions for more effective job creation**

<i>Suggested policy areas for improved jobs outcomes</i>	
<b>Development objectives for better jobs</b>	<i>Policy areas</i>
<b>Make migration work for jobs</b>	<p><b>Reduce potential for the “Dutch Disease”</b> by offsetting the effects of remittance flows on competitiveness by investing in the export sector (for example, in transport and logistics, which particularly constrain export-oriented development).</p> <p><b>Combat early-exits from school</b> for migration opportunities by better monitoring and evaluating decision making process of young migrants, and improving the environment for domestic jobs.</p> <p><b>Strengthen the financial intermediation of remittances</b> to improve the ability of the economy to mobilize savings and direct savings to high-return projects, to improve the access of formal remittance recipients to other financial products (thereby reducing risks), and to enable policy makers to monitor and react more effectively to changes in remittance flows that could impact job-creating investments and help reduce poverty.</p>
<b>Improve higher value job creation</b>	<p><b>Improve the environment for formal firm entry, growth and job creation</b>, through improving firm entry in key job-creating sectors, reducing the distortions that hinder formal small firm growth, and creating more level playing field between the large firms which dominate growth (but create few jobs) and the rest of firms (small and large), by assessing inequities in bank and budgetary finance, levels of protection, and economies of scale. Improve formal firm entry and growth additionally to improve productivity and wage growth, reducing the tendency for small low value firm growth at the informal level.</p> <p><b>Reduce widespread corruption</b>, including through paying sufficient salaries to public servants, which incentivizes low level corruption and reduces firm growth in the formal sector.</p>
<b>Make geography work for jobs</b>	<p><b>Improve the environment for merchandise and services trade and export diversification</b> by improving transport and infrastructure, creating incentives for firm growth close to trade routes, and finding niches in products that capitalize on geography (such as mineral exports) or are geographically neutral (activities where the geography is not a factor).</p>





# CHAPTER 1. THE CONTEXT FOR JOBS IN THE KYRGYZ REPUBLIC

## A. COUNTRY CONDITIONS SHAPING DEVELOPMENT AND EMPLOYMENT OUTCOMES

**1.1 The Kyrgyz Republic's jobs possibilities will be strongly influenced by its underlying social and development context.** The 2013 World Development Report<sup>4</sup> highlights how key underlying social, political, geographic and economic features will to a large extent dictate the jobs challenges that confront countries. Youth bulge countries, not surprisingly, must deal with the specific challenges of youth employment. Aging economies must confront rising age dependency ratios and at times labor deficiencies. Conflict affected countries must continually square jobs solutions on aggregate with the delicate balances needed to maintain peace and stability. The typologies of countries with regards to jobs are not mutually exclusive. Countries face many divergent challenges simultaneously. Understanding some of the key country features that have impacted jobs outcomes to date and are likely to continue to exert influence over the future is a priority in describing the jobs agenda.

**1.2 Several characteristics of the Kyrgyz economy are helpful entry points in understanding recent jobs outcomes and future opportunities and challenges.** These are: (1) the country's challenging geography and natural resources; (2) Long-standing spatial disparities; and (3) the economic after-effects of the transition from Soviet central planning. In some sense these are the structural features of jobs, as they represent the conditions with which the Kyrgyz Republic must contend in its search for jobs solutions.

**1.3 The Kyrgyz geography – both its location and topographic features – have shaped the nature of economic activity.** Rugged and remote, the Kyrgyz Republic is geographically dominated by the Tien Shan mountain range, covering 95 percent of its territory. The rough landscape has provided the country a set of natural resources as a base for economic activity, but it has also limited the ability for the Kyrgyz Republic to exploit them fully (through resource use intensification, surplus generation, reinvestment and trade) or to move beyond them. Inaccessibility has increased costs for inputs and technology that might raise productivity at all levels. Mountainous territories by their nature are characterized by a narrow set of resources on which to draw, with limited possibilities for economies of scale. This rugged terrain has also increased the costs associated with the public services delivery and infrastructure development such as transport and ICT. This has not only further increased costs associated with production, it has contributed to wide disparities across the country in terms of access to basic services (discussed below).

**1.4 The Kyrgyz Republic also suffers the disadvantages of small landlocked economies.** Smallness has increased the need for trade (to expand beyond its limited market). But its remoteness within Central Asia and landlocked status increase the transport costs, weakening competitiveness. Exports outside of gold and non-ferrous metals are constrained, with non-gold merchandise exports accounting for on average 20 percent of GDP between 2010 and 2013. These

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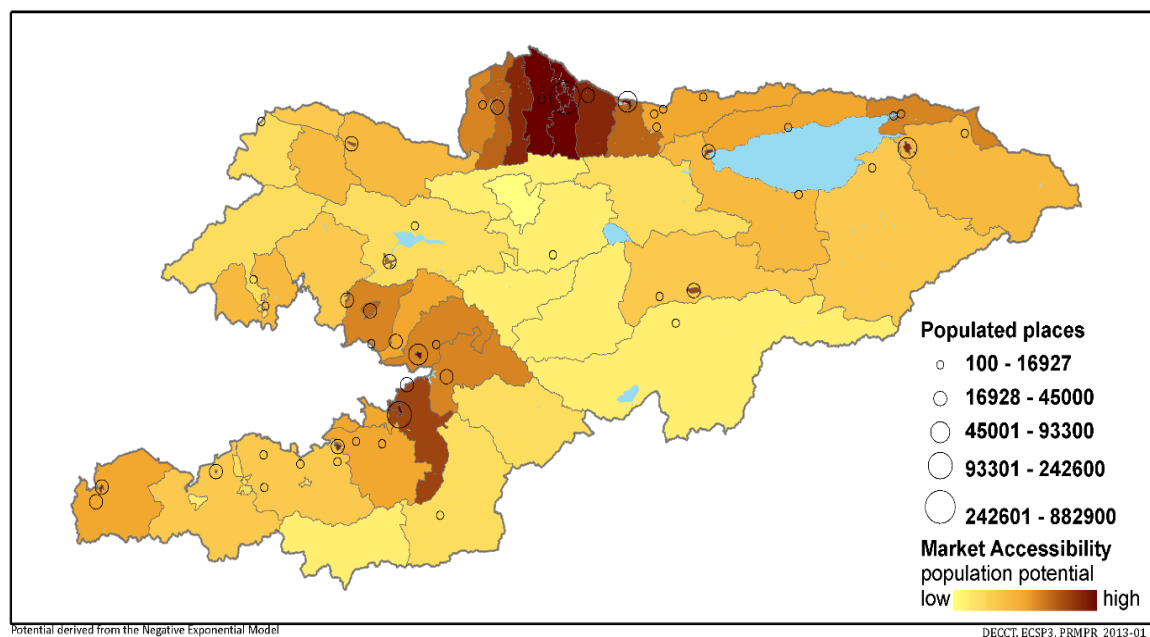
<sup>4</sup> World Bank. 2012. World Development Report 2013: Jobs. Washington, DC: World Bank.

disadvantages were partially masked under the Soviet command economy, as complex output and supply arrangements ensured dependable trade networks and steady demand.

**1.5 Secondly, the Kyrgyz Republic is characterized by its long-standing spatial disparities in economic welfare and economic activity.** The north and the south of the country are divided by mountain ranges, and there is socio-economic divisions between the north and south as well. While poorer and predominantly rural south is linked more to its neighboring countries of Uzbekistan and Tajikistan, the north borders Kazakhstan and is more closely connected to Russia. In part stemming from the natural disadvantages of its rough topography (rendering access to many services, from health to education to markets to infrastructure [see Figure 1.1], considerably more difficult) large socio-economic disparities exist between rural and urban areas. Overall poverty in rural areas is 41.4 percent (2013), compared with 28.5 in urban areas. While 70 of the population in urban areas have access to improved sanitation facilities, in rural areas, the proportion is 8 percent<sup>5</sup>. Almost all measures of human opportunity show a wide divide between rural and urban areas (see Figure .1.2).

**1.6 The ethnic and socio-economic division between the rural south and the north** has on occasions led to tensions which have had significant impact on the country's performance.<sup>6</sup>

**Figure 1.1: Market accessibility index of the Kyrgyz Republic: Population Potential**



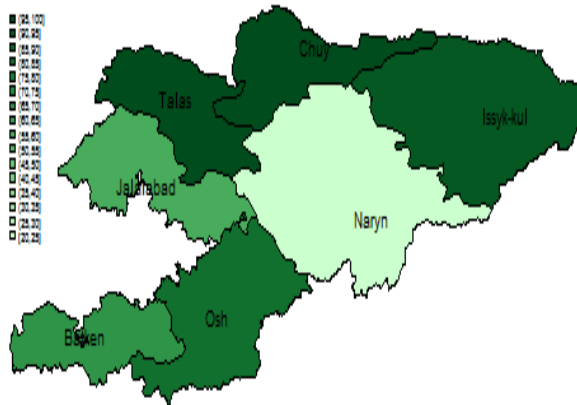
*Source:* Market Accessibility and Regional Maps: The Kyrgyz Republic, Blankespoor, 2013.

**Figure 1.2: Oblast level Human Opportunity Index for select opportunities**

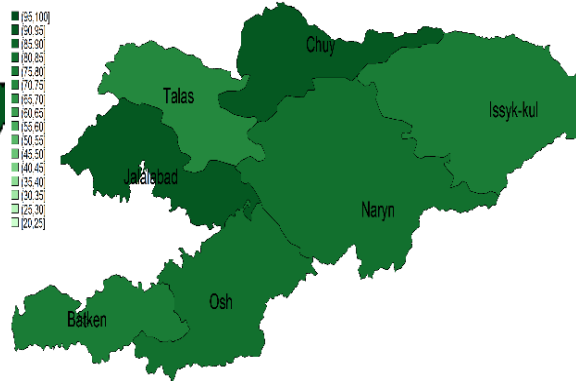
<sup>5</sup> Kyrgyz LDB, 2015.

<sup>6</sup> The Kyrgyz Republic has experienced violent conflict on several occasions since its independence, including ethnic clashes in 2010.

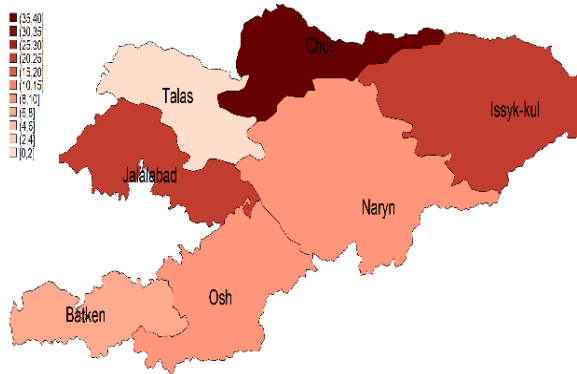
**Clean drinking Water**



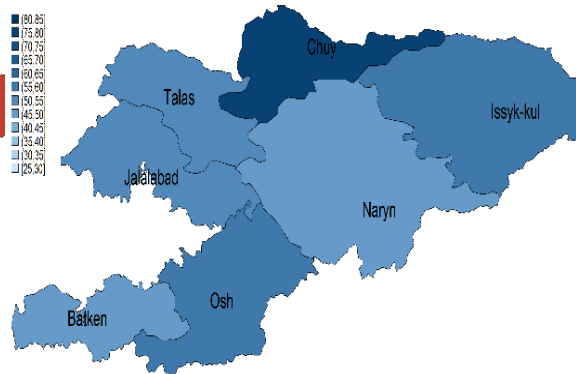
**Not Stunted**



**Phones**



**Some Tertiary**

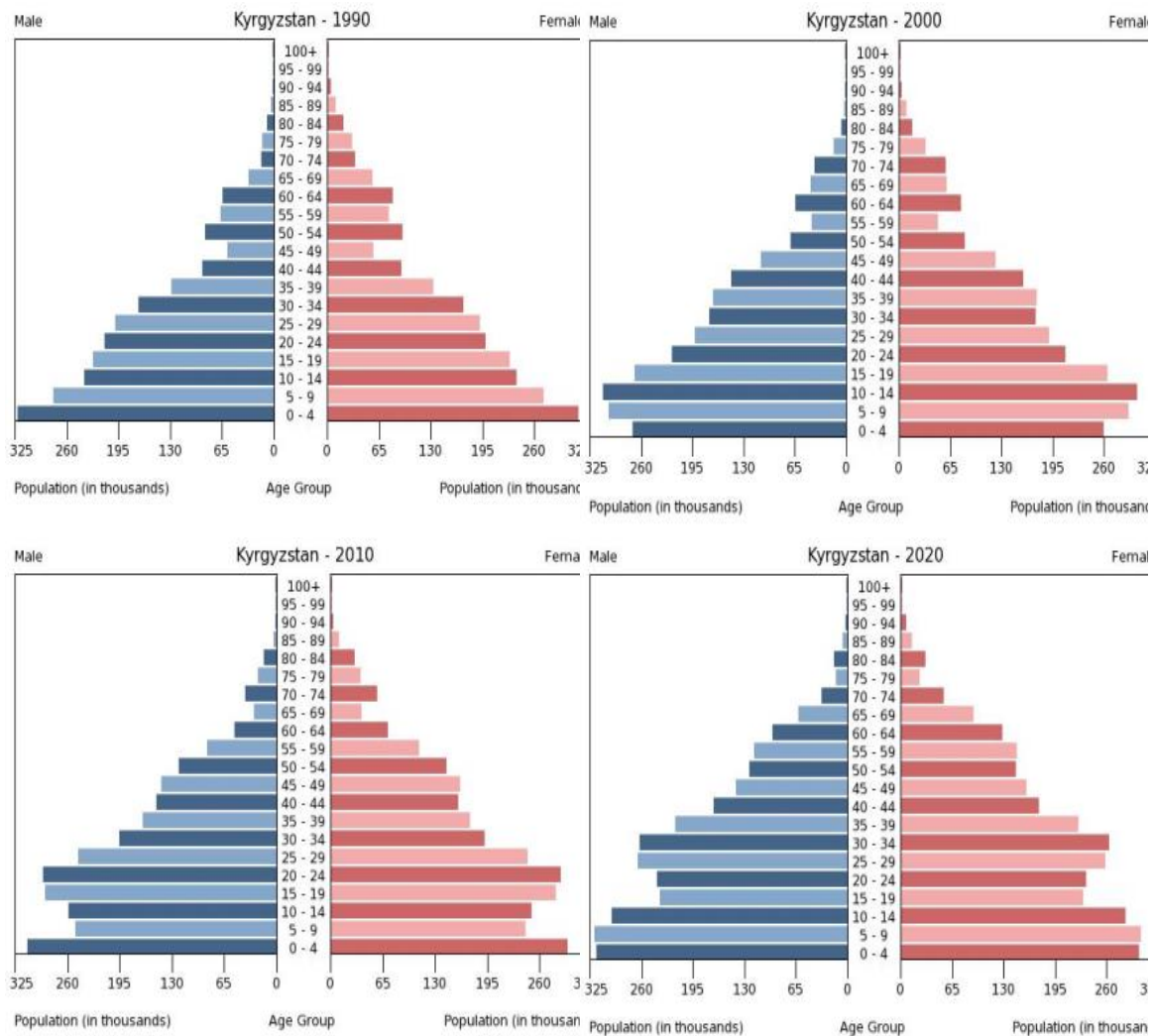


Source: Human Opportunities in the Kyrgyz Republic, Tiwari and Mitra, 2012.

**1.7 Overlaying these economic and social disparities, differences in population and labor dynamics between the north and south have heightened pressure for jobs and income for workers in the south.** The Kyrgyz Republic's population is young. The working age population<sup>7</sup> increased by 2 percent over the 2003-2013 period, and this rate of growth is expected to continue in the future (Figure 1.3). In rural areas, the working age population has grown faster than in urban areas (1.2 percent a year over the past decade, compared 1 percent in urban areas), while domestic job creation has been half as fast (0.5 percent a year versus 1 percent). Heightened growth of young workers with significantly lower jobs prospects has created many of the pressures for migration out of rural areas, both externally and internally to urban areas.

<sup>7</sup> 16-62 for male and 16-57 for females.

**Figure 1.3: Population Dynamics in Kyrgyz Republic, 1990-2020**



Source: United Nations.

**1.8 Finally, the Kyrgyz Republic is characterized by the both legacy of central planning and the significant labor market after-effects of the difficult transition from that model.** The Kyrgyz Republic gained its independence as the second poorest country in the Commonwealth of Independent States (CIS). Although it gained its independence almost 25 years ago, many of the struggles confronting Kyrgyz labor markets have their roots in the difficult transition which all of the Commonwealth of Independent States (CIS) confronted following independence. The disintegration of the Soviet systems plunged the Kyrgyz economy into collapse, with a complete breakdown in supply chains and Soviet demand. The Soviet model had internally integrated all Soviet production, such that production might involve the transport of inputs across vast geographic distances. Once these elaborate cross-republic supply chains were disrupted, the Soviet market demand for most of Kyrgyz's industrial outputs and agriculture collapsed. Over the 1990-1995 period, agricultural output fell by 26 percent, while industrial output was cut by more than two thirds (Table 1.1).

**Table 1.1: Decline and Recovery in Economic Activity, 1990-2013**

	Total change over period 1990-1995 (%)	Average annual growth			
		1995-2000	2000-2005	2005-2010	2010-2013
GDP at market prices	-49%	7%	3%	5%	3%
GDP at factor cost	-48%	7%	3%	5%	5%
Agriculture	-26%	8%	3%	-1%	2%
Industry	-71%	5%	0%	3%	7%
Manufacturing	-73%	12%	-1%	2%	4%
Construction	-64%	-5%	8%	8%	23%
Gas, elect, water	..	-1%	0%	6%	4%
Mining	..	..	2%	6%	14%
Services	-43%	3%	7%	9%	6%
GDP by aggregate demand					
Resource balance	-23%	-45%	77%	10%	30%
Exports of goods and services *	-6%	3%	2%	5%	2%
Imports of goods and services *	-12%	-4%	7%	7%	10%
Total consumption	-57%	2%	10%	2%	8%
General government	-64%	3%	1%	1%	1%
Private consumption	-54%	2%	13%	2%	10%
Gross domestic investment	-41%	3%	-2%	13%	16%
Gross domestic fixed investment	-46%	0%	0%	14%	10%

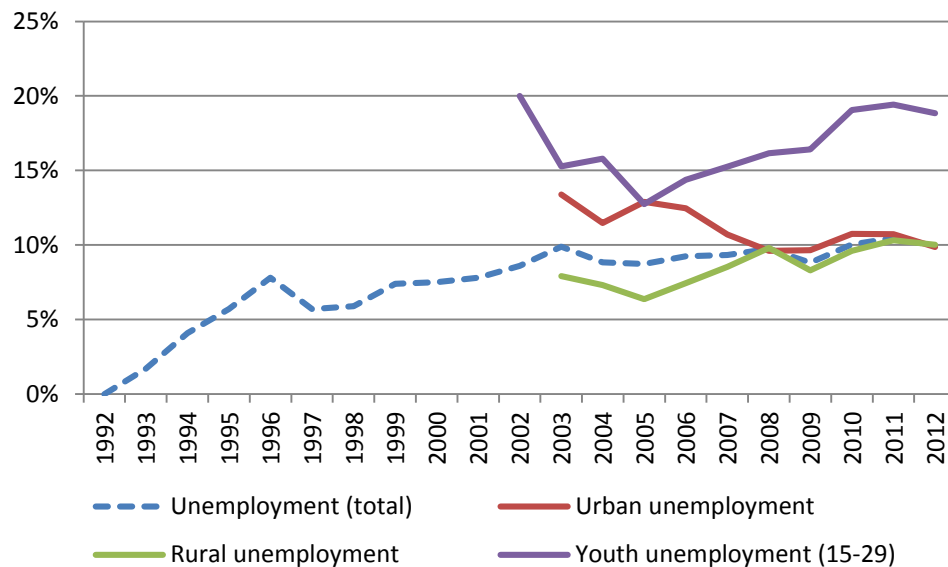
Source: Kyrgyz LDB, 2015. \*: 1992-1995 figure.

## **B. LABOR MARKETS IMMEDIATELY AFTER THE TRANSITION**

**1.9 The economic collapse associated with the disintegration of the Soviet system had several important and long-standing ramifications on Kyrgyz labor markets and employment:**

- (i) **First, high unemployment emerged.** The precipitous decline in GDP following independence resulted in emerging and significant unemployment (Figure 1.4). The full extent of unemployment was likely masked by labor hoarding in agriculture, withdrawal from the labor force, and by low levels of unemployment registration. An estimate of unemployment in other CIS countries in the early 2000s found that less than 20 percent of unemployed persons actually registered. Even with these factors, official unemployment as a share of the labor force in the Kyrgyz Republic grew to double digits in the first decade following independence.

**Figure 1.4: Rise of Unemployment, 1992-2012**



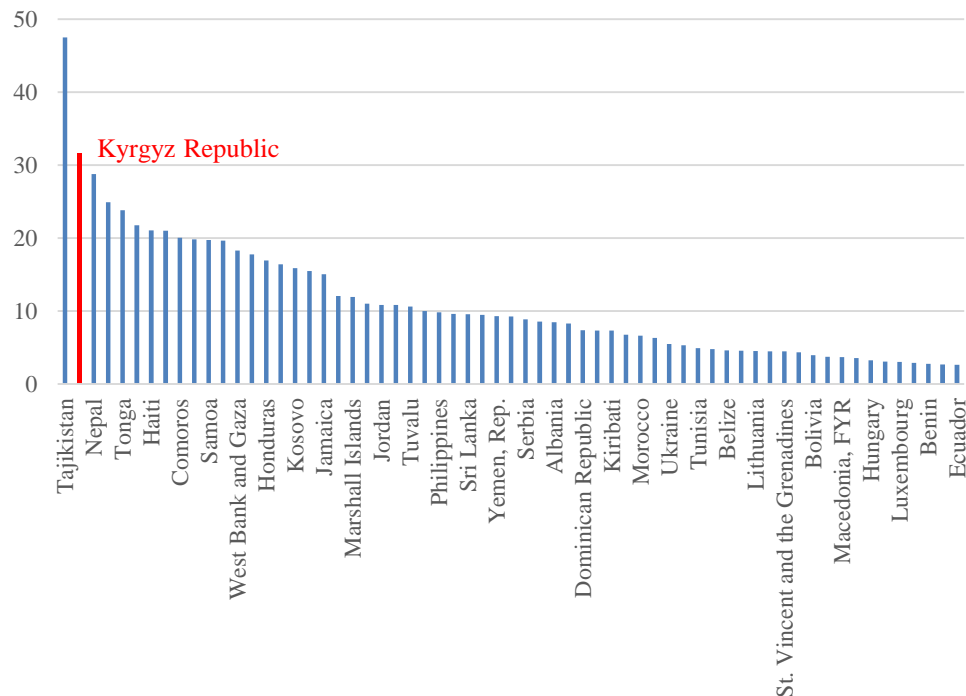
*Source: Staff estimates from Kyrgyz LFS.*

**(ii) Second, the lack of jobs caused a shift of workers to agriculture as a means to survive, resulting in significant surplus labor on farms.** The transition from the Soviet model resulted in mass privatization of large farms and distribution of private plots for large numbers of people. As privatization of state-owned industry resulted in widespread slashing of urban jobs, an urban to rural migration took place as people displaced from industry returned to their villages to farm, their only means of subsistence. While agriculture had been the main source of employment for less than a third of the population under the Soviet Union, by the early 2000s, agriculture was officially the main source of employment for about half of the labor force. However, with a collapse in the wool market, low levels of investment, and lack of imported feed, agricultural productivity had plummeted. Lack of financial resources for farm mechanization resulted in many of the newly acquired arable farm holdings being unable to produce crops. Lack of maintenance on infrastructure around remote summer pastures led to overgrazing pastures close to villages. Thus, while farming had become the main employment source for the country, the average output per worker in the sector was about 40 percent less than the average output per worker outside of agriculture.

**(iii) Third, the industrial sector contracted strongly, with sizeable job losses.** A large number of inefficient enterprises had relied on government subsidies to remain operational under the Soviet system, but following independence and privatization, most were eventually closed. Over the 1990s, production declined in almost all industrial sectors, including power, engineering and metal work, and fuel, chemicals and petrochemicals. Only the minerals sector experienced real output growth, thanks to foreign investment in Kumtor gold mining company. In all, industrial output declined by almost three quarters. The industrial sector, which used to provide about a quarter of jobs in the 1990s (and 40 percent of output), by early 2000s accounted for less than 15 percent of jobs (and only 25 percent of output, down from about 40 percent in the 1990s).

- (iv) **Fourth, the labor model was shifted from a (largely guaranteed) regular wage employment model to predominantly irregular and self-employment.** This shift was especially pronounced in agriculture and services, where the share of workers with a guaranteed wage fell from about 6 out of 10 workers in the 1990s to only 2 in 10 by the early 2000s. Kyrgyz employment has become predominantly informal, with employment outside of registered establishments and companies accounting for 70 percent of employment. This is a ratio higher than in all other CIS countries, and on par with informality in Africa.
- (v) **Finally, and most importantly for jobs outcomes today, the erosion in living standards triggered by the economic collapse spurred a large-scale labor migration out of the Kyrgyz Republic.** The lack of employment opportunities initiated a wave of migration out of the country, beginning in the early 2000s. Estimates of the extent of migration vary significantly, with estimates from household data suggesting a figure of about 250,000 migrants while unofficial sources put the figure at closer to 500,000- 1 million (see Box 1.1). Within the span of a decade, the Kyrgyz Republic became the second highest remittance receiving economy in the world as a share of GDP, estimated at 32 percent of GDP in 2013 (Figure 1.5).

**Figure 1.5: Personal remittances received, 2013 (% of GDP)**



Source: World Development Indicators (12/14 update).



### **Box 1.1: Accounting for Emigration from the Kyrgyz Republic**

Getting an accurate estimate of migration from the Kyrgyz Republic is challenging. The Kyrgyz Integrated Household Survey provides two questionnaires that allow for a measurement of labor migrants. First, the household roster (questionnaire 1) that is collected in the first quarter of each year includes a question about household members who are present or absent in the household. If members are absent, the questionnaire inquires about the reason for the absence, including employment. If this is the reason for the absence, the individuals are classified as labor migrants. There are a couple of disadvantages to this approach. The biggest disadvantage is that absence for work is not specified as international or domestic work. Second, the roster is only completed once a year, which may bias seasonal labor migration.

The second source of information is the Labor Force Survey (questionnaire 4). In this survey, basic information, economic activity, and income information are recorded for household members aged 15 and over. Members who report they work abroad are classified as labor migrants. Other members of the household can report information about members who are labor migrants if these are absent. Virtually all labor migrants identified in the household roster in quarter 1 are also reported in quarter 1 of the Labor Force Survey.

Information on the characteristics of migrants is based on analysis of the data in the Labor Force Survey. Because there is no clear advantage in using the household roster to identify labor migrants, the Labor Force Survey is our key source for the identification of labor migrants and migrant households.

While the Labor Force Survey allows an analysis of the broad trends and characteristics of migration, there are limitations that may significantly bias downwards the estimates of the migration stock. It does not account for household members no longer considered household members, nor does it account for entire families that have migrated. Given the characteristics of migrants from the Kyrgyz Republic, the first limitation is significantly more important. Because migrants are generally young -- 20–30 years of age who often leave their birth households for employment, marriage, and the like, it is probable that a large portion of migrants are excluded. Additionally, the exclusion of seasonal migrants—who are not identified as emigrants—may significantly underestimate the true number of migrants. Thus, while the data of the Labor Force Survey show net migration at around 250,000, the Kyrgyz International Organization for Migration puts the figure at closer to 350,000, and the United Nations puts the migrant stock at around 740,000, with about 575,000 living in Russia (2013). For analysis relying on the overall magnitude of migration (such as simulations of the total labor force, migrant and domestic), a conservative estimate of 500,000 is employed.

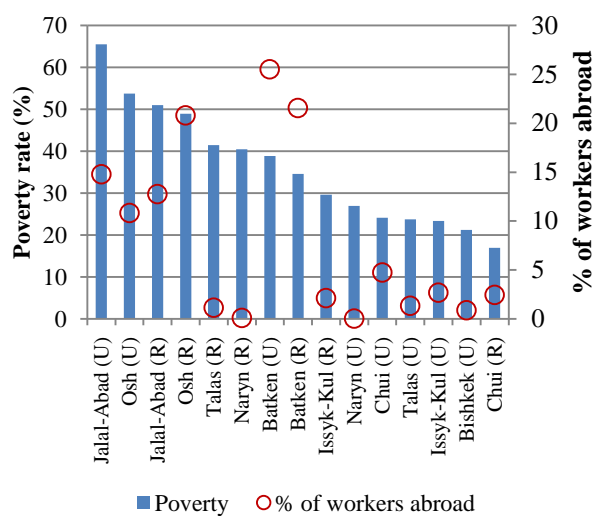
*Source:* Yang 2015.

#### **1.10 Spatial disparity in economic prospects also spurred large scale internal migration.**

Most migrants have come from the south, which has experienced significantly poorer job prospects and higher rates of poverty (Figure 1.6). External migrants have predominantly found work in Russia in construction or trade (with a sizeable degree of shuttle-traders, traveling by existing rail lines to transport goods to Russia) or Kazakhstan (Figure 1.7). The exodus from the rural south has also fueled a swelling of internal migrants into Bishkek, Osh and Jalal-Abad, which has fostered the growing informality of urban employment.

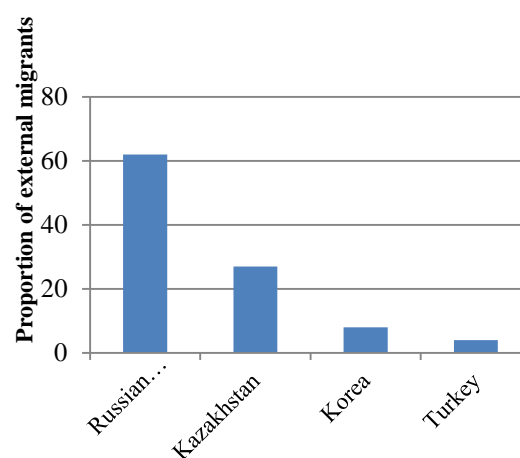


**Figure 1.6: Poverty Rates and Rates of Labor Migration, 2012**



Source: Staff estimates from Kyrgyzstan's LFS.

**Figure 1.7: Main destination of Kyrgyz Migrants, 2008**



Source: ILO, 2009.

## C. CONTEXT-SPECIFIC SOLUTIONS FOR JOBS IN THE KYRGYZ REPUBLIC

**1.11 All of these features have had an important role in explaining jobs developments in the past.** The development model that has arisen in the Kyrgyz Republic has sprung from the seeds of a very severe economic collapse following independence from the Soviet Union. Were the geography different, the Kyrgyz Republic might have responded to the collapse with a redoubling of exports to neighboring countries with surplus cash. Surrounded as it was by other struggling countries, with deficient trade-related infrastructure, and dependent upon sovereign access, the response was workers leaving Kyrgyz altogether. Once that migration network has taken hold, it has become a condition that is no longer a development but is a feature of the country.

**1.12 These key features of the country context must also underpin jobs solutions for the Kyrgyz Republic.** Migration is a development and jobs phenomenon with which the Kyrgyz Republic will need to contend for the next several decades. Jobs solutions will need to recognize the many direct implications of a remittance-driven growth model on growth and job creation, and integrate this understanding into specific jobs strategies. Geography also narrows the possibilities for growth and jobs. A jobs agenda in the Kyrgyz Republic must look for jobs solutions that minimize the costs and maximize the advantages of a challenging geography and location. That may be through targeting more “geographically neutral” economic activities, where transport comprises a smaller share of overall costs, by facilitating expansion of businesses in locations closer to cross-border trade routes, or by utilizing the geography as an asset. While these are sector-specific development issues, the jobs agenda cannot be viewed as separate from the development agenda.

**1.13 The jobs diagnostic makes use of several benchmark country groupings based on important features affecting jobs.** Throughout the report, the jobs diagnostic draws upon country groupings sharing similar country features to the Kyrgyz Republic (but varying depending upon the feature of importance). Because each country typology creates its own development frontier,

these similar countries can provide a landscape in a sense of what has been achieved by the set of countries with the same set of key structural features. Three features are particularly important for benchmarking for the Kyrgyz Republic: its geographic challenges, its high level of out-migration, and its transition from the Soviet-Union. The report deliberately draws upon countries at varying stages of development, to consider at the broadest level the strategies for growth and jobs that worked within these country context features.

## CHAPTER 2. A CHANGING MODEL OF GROWTH AND JOBS

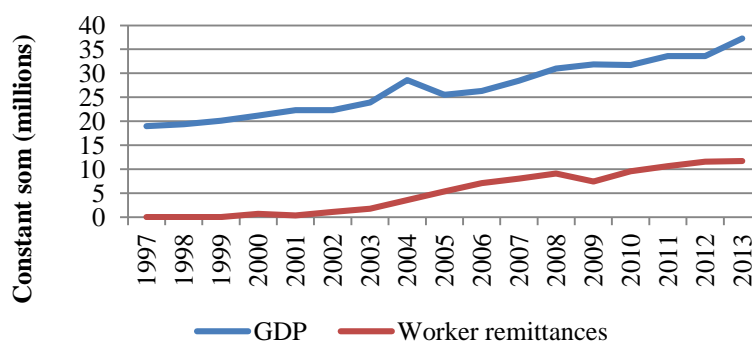
### MACRO AND MICRO FINDINGS

#### A. GROWTH RESUMPTION AND POVERTY REDUCTION THROUGH LABOR EXODUS

**2.1 Following the grueling transition that accompanied independence from the Soviet Union, the Kyrgyz Republic managed an unsteady recovery over the 2000s.** A strong economic liberalization, addressing price and subsidy reforms, privatization of state-owned enterprises (SOEs), land reform, exchange rate liberalization, and other measures, along with robust growth of remittances lifting domestic demand, helped the Kyrgyz Republic to recoup some of the sizeable losses it had incurred immediately following independence. Between 2000 and 2013, the economy managed to grow by a relatively robust rate of 4.5 percent per year. With widespread income gains from both migration and the domestic demand it has fueled, the country has been able to achieve significant gains in welfare and poverty reduction. Overall poverty fell from 68 percent to 37 percent between 2003 and 2013, with rural poverty reduction driving the dramatic fall.

**2.2 Migration provided a new engine for growth.** Underpinning the growth recovery was a spectacular movement of workers, both abroad and internal. On the external front, and starting in the mid 2000s, migration of Kyrgyz workers on a wide scale began to take root, with lack of jobs and low salaries propelling workers to Russia for employment and study. Estimates of the extent of migration vary between 500,000 and 1,000,000 workers abroad, with the peak of migration over the 2006-2008 period. With this movement came higher incomes, a large portion of which were transferred back home for savings and purchases ranging from housing to education expenses to farm equipment to personal consumption items to small business seed capital<sup>8</sup>. Over the 2003-2012 period, worker remittances increased 16-fold, providing the impetus behind a resumption in economic growth (Figure 2.1).

**Figure 2.1: GDP growth and worker remittances, 1997-2013**



Sources: GDP: Kyrgyz LDB (January, 2015 update). Remittances: WDI (12/14 update).

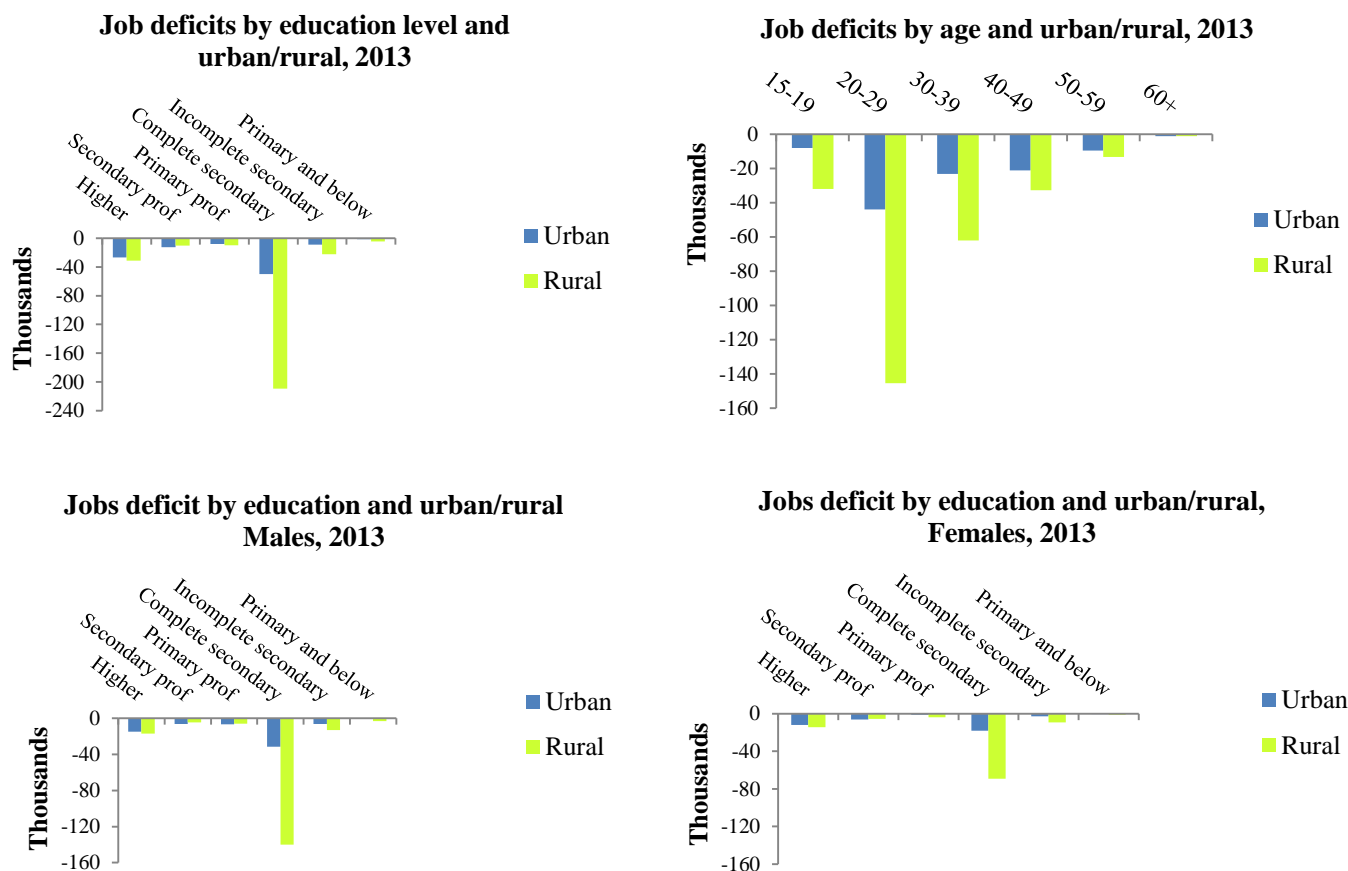
**2.3 Migration also provided a release valve for an economy which had not created enough jobs to keep pace with the labor**

**force.** Kyrgyz's young population has put an additional burden on creating employment which the domestic economy has been unable to fulfil. Between 2004 and 2012, the labor force has grown by about 1.5 percent a year, while domestic employment grew by less than half that rate (0.6 percent a year). The jobs gap has been filled by migration, with little change in overall unemployment over

<sup>8</sup> Tynaliev, Urmat. 2010.

the period.<sup>9</sup> Migration played an especially large role in alleviating the jobs gap for rural workers and youth (Figure 2.2).

**Figure 2.2: Job Deficits in the Kyrgyz Republic (including migrants in the labor force)**



Source: Staff estimates from Kyrgyz LFS.

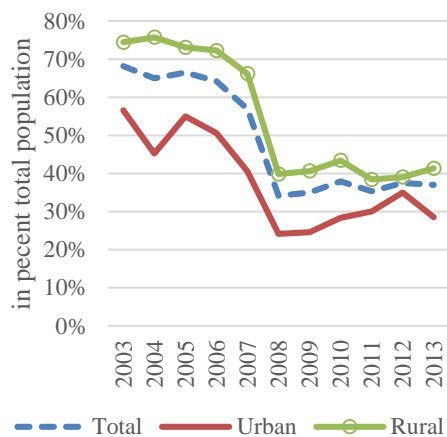
**2.4 Internal migration also contributed to the growth recovery.** The disparity in welfare between the largely urban northern oblasts and the rural south created a pocket of poor with both higher rates of growth of the working age population and more limited jobs opportunities. The ability for workers to move within the country, mostly from the south to the cities (about 60 percent of internal migration has been inter-oblast), has also allowed the Kyrgyz Republic to relieve a source of social pressures and instability. It is estimated that over the past two decades, internal migrants in the Kyrgyz Republic reached 1.9 million, meaning that one in every three citizens of the Kyrgyz Republic had changed his or her domestic residence at least once<sup>10</sup>.

<sup>9</sup> The jobs gap may be larger than the domestic unemployment rate suggests, though, as the share of working age inactive adults has also increased. This exit from the labor force may reflect a discouragement from job-search, but remittances may also impact labor supply decisions.

<sup>10</sup> Fryer, et al. 2014.

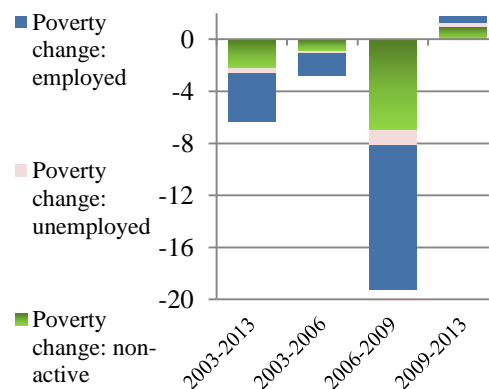
**2.5 Remittances supported significant gains in poverty reduction.** In addition to the direct impact on households receiving remittances, the economic expansion that was fueled by remittances has led to a massive movement out of poverty across all regions and demographics. Not only has poverty been reduced across geography, it has fallen steadily for employed and unemployed alike, as households have adjusted labor responsibilities with increased incomes from migration. For households with a migrant abroad, the receipt of remittances accounted for almost double the reduction in poverty over the 2008 to 2013 period (with lower levels of domestic employment and lower domestic wages for those working contributing to some poverty worsening).

**Figure 2.3: Poverty rates in the Kyrgyz Republic by residence, 2003-13 (using constant poverty line for 2013)**



Source: Staff estimates from KIHS.

**Figure 2.4: Decomposition of poverty decline of working age population, 2003-2013**



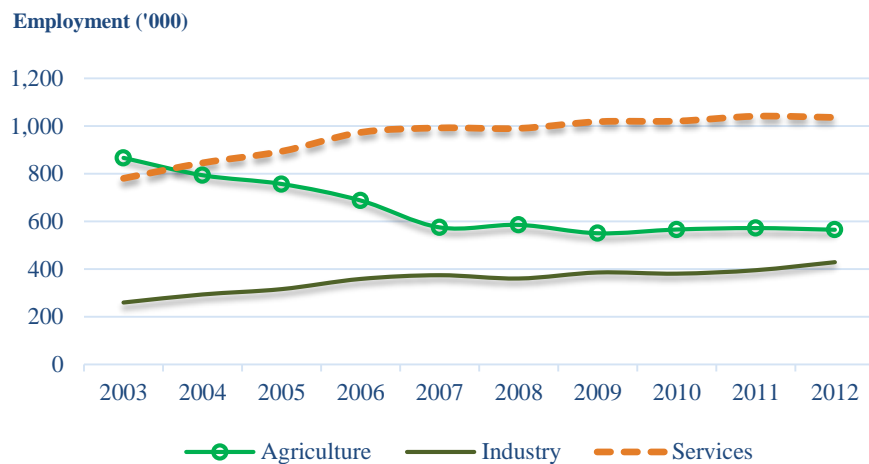
Source: Staff estimates from Kyrgyz LFS.

## B. KEY SHIFTS IN EMPLOYMENT

**2.6 A dominant feature of the Kyrgyz Development model was labor movement: across space, across sectors, and across types of employment.** A major shift involved family and small farmers leaving agriculture. In part pushed by further deterioration of agricultural prospects through overgrazing, large scale abandonment of unsustainable farm employment occurred, such that within 6 years, the share of the population employed in agriculture had declined from 45 percent to 30 percent, a decline of about 150,000 jobs (Figure 2.7).

**2.7 Many of these workers migrated abroad for work.** The labor force statistics cannot fully capture the extent of migration and likely heavily underestimate its presence for description of migration estimates from the LFS). The LFS suggests an increase of external migration of more than 4-fold between 2003 and 2012, from 45,000 to about 190,000. Other sources (including estimates from host countries) reckon the amount of Kyrgyz migration in the range of 500,000 to 1,000,000 workers, though some of that migration is of very temporary in nature (for example day trade). With a labor force of about 2.5 million workers, the migration phenomenon must be considered exceptionally important.

**Figure 2.5: Total domestic employment by sector, 2003–2012**



Source: Staff estimates from Kyrgyz LFS.

**2.8 But a large number of workers searched for alternative employment within the Kyrgyz Republic.** A comparison of the official net emigration rates and the loss of jobs in agriculture between 2003 and 2012 reveals that at least half the workers who left agriculture remained in the Kyrgyz Republic, where they either joined the ranks of the unemployed and of the inactive or found employment outside agriculture. The change in employment reported in sectors outside agriculture strongly **correlated** with the share of agricultural jobs lost, minus the share represented by emigration. This suggests that a large pool of workers seeking employment outside agriculture did so within the country.

**2.9 Remittances fueled jobs growth in services and construction.** As remittances fueled domestic demand for services and housing, new jobs expanded significantly in both sectors. While about 150,000 jobs were shed in agriculture between 2003 and 2012, about 275,000 jobs on net were created in construction and services (a growth of about 40 percent).

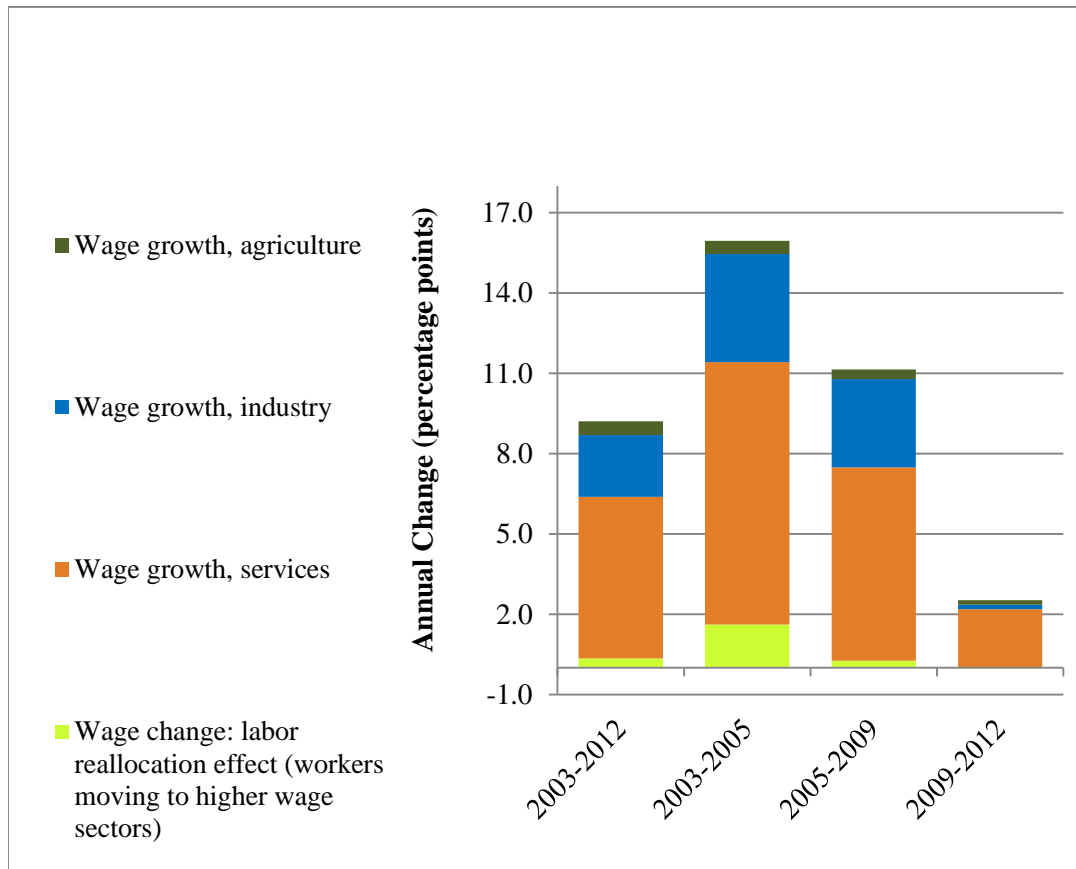
#### *Employment shifts largely reflected movement of the poor*

**2.10 The structural shift was primarily a movement of the poor, to other jobs, other regions, and other countries.** The key sectoral shift was from agriculture to off farm work. In 2003, about 54 percent of all poor workers were engaged in agriculture, while by 2012 only about 37 percent of poor employed workers were in agriculture. But the movement of the poor has had spatial and formality dimensions, too. Poorer households have disproportionately contributed to the migration phenomenon. About one in every four families have an external migrant, but for poor families, that figure is closer to one in every three families. Internal migration of the poor has been even more prevalent, with about two in every five families having a household member employed in an oblast other than their place of birth. This dynamic movement has not occurred at nearly the level for non-poor workers.

**2.11 This movement of workers raised wages and labor incomes.** This movement of the economically disenfranchised had significant impact on overall wage and labor income growth. Between 2003 and 2012, real wages rose by almost 9 percent a year, as the flow of remittances into

the economy buoyed spending and the growth of services which pulled wages economy-wide. Overall wages grew not only because of wage growth within each sector, but also because of the shift of workers out of (low wage) agriculture to services. This provided early gains in wage growth, which have only recently dissipated (Figure 2.6).

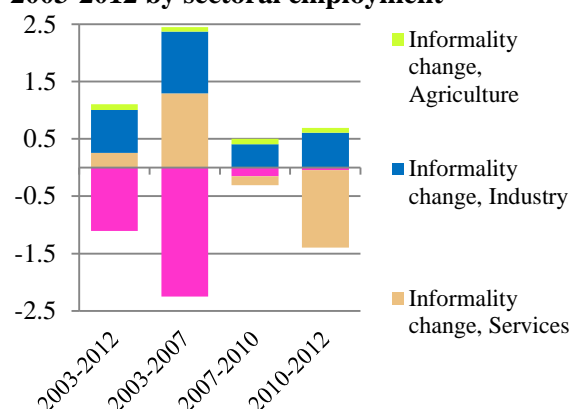
**Figure 2.6: Decomposition of wage growth in the Kyrgyz Republic, 2003-2012**



*Source:* Staff estimates from Kyrgyz LFS. Shapley decomposition of estimated growth attributable to wage growth within sector versus sectoral reallocation.

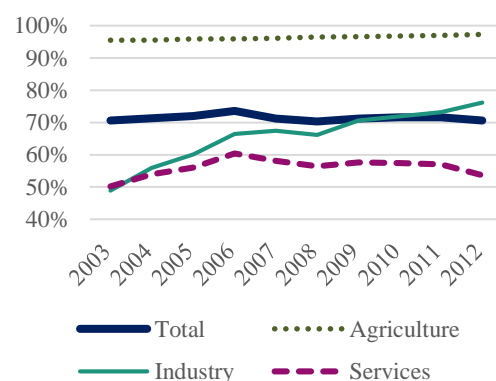
2.12 The movement of poor, rural workers heightened informality within sectors. An interesting consequence of the movement of largely poor, rural farmers was the movement of informality from rural agriculture to other sectors. Although in aggregate, informality in the Kyrgyz Republic has remained broadly unchanged since the early 2000s, at the sectoral level informality has increased significantly, as the movement out of (almost entirely informal) agriculture was balanced by a growing informality in industry and services (Figure 2.7). Manufacturing and construction have experienced particularly large increases in informality, driving up the overall industrial informality rate to more than 75 percent of employment from less than 50 percent (Figure 2.8).

**Figure 2.7: Decomposing the growth in informality 2003-2012 by sectoral employment**



Source: Staff estimates from Kyrgyz LFS (overall employment) and NSC establishment reports (formal employment).

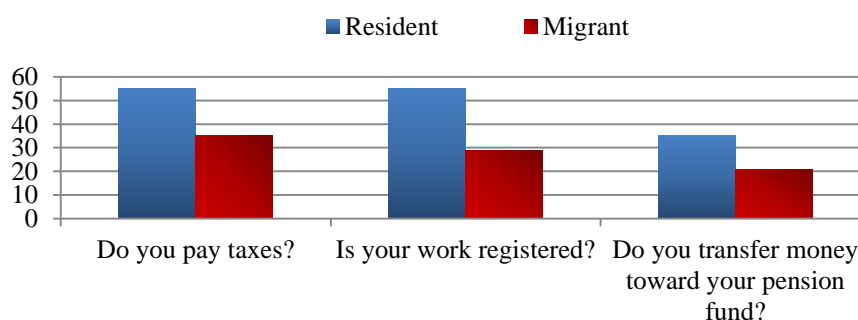
**Figure 2.8: Informal employment as share of total employment by sector, 2003-2012**



Source: Staff estimates from Kyrgyz LFS.

**2.13 Registration requirements for employment heightened informality.** Fueling the growth of informality was a complex regulatory environment for non-resident employment. Despite its Law on Internal Migration, the Kyrgyz residential registration system remains a modified version of the Soviet Propiska system, requiring employees to have official residential status. The process by which residential status is both complicated and non-transparent, with a high degree of discretion in required procedures, and there are incentives for landlords not to provide tenants with the required documents. As a result, many internal migrants don't register, and thus cannot be legally employed. This alone has allowed for large pools of unregistered, cheap labor feeding the informal sector of the economy. A study by the American University of Central Asia<sup>11</sup> corroborates this finding, noting that internal migrants are systematically more likely to engage informal activities, hindered in part by registry requirements (Figure 2.10). The situation not only impacts job prospects but welfare. Without registry in the city, migrants have more limited access to medical treatment, access to education, and other basic services.

**Figure 2.9: Differences in formality by residential status, 2010**



Source: Nasritdinov, 2010.

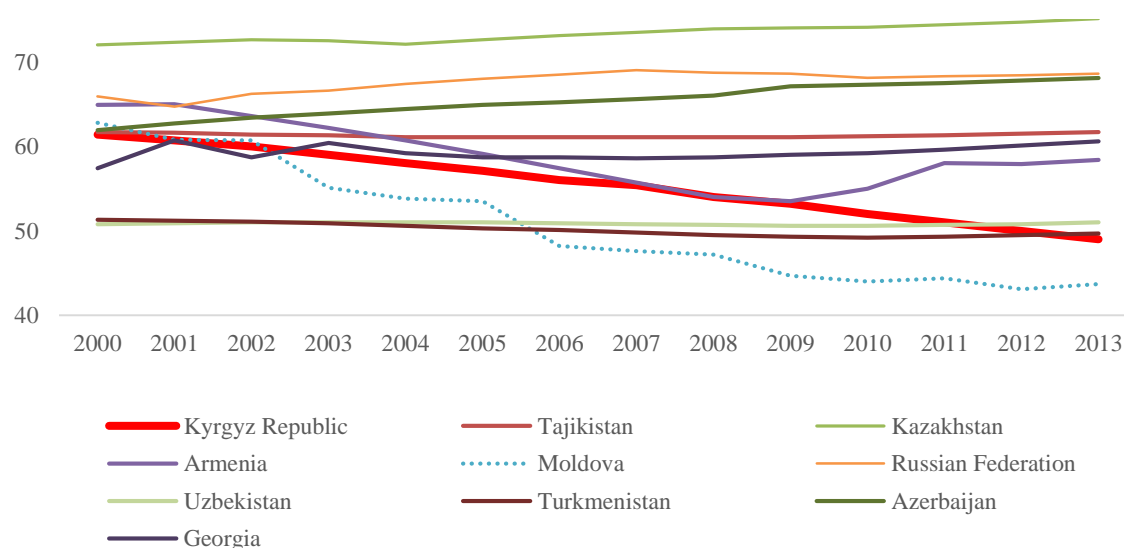
<sup>11</sup> Nasritdinov et al, 2010. *Informal Economy and Social Vulnerability in Kyrgyzstan and Tajikistan*. American University of Central Asia.



### *The migration model impacted participation and educational decisions*

**2.14 Migration increased male participation, while female labor force participation declined.** The movement of work outside of the Kyrgyz Republic had palpable effects on the domestic labor force, with strong gender dimension. Male labor force participation has increased (from 72 to 76 percent), and as females have had to adjust to household members working abroad, their own labor participation declined. The share of working age women engaged in household work or child rearing rose steeply from 16 percent to 26 percent over the decade, a phenomenon consistent with other migration-dependent economies in the region. Of the migration-dependent economies in the CIS (Armenia, Tajikistan, Moldova, and the Kyrgyz Republic), all have demonstrated a decline in the participation of women, sometimes dramatic, while all other CIS economies have exhibited an increase in female labor force participation (Figure 2.10).

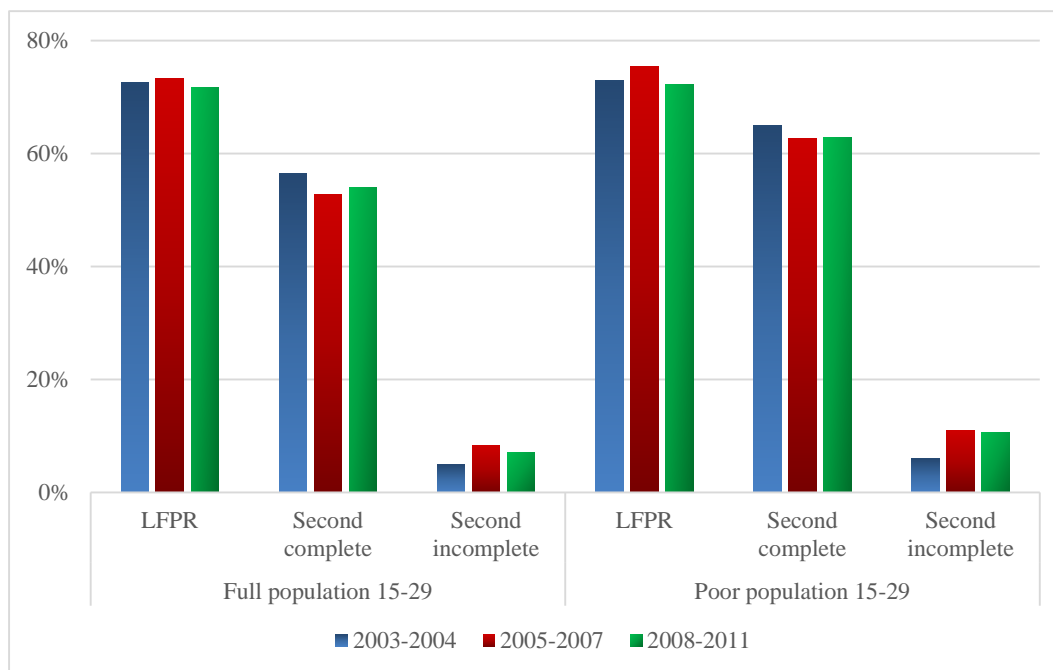
**Figure 2.10: Female labor force participation rates dynamics, 2000-2013**



Source: Staff estimates from Kyrgyz LFS.

**Migration has led to reductions in secondary school completion.** As men have increased their participation to respond to new work opportunities abroad, the age of first time work has reduced, and secondary school completion has dropped. The decision to leave school early for opportunities abroad has been particularly prevalent for poor workers, where between 2004 and 2007, the labor force participation rate for young workers increased from 72 to 76 percent, while the proportion with incomplete secondary education grew from five percent to eleven percent (Figure 2.11).

**Figure 2.11: Labor Force and Secondary Schooling Decisions for Young Persons, 2003-2011**



Source: Staff estimates from Kyrgyz LFS.

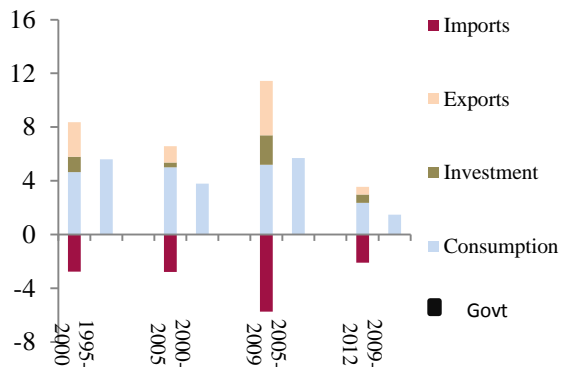
### C. GROWTH, PRODUCTIVITY AND WAGE IMPLICATIONS OF THE MODEL

#### *The sources of growth turned inward*

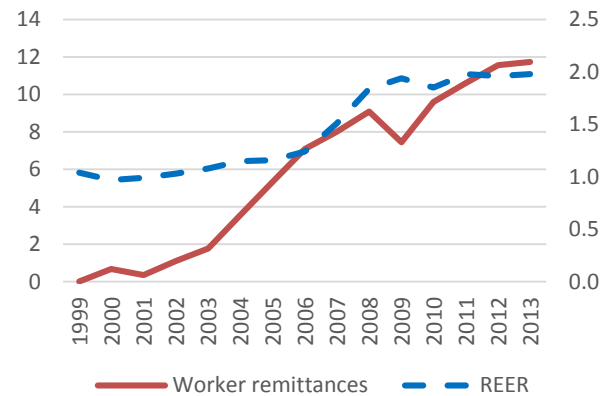
**2.15 Growth turned inward.** The inflow of remittances was channeled primarily into consumption, investment, and imported goods. Total consumption rose by an average of 19 percent a year between 2005 and 2013, and, by 2013, it averaged 135 percent of GDP, up from around 90 percent in 2001. Investment also increased dramatically, going from about 12 percent of GDP in 2003 to 35 percent in 2012. The bulk of the expansion in consumption and investment was centered on households and went to finance children's education, health care, and residential housing construction.

**2.16 Tradeables declined considerably as a source of growth and revenue.** Many of the classic symptoms of "Dutch Disease" accompanied the migration driven growth model. The inflow of remittances has created a foreign exchange surplus, triggering an exchange appreciation. With that, there has been a considerable slowdown in manufacturing growth, and a rapid acceleration in service sector growth. Between 2005 and 2012, manufacturing output declined by 2.3 percent a year (a 17 percent decline over the period), while the services sector expanded in real terms by 8.9 percent a year (60 percent overall).

**Figure 2.12: Decomposition of GDP growth, 1995-2012**



**Figure 2.13: Growth of Remittances and Real Effective Exchange Rate Movements 1999-2013**



Sources: Staff estimates from Kyrgyz LDB (1/15 update); Kyrgyz LDB 2015; WDI.

	Real output per worker 2005	Real output per worker 2012	Share of employment 2005	Share of employment 2012	Avg annual output growth 2005-2012	Productivity growth 2005-2012	Employment growth 2005-2012
Agriculture	926	1,220	38	28	-0.2	4.0	-4.1
Industry	1,554	1,253	16	21	1.3	-3.0	4.5
Construction	894	980	6	9	8.6	1.3	7.2
Mining	1,687	1,474	0	1	3.4	-1.9	5.4
Manufacturing	1,974	1,473	8	9	-2.3	-4.1	1.8
Elec/gas/water	1,841	1,462	2	2	2.1	-3.2	5.6
Services	1,120	1,755	45	51	8.9	6.6	2.1
Transp/comm	1,372	...	6	7	...	...	3.1
W&R trade	1,873	...	13	17	...	...	4.1
Other	675	...	26	27	...	...	0.8
Total	1,115				4.8	4.3	0.5

Sources: Value added, Kyrgyz LDB 2015. Employment: Kyrgyz LFS.

**Table 2.1: Growth, Employment and Productivity Dynamics 2005-2012**

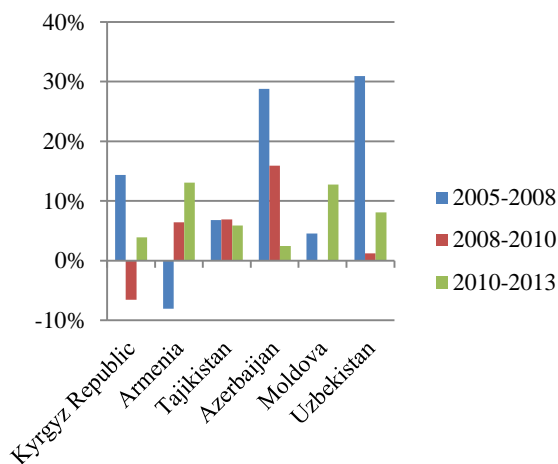
### *Early productivity gains, but strong declines in industry*

**2.17 Initial productivity gains subsided.** Initial movements of surplus labor out of agriculture resulted in strong productivity improvements. Over the 2005-2012 period, employment in the agriculture sector declined by 25 percent. With very low initial productivity levels in agriculture, movement to other forms of employment - even very low-value informal activities - had the effect of raising overall labor productivity (and, accordingly, wages and labor income). However, since 2009, there has been no further productivity growth from labor reallocation. Productivity growth

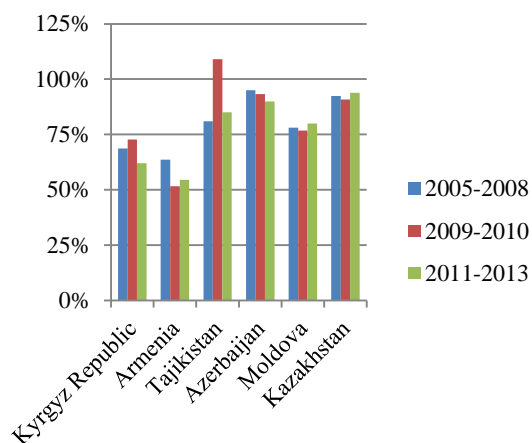
itself has dropped strongly, from more than 7 percent a year between 2005 and 2009 to less than 1 percent a year since 2009 (Figure 2:16).

**2.18 Relative to other CIS countries, Kyrgyz export growth has deteriorated sharply.** Although the Kyrgyz Republic managed strong export growth in the early 2000s, since 2008, Kyrgyz exports have declined by about a half a percentage point a year, trailing far behind the positive rate of growth of exports of goods and services observed in most of the other CIS countries (where export growth averaged 7 percent a year in real terms). Merchandise goods export growth has been slower still. Whereas in 2009 goods accounted for 72 percent of the Kyrgyz Republic's exports, by 2013 they made up just 58 percent.

**Figure 2.14: Growth of exports of goods and services 2005-2013 (US\$ 2005)**

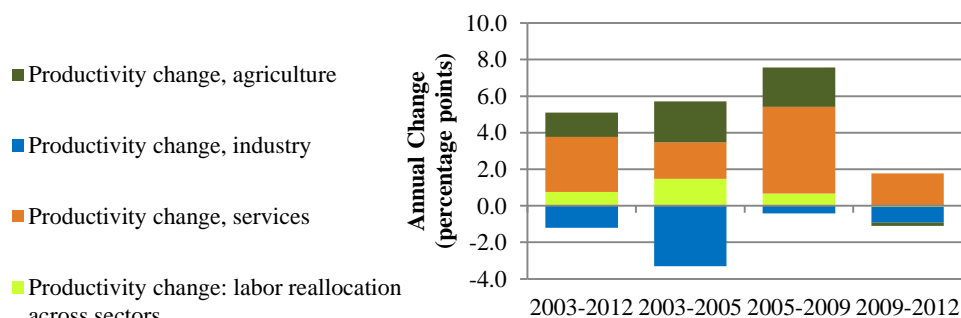


**Figure 2.15: Merchandise exports as a share of exports of goods and services, 2005-2013**



Source: WDI data (12/14 update).

**Figure 2.16: Shapley decomposition of average output per worker growth 2003-2012**



Sources: Staff estimates using value added data (Kyrgyz LDB, 1/15 update) and employment data at the sectoral level (Kyrgyz LFS).

**2.19 Current productivity growth has been limited to the service sector, itself concentrated in transport and communications.** Strong output growth in the service sector supported increasing productivity (averaging almost 9 percent a year) as well as employment. However, the bulk of the growth in service sector output can be attributed to a dramatic increase in transport and communications. While transport and communications accounts for only about 15 percent of services sector employment, real output growth averaging almost 25 percent a year over the period drove about two thirds of the average annual real output growth in the services sector overall. Underpinning this stellar growth has been penetration of new communications technologies, including mobile telecommunications and internet, supported by expanding private sector demand. Outside of T&C, however, performance in the service sector has been more modest, supporting relatively low productivity growth (averaging less than 1 percent a year between 2005-2012), and modest employment advances (averaging 2 percent a year). Thus, while the services sector as a whole has experienced robust productivity growth, it has largely been limited to the transport and communications sector, and has not been accompanied by strong employment growth (Table 2.2)

**Table 2.2: Estimated Contribution to Service Sector Output Growth, 2005-2012**

	<b>Real output growth 2005- 2012</b>	<b>Employment growth 2005-2012</b>	<b>Productivity growth 2005-2012</b>	<b>Contribution to total growth of output in the services sector /a</b>	<b>Contribution to total employment growth in services</b>
Transport/communication	24.1%	3.1%	20.4%	71.9%	20.4%
Wholesale/retail trade	4.9%	4.1%	0.8%	23.6%	58.9%
Other services	1.5%	0.8%	0.7%	4.5%	20.7%
Total services sector	8.9%	2.1%	6.6%	100.0%	1.0%

Note: Output growth estimated from national accounts data to 2008 and KER data from 2009-2012.

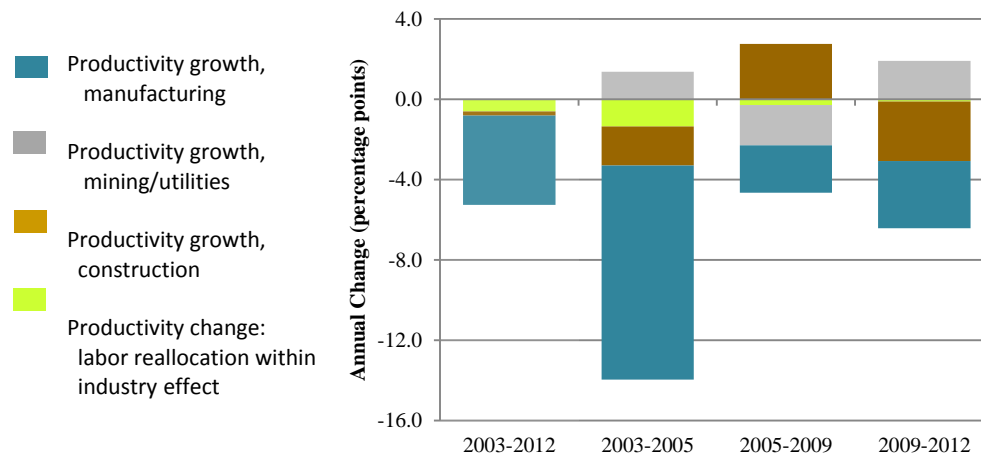
Sources: Staff estimates using national accounts data, KER service sector data (on output), and Kyrgyz LFS.

**2.20 Productivity has declined strongly in the industrial sector.** The inflow of remittances supported a boom in demand for housing, leading to a large number of new jobs in construction. With productivity in the construction sector about half that of other industrial activities (mining, manufacturing and utilities), the growth in construction has lowered the overall productivity of the industrial sector (Figure 2.17). But beyond a changing structure, the industrial sector has been marked by heavy declining in manufacturing productivity, which has fallen almost 6 percent a year over the later 2000s to 2012.

**2.21 Productivity has been dragged by informality.** A comparison of economy-wide productivity estimates with productivity estimates from the formal sector suggests that informality has been a significant factor in the deteriorating productivity growth both at the national level and particularly within the industrial sector. Formal sector data from firms (examined more closely in the following chapter) suggests that aggregate productivity growth in the formal sector has been strong, averaging 6.7 percent a year since 2009. Economy wide, however, productivity growth

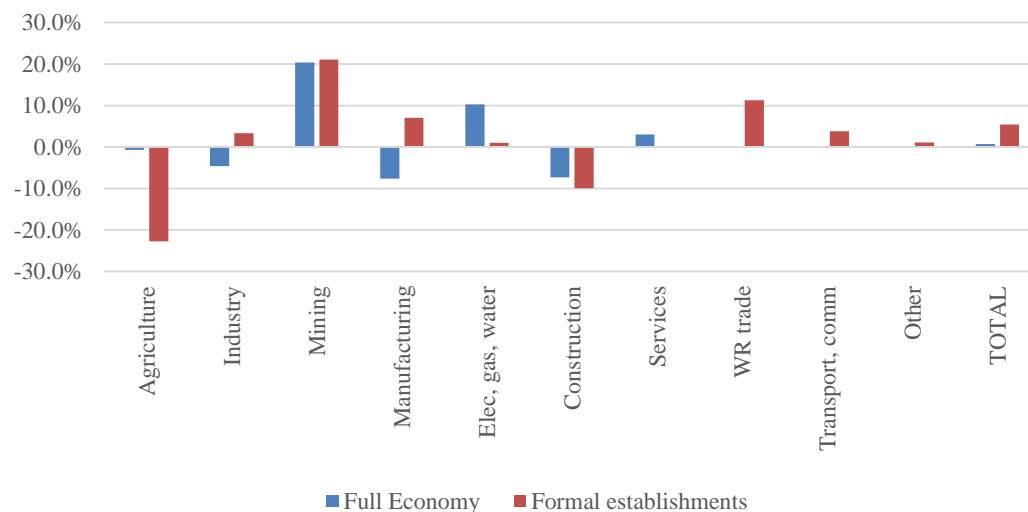
averaged less than 1 percent a year, hinting at significant productivity declines emanating from the informal sector. The formal/full economy productivity differential is particularly large in the industrial sector (Figure 2.18), where informality has risen strongly. The results suggest that both rising informalization (and productivity declines within the informal sector) are strongly impacting overall productivity.

**Figure 2.17: Decomposition of productivity growth in industry, 2003-2012**



Sources: Staff estimates using value added data (Kyrgyz LDB, 1/15 update) and employment data at the sectoral level (Kyrgyz LFS).

**Figure 2.18: Productivity growth by sector: Full economy versus formal establishments 2009-2012**



Source: Staff estimates from KER data (formal establishments); National accounts/Kyrgyz LFS (full economy productivity).

## D. LIMITED DEVELOPMENT OF A FORMAL PRIVATE SECTOR

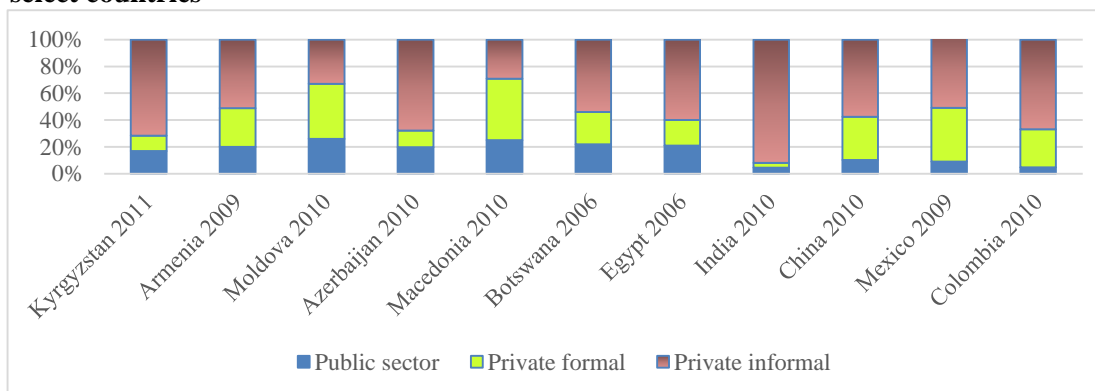
2.22 **The migration-led growth model has not allowed for the expansion of the formal private sector.** The formal sector is small in the Kyrgyz Republic, and within the formal sector, public sector dominates employment. Statistics on public employment from the National Statistics Office suggest that public sector employment accounts for only 17 percent of overall employment --about in keeping with OECD levels. However, as a proportion of formal employment, public sector employment accounts for a full 60 percent.

**Table 2.3: Public Sector Employment in the Kyrgyz Republic, 2010-2011**

	Number of jobs		Percent of overall employment		Percent of employment in establishments	
	2010	2011	2010	2011	2010	2011
Education	149,179	150,604	8%	7%	27%	26%
Health	63,843	66,263	3%	3%	11%	12%
Civil Service	18,561	18,644	1%	1%	3%	3%
Municipal	9,917	10,112	1%	1%	2%	2%
Other public	93,657	95,275	5%	5%	17%	17%
<b>Total public employment</b>	<b>335,157</b>	<b>340,898</b>	<b>17%</b>	<b>17%</b>	<b>60%</b>	<b>60%</b>

*Sources:* World Bank, 2014 (Kyrgyz Republic Public Expenditure Review Policy Notes); National Statistics Committee (employment in establishments); Kyrgyz LFS.

**Figure 2.19: Share of employment in private formal, public formal and informal sector, select countries**



*Source:* Staff estimates from country data, including World Bank 2014a and 2014b; Kyrgyz NSC data and Kyrgyz LFS (to calculate share formal and informal); IZA 2011; ILO 2011 and 2012; Bayramov, 2012. Bino 2009. OECD 2012.

2.23 **There has been limited development of formal private sector jobs.** The corollary to the figure above is that only 40 percent of establishment employment – and 11 percent of overall employment – takes place in formal private sector establishments. While a comprehensive

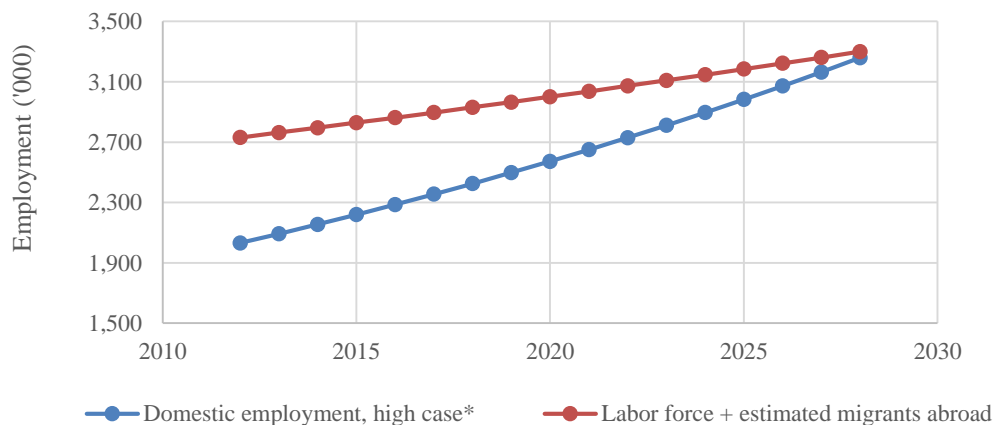
accounting of employment in the formal private sector across countries is not easily obtained, piecing together information from a few studies across countries suggests that formal sector employment outside the public sector accounts for a very low share of employment relative to almost all countries. Among CIS economies where estimates could be made, the share of employment generated in the formal private sector in the Kyrgyz republic is the lowest among all countries (Figure 2.19).

## E. IMPLICATIONS OF THE MIGRATION LED DEVELOPMENT MODEL ON SUSTAINABLE, PRODUCTIVE JOB GROWTH

### *Core development challenges with respect to jobs*

**2.24 Domestic jobs growth has been insufficient to provide employment for the fast growing labor supply.** At the aggregate level, economic growth over the decade has been "jobless" with the employment elasticity of growth just 0.1 (with the average annual growth of real output of 4.7 percent resulting in an increase in domestic employment of just 0.5 percent). Current rates of unemployment, combined with large numbers of workers employed abroad and relatively rapid labor force growth will make it unlikely that the Kyrgyz Republic can provide sufficient domestic employment opportunities for all its workers for the foreseeable future. Even assuming a healthy rate of employment creation capacity of growth of 0.6 percent<sup>12</sup>, with an estimated half million workers abroad and another quarter million unemployed, and with labor force growth averaging 1.3 percent a year, even if economic growth were to average 5 percent a year, there would be insufficient numbers of jobs created for the domestic labor force and those currently working abroad at least for the next fifteen years (Figure 2.20).

**Figure 2.20: Domestic employment growth under high employment growth scenario versus labor force growth, 2012-2030**



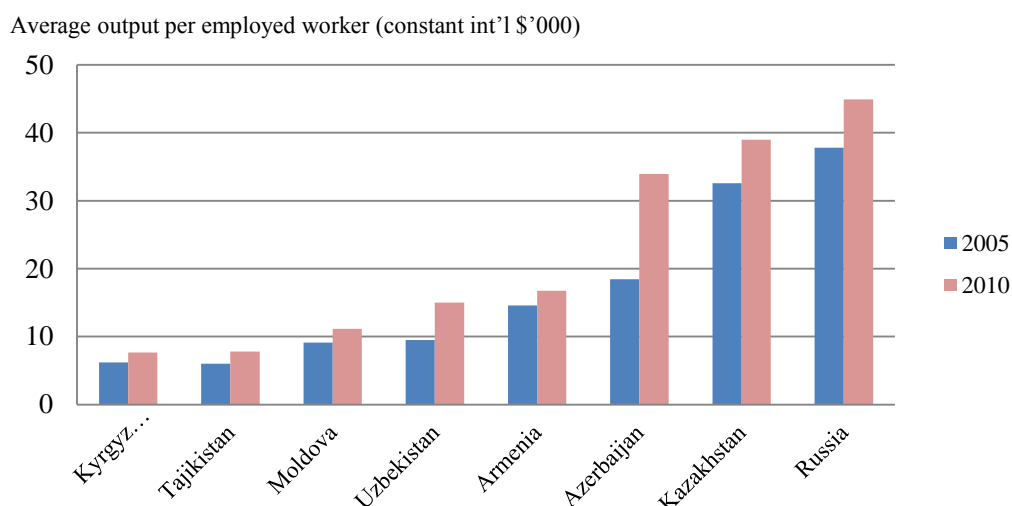
*Source:* Staff estimates from UN and Kyrgyz LFS (estimates of current unemployment and domestic labor force). Migrants abroad was estimated at 500,000 workers, a figure between 250,000 estimated migrants from the Kyrgyz LFS (See Box 1.1), and the UN estimate of about 750,000. Employment growth is estimated at 3% a year, assuming an optimistic average GDP growth rate of 5% a year and an average employment elasticity of 0.6.

<sup>12</sup> The overall employment elasticity of 0.1 is likely far below the employment/growth relationship going forward, as the figure largely reflects the significant labor shedding that has continued in agriculture which may be beginning to wane. An employment elasticity of 0.6 reflects the past employment elasticity outside of agriculture (with job growth averaging 3.9 percent a year and output growth averaging 6.6 percent a year).



**2.25 Secondly, productivity growth has been low relative to other CIS economies.** The remittance-financed growth model yielded early productivity gains, with workers moving out of subsistence agriculture to work in services and industry (primarily construction). But while continuing growth in services has supported productivity growth (though concentrated in a few sub-sectors), most other sectors - including manufacturing, mining, and electricity have all experienced large declines in productivity over the decade. Overall, productivity growth fell from about 7 percent a year between 2005 and 2009 to about 0.7 percent a year since 2009, significantly below the productivity growth of Kyrgyz's neighbors (Figure 2.21).

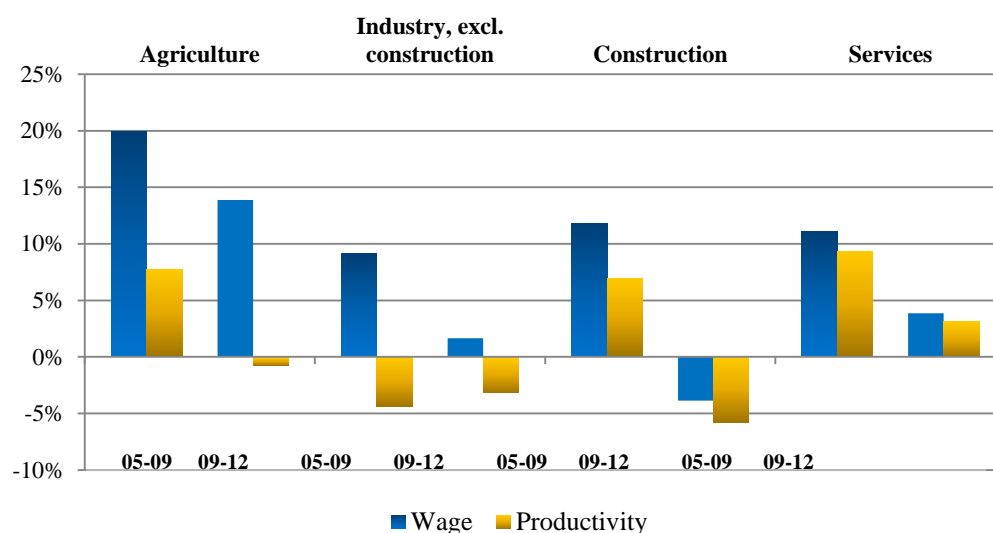
**Figure 2.21: Average worker productivity, Kyrgyz versus other economies 2005 and 2010**



*Sources:* Staff estimates from WDI for value added (12/14 update) and country sources for employment data.

**2.26 Thirdly, real wage growth exceeds productivity growth, weakening competitiveness.** Real wages have grown by 10 percent a year since 2005, driven by strong wage growth in both construction and services. Productivity growth, on the other hand, has averaged less than 5 percent a year. The difference between wage growth and productivity growth has been particularly high in the tradables sectors, weakening external competitiveness. Real wages in agriculture averaged 17 percent a year, compared with 4 percent a year productivity growth. Manufacturing wages increased by an average of 6 percent a year compared with productivity declines averaging 4 percent. This could be a symptom of labor shortages developing from both internal and external migration. The general rise in wages in tradeables without accompanying productivity growth is concerning because it signals a further weakening of external competitiveness (Figure 2.22).

**Figure 2.22: Wage growth and productivity growth by sector, 2005-2012**



*Sources:* Staff estimates from Kyrgyz LDB (1/15 update, value added) and LFS (employment) data.

**2.27 Fourth, the geographic concentration of migration exposes the Kyrgyz employment model to risks.** Kyrgyz migrants have been primarily young men working in Russia. Over 85 percent of the emigration has been accounted for by only two countries (Russia and Kazakhstan), making the migration model vulnerable to particular country changes either in economic conditions (necessitating labor inflows) or in immigrant labor regulations. Indeed, the Russian Federal Migration Service's new requirement that, by 2015, all citizens of CIS countries outside the Eurasian Customs Union who desire to enter Russia must have valid international passports made the accession of the Kyrgyz Republic to the customs union almost inevitable. With much of the domestic growth model fueled by the remittances received from these two countries, overall vulnerability is compounded.

**2.28 Finally, the presence of migration has also reduced the imperative for domestic job growth.** With migration to buffer jobs deficiencies, unemployment has remained relatively stable even as the size of the labor force has expanded rapidly. However, the seemingly limitless availability of temporary jobs abroad, along with robust consumer demand, may have also dulled the urgency to create more and better-paying jobs domestically for the labor force. In this way, migration serves as a disincentive to job-creating structural reforms.

**2.29 Formulating strategies for improved jobs outcomes requires a deeper investigation of micro-level data, with a focus on a formal firms.** Thus, using micro level data, we are interested in exploring the dynamics of growth, productivity, employment creation and labor compensation in formal establishments to better understand the decline of the formal industrial sector and the changing formal sector structure. It is through this understanding that constraints to formal sector job creation can be identified. The following two chapters take a deeper examination into worker and work, utilizing the household, labor force, and enterprise level data collected in the country.

## **CHAPTER 3. GROWTH, PRODUCTIVITY AND COMPENSATION DYNAMICS FROM FIRM LEVEL DATA ANALYSIS**

**3.1     Though the formal sector accounts for only about 30 percent of employment in the Kyrgyz Republic, it is important in overall employment outcomes.** To begin, the formal sector accounts for a majority of output that is produced in the economy. For example, it is estimated that formal establishments account for almost 70 percent of gross value added in the Kyrgyz Republic. Secondly, it is generally is the source of the better paying, more productive jobs. Thus, understanding the constraints it faces is important for improving the better quality jobs. Related, although the formal sector generally employs a lower proportion of the poor and the bottom 40 percent of the population than the informal sector, formal establishments still provide employment for a significant number of the less well off. Thus, in its own right, improving the job prospects in the formal sector can directly improve the labor incomes of the poor. Fourth, informal sector growth is often closely linked to performance in the formal sector. The development of new formal industries, for example, often paves the path for ancillary and supporting services that may remain informal. As a result, improving the performance of formal industries can be the most effective path for improving income prospects outside of the formal sector. This section assesses the performance of formal establishments in creating jobs utilizing a dataset created for this report, based upon the financial reports of establishments (Box 3-1).

**3.2     Despite the growth recovery over the 2000s, the Kyrgyz Republic has failed to create good jobs outcomes.** Job creation is not keeping pace with the growth in the labor force. The value of the jobs being created is improving only marginally, with low productivity and wage growth. Moreover, jobs are not sufficiently inclusive: there is a dualism and a tension in the jobs market between the formal sector and the informal sector, and the transition between these two sectors is difficult.

**3.3     A closer look at the formal sector suggests it has fallen short in all three indicators of jobs success, but most severely with regard to job growth.** Formal sector labor demand is muted. Formal private sector firm growth is stunted among small firms, limiting productivity growth and small firm job creation. Meanwhile, the growth of the formal sector has been concentrated among a few large firms with significant market power and scale economies which have not created jobs on net. While formal sector productivity growth has been substantial, it has been concentrated among a few firms. Wages have grown in aggregate, but this growth has few demonstrated links to productivity growth. The aggregate picture of the formal sector is one of limited job and productivity growth, and wage growth that is unaligned with productivity growth.

**3.4     Behind these factors are constraints on private sector growth and job creation.** These include complex, costly labor regulations affecting medium size firms, the array of advantages for large, sometimes loss-making firms, and the low rates of firm entry in particular job-intensive industries. Most employment growth is occurring in the large, generally less productive informal sector.

**3.5     Export-oriented manufacturing is particularly impeded from stronger growth.** While, in aggregate, the rate of entry of establishments into the formal sector is high, particular sectors, such as export-oriented manufacturing, exhibit significantly lower rates of firm entry. Given the

job-creation capacity of export-oriented manufacturing (on average, firms create 29 jobs), lack of entry into this sector is particularly troublesome for jobs.

**Box 3-1: A description of the Kyrgyz Establishment Reports (KER) dataset**

**Kyrgyz Establishments Reports (KER)** is a database compiled for this jobs report from mandatory statements that all establishments registered in the Kyrgyz Republic are required to submit, either on an annual or quarterly basis. Officially, the full financial reports include all establishments in the Kyrgyz Republic, but the forms completed differ by establishment type (with some variation in the requested information for non-profit establishments, small establishments, financial institutions, etc.). The data made available for this analysis include data from the Report on the Key Financial Indicators of the Enterprise (annual and quarterly); Statement of Sources and Uses of Funds (non-profit establishments); Statement of the Costs of Production and Distribution of Products, Works, Services of the Enterprise; Consolidated Report on Denationalization and Privatization of State Property; Report on Results of Issue and Subscription of Securities; and, Report on Key Performance Indicators of Small Businesses.

While the official reports submitted by establishments include all organizations and establishments, regardless of size, ownership structure, sector, or profit-making status, a smaller subset of these financial reports for the period 2009-2012 was provided for the purpose of this analysis. It includes all establishments with the exception of (i) financial institutions; (ii) public administration establishments; (iii) several large establishments whose identity could be compromised (in particular, the gold mining sector and railroads). These missing sectors account for approximately half of the establishment employment over the period (with a large proportion in public administration). The KER provides detailed information related to firm performance and employment, including inter alia: sales and expenses from which to calculate value added, profit, and the like; investment; and employment, man-hours and labor compensation. Information is also collected by which it is possible to determine each establishment's ownership structure, geographic location, main economic activity and, to some degree, age.

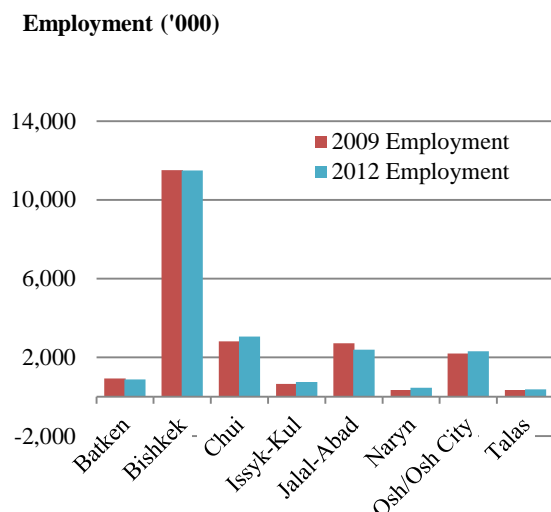
By virtue of several common identifier variables in the KER data (including its location and its sector) it is possible to broadly link the analysis of the firms to labor supply from the LFS (which also identifies workers who work in establishments, by location and main economic activity). The LFS is not designed to be representative at the sector level, and so caution needs to be applied in interpreting results. But the linking of labor characteristics to firm decisions on hiring and growth provides added insight into the potential impacts of particular job-growth strategies.

**A. A SNAPSHOT OF EMPLOYMENT IN THE FORMAL SECTOR**

*The formal sector differs strongly from the informal sector*

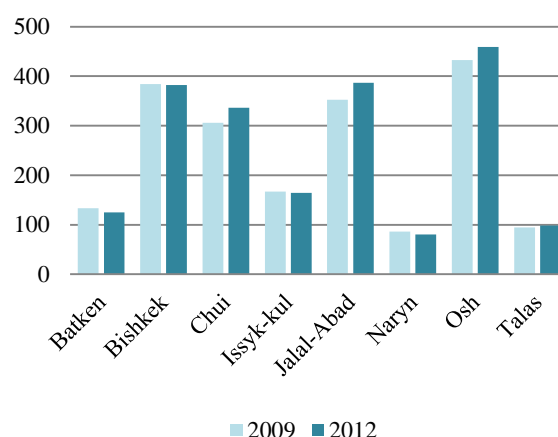
**3.6 The formal sector is largely urban.** While overall employment is distributed relatively evenly across oblasts, the majority of formal sector jobs (and establishments) are urban. Outside Bishkek, where about half of overall employment occurs outside enterprises, informality dominates employment by a wide margin. This is evident in data on total employment in rural areas versus employment in registered establishments (**Error! Reference source not found.and Error! Reference source not found.**).

**Figure 3.1: Formal Employment by Region, 2009-2012**



Source: Staff estimates from KER data

**Figure 3.2: Total Employment by Region, (in '000) for 2009-2012**

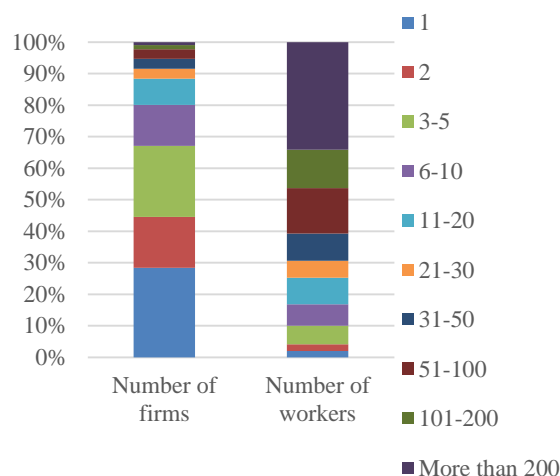


Source: Staff estimates from Kyrgyz LFS

**3.7 Formal sector employment is predominantly in large enterprises, while informal employment is mostly in small activities.** More than 60 percent of employment in the formal sector takes place in firms with 50 or more workers, and more than a third of employment takes place in firms with over 200 workers (Figure 3.3). Outside of the formal sector, however, most employment is in very small activities. For the broader economy, the Kyrgyz LFS suggests that 60 percent of domestic employment (formal and informal) takes place in firms with five workers or fewer, and only 6 percent in organizations of more than 60 workers (Figure 3.4). The difference in the picture of employment in formal sector versus the broader economy is evidence of the smallness of scale of informal activities<sup>13</sup>.

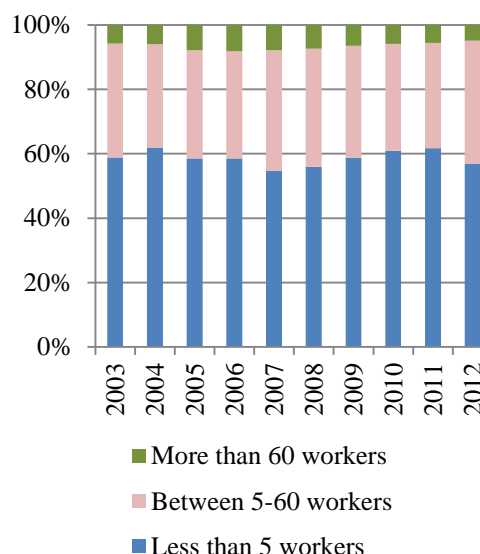
<sup>13</sup> Some of the difference between the proportion of workers employed in small firms according to establishment reports versus what is suggested economy wide might be attributed to underreporting of employment by small formal firms (that is, it is possible that the formal sector may also be small in nature, with much more employment taking place in small firms than reported). While underreporting employment (to social security) and sales (for tax purposes) is common among registered establishments, smaller firms tend to underreport more than larger firms. Cross-country evidence has found the degree of underreporting (the fraction of employment and/or sales not reported) to be about twice as high in small firms than in large firms. . Even doubling of the number of employees for all small establishments in the KER establishment sample would only raise the share of small firm employment in total employment to about 13%, far from what is suggested economy-wide. This would suggest that what is *not* covered by the KER – employment outside of registered establishments – is even more heavily dominated by micro and very small (less than 5 workers) activities and establishments.

**Figure 3.3: Distribution of firms and employment in the formal sector, 2012**



Source: Staff estimates from KER data.

**Figure 3.4: Distribution of employment by establishment size -- as recorded by workers 2003-2012**



Source: Staff estimates from KER data.

**3.8 There is a significant difference in the sectoral composition of employment for formal versus informal sectors.** Sectors which account for significant employment in the formal sector are almost not present in the informal sector, including public administration (11 percent of formal employment and fully formal), education (accounting for 30 percent of formal employment, versus 1 percent of informal employment), and health/social services (accounting for 12 percent of formal employment and only 1 percent of informal employment). Likewise, informal employment is dominated by agriculture and trade, as well as construction, which combined account for 70 percent of informal employment, and only 10 percent of formal employment.

**3.9 Related, there are large sectoral differences in the level of informality.** Table 3.1 highlights the share of employment in the sector accounted for by registered establishments<sup>14</sup>. Formal agriculture employment not surprisingly accounts for a very limited proportion of overall employment in the sector. But many other sectors are also highly informal, particularly in the services sector, and these sectors tend to dominate the smaller scale employment in the formal establishments. Employment in the hotels and restaurant sector is dominated by non-registered employment (employment not reported by registered establishments), as is wholesale and retail trade and construction. Among the sectors in which employment is heavily formal, other services leads the list, largely reflecting public administration (which is fully formal) (see Figure 3.5).

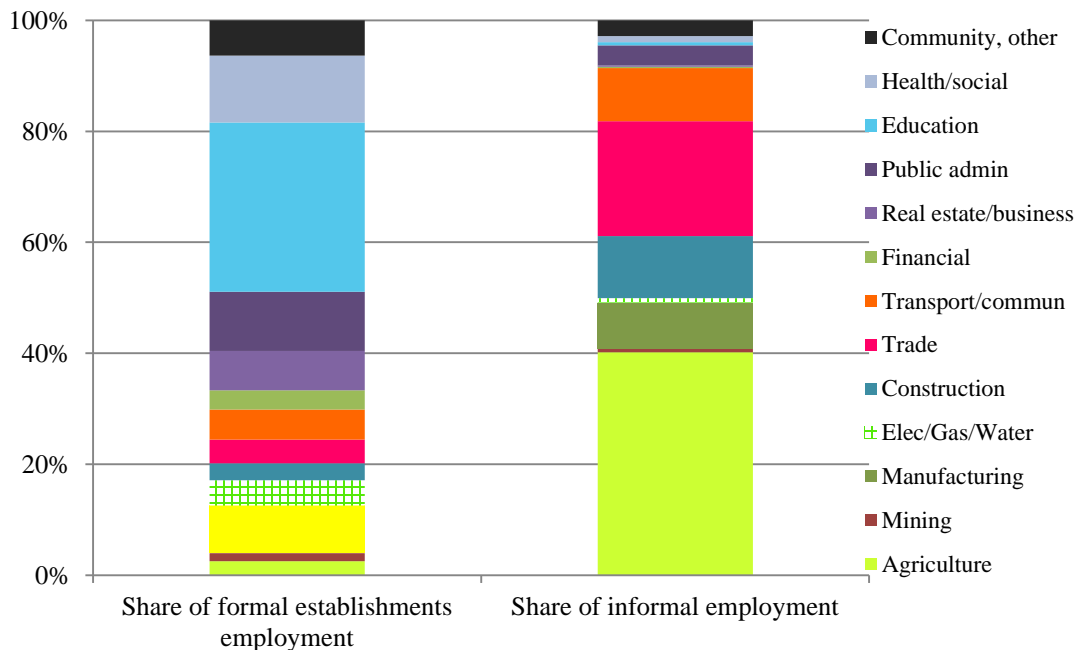
<sup>14</sup> Utilizing the broader NSC establishment reports.

**Table 3.1: Employment Growth in Registered Establishments versus Outside of Establishments, 2009-2012**

Sector	Sector's share of employment (overall)	Employment in registered establishments as a share of total employment	Employment growth: Registered establishments	Employment growth: total economy	Employment growth: outside registered establishments
Agriculture	27.8%	2.7%	-6.1%	1.1%	0.9%
Mining	0.6%	62.1%	7.6%	-22.3%	-8.6%
Manufacturing	8.9%	27.5%	-5.3%	5.5%	2.0%
Elec/gas/water	2.2%	58.7%	1.3%	2.0%	1.6%
Construction	9.4%	9.5%	-7.6%	9.0%	6.9%
W&R trade	17.0%	6.8%	1.2%	6.8%	6.4%
Hotels and Restaurants	3.3%	5.3%	-7.6%	0.7%	0.2%
Transport/communications	7.4%	21.3%	-0.6%	-2.6%	-2.2%
Other services	23.3%	78.6%	-4.1%	-1.8%	-15.8%
Total	100.0%	29.4%	2.0%	1.3%	1.0%

Source: Staff estimates from Kyrgyz LFS and NSC establishment reports.

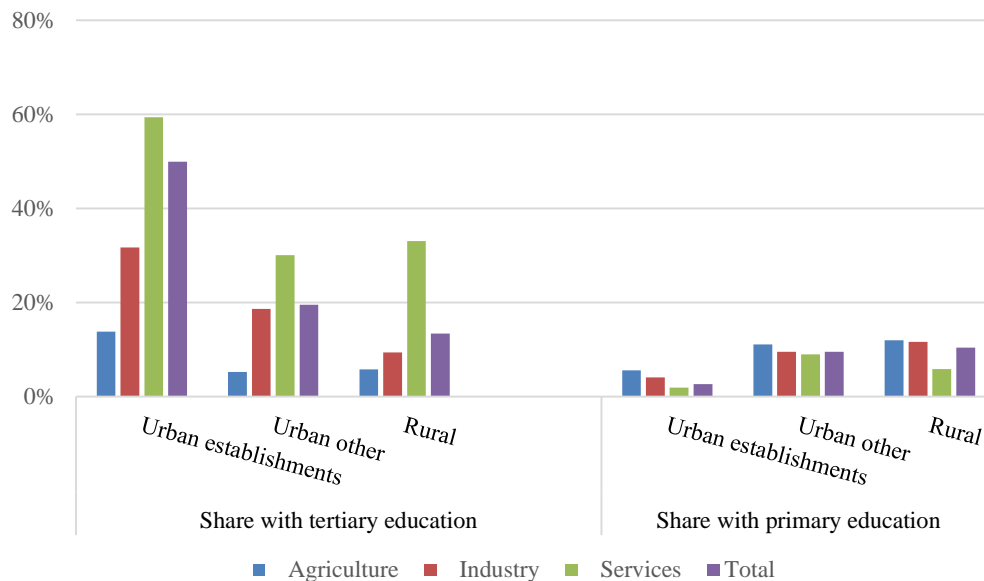
**Figure 3.5: Distribution of formal vs. informal employment by sector, 2013\***



Source: Staff estimates from Kyrgyz LFS (total employment), NSC establishment reports (formal sector employment).

**3.10 The workers themselves differ, with significantly higher education levels in the formal sector.** Formal sector workers are more likely to be well educated, and less likely to be uneducated. The LFS data provides an estimate of the education levels of workers being employed in the modern sector. On average, half of all workers in urban establishments have a tertiary education, versus only one in five outside the formal sector (and only 13 percent in rural areas). And the share of only-primary educated workers is disproportionately employed outside the modern sector. In both the urban informal sector and rural areas, 10 percent of workers have completed only primary school, versus only 3 percent in urban establishments (Figure 3.6).

**Figure 3.6: Share of employed workers with tertiary education versus primary: Urban establishments, urban informal and rural 2012**



*Source:* Staff estimates from Kyrgyz LFS.

**3.11 ...and significantly lower rates of poverty among the formal sector workers.** Though the KER establishment sample does not provide information on household income levels of employees, it is possible to get a closer gauge on the types of workers employed in the formal sector by looking at the characteristics of those employed in establishments versus others from the Kyrgyz LFS. From the LFS, workers in urban establishments exhibit a household poverty rate of 13 percent, versus 34 percent outside of establishments. The household poverty rate gap between working in establishments and outside establishments is particularly high in the industrial sector, where in manufacturing and construction the poverty rate for those employed outside establishments is estimated to be 3.5-3.7 times that of those working within (Table 3.2).



**Table 3.2: Poverty status of employed urban workers, establishments versus outside establishments, 2011**

	Proportion of urban workers in establishments, 2011	Poverty rate urban workers in establishments, 2011	Poverty rates urban workers outside establishment
<b>TOTAL</b>	<b>50%</b>	<b>13%</b>	<b>34%</b>
<i>Agriculture</i>	4%	30%	59%
<i>Industry</i>	45%	11%	34%
Mining	82%	23%	35%
Manufacturing	43%	8%	30%
Electricity	99%	12%	16%
Construction	23%	11%	38%
<i>Services</i>	54%	13%	30%
Trade	8%	12%	28%
Hotels/restaurants	39%	17%	42%
Transport/communications	35%	13%	39%
Financial intermediation	93%	7%	63%
Real estate/business	76%	11%	18%
Public administration	100%	11%	n.a.
Education	95%	16%	25%
Health/social	97%	14%	39%
Community	49%	15%	23%

*Source:* Staff estimates from Kyrgyz LFS.

## **B. A SNAPSHOT OF GROWTH AND EMPLOYMENT OUTCOMES IN FORMAL ESTABLISHMENTS**

### ***Job growth patterns among formal sector establishments***

3.12 **Over the 2009-2012 period, the formal sector experienced economic growth, but very little job growth.** On average, growth averaged more than 6.6 percent a year in real terms in the formal establishments represented in the KER establishment data. That compares with job growth averaging less than 0.4 percent a year (Figure 3.3). The bulk of job growth has come not from value-creating private sector firms (who account for two thirds of employment), but from non-profits and state-owned enterprises, despite the fact that state owned enterprises realized losses over the period (Table 3.3). While private sector, for profit firms saw productivity growth of more than 7 percent a year, on average they shed jobs at a rate of 0.5 percent a year since 2009.

**Table 3.3: Job Creation, Output Growth and Productivity Growth by Firm Type, (in percent except for index)**

	Proportion of total employment 2009	Average annual job growth, 2009-2012	Contribution to overall job growth	Proportion of Value added 2009	Average annual growth in Value Added, 2009-2012	Contribution to overall value added growth	Average productivity per worker (index) 2009	Productivity growth, 2009-2012
<i>Total</i>	100	0.4	100	100	6.6	100	100	6.2
State owned	22	1.9	107	4	1.1	1	20	-0.8
Private	78	0.0	-7	96	6.8	99	122	6.8
<i>Revenue generating</i>	74	-0.1	-23	100	6.6	100	136	6.7
State owned	6	3.8	66	4	1.1	1	66	-2.7
Private	67	-0.5	-88	96	6.8	99	142	7.3
<i>Non profit</i>	26	1.8	123	--	--	--	--	--
State owned	15	1.1	41	--	--	--	--	--
Private	11	2.8	81	--	--	--	--	--

3.13 **The majority of job growth in the formal sector came from new firms.** The KER data does not provide information on age of the establishment, but based on when the establishment is recorded in the sample, it is possible to determine those establishments which entered after 2009<sup>15</sup>. Using this gauge, entering firms created more about 60 percent of all the jobs created by establishments over the 2009-2012 period. Entrants created more than 32,000 jobs between 2009 and 2012, while established enterprises shed more than 35,000 jobs – or about 16 percent of the jobs that existed at the start of the sample in 2009.

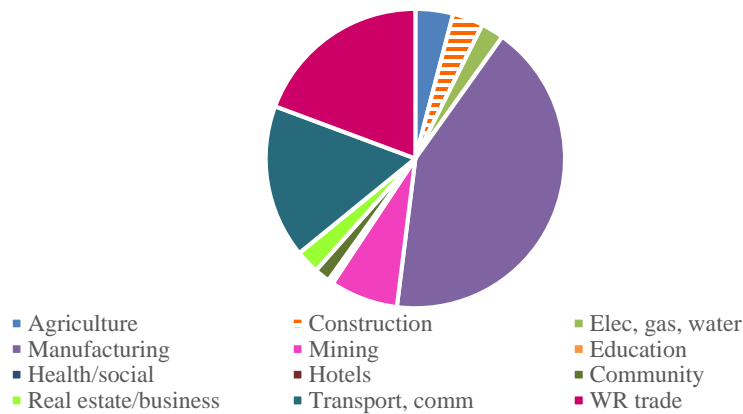
3.14 **Jobs were lost through firm exit, but also through labor shedding of surviving firms.** Of the 47,000 jobs shed by both exiting establishments and surviving establishments, about a third of them came from firms that continued to operate. These surviving companies shed labor at a rate of almost 3 percent a year over the 2009-2012 period. While the bulk of these job-shedding companies experienced negative output growth, a large share of growing companies also shed labor. Among growing establishments, about 60 percent of companies reduced their work forces, accounting for almost 20 percent of the job losses by all establishments over the period.

3.15 **At the sectoral level, while manufacturing has contributed the most to output growth, it has also shed the most labor.** Manufacturing accounted for the bulk of output growth, along with wholesale and retail trade and transport and communications (Figure 3.7). Job growth was limited across the board, but agriculture experienced strong growth in formal employment from its very low initial base, the result of several large poultry, dairy and crop growing establishments beginning operations after 2009. Services also experienced modest job growth, particularly from

<sup>15</sup> Some caution must be exercised in this interpretation, however, as there is the potential for firms to drift in and out of operational status (so called zombie firms), and entry may reflect a large portion of firms which were in existence prior to 2009.

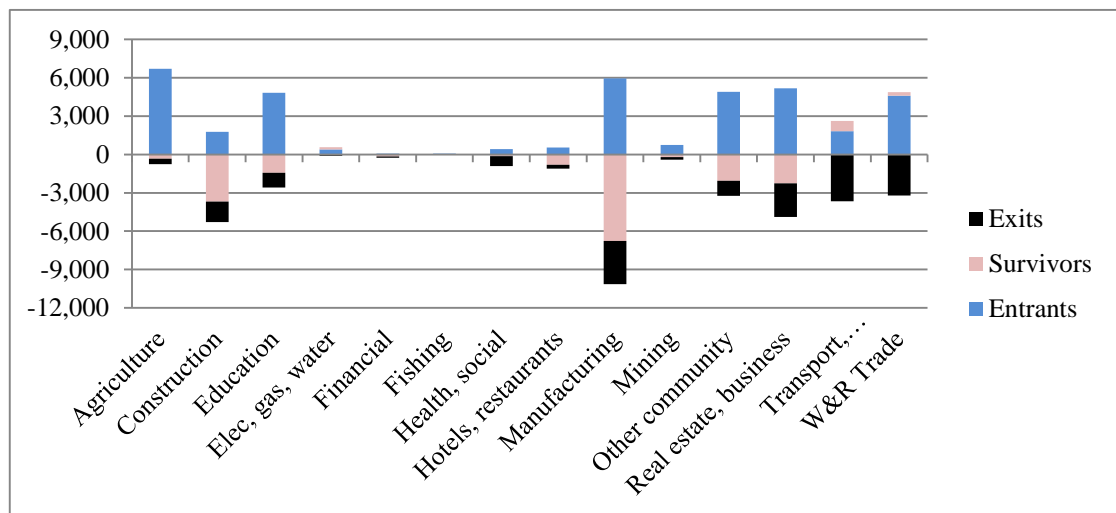
wholesale and retail trade and several sectors heavily populated with non-profit institutions, including community services and education. The greatest job losses for the economy came from manufacturing, where more than 4,200 jobs were shed (about 9 percent of manufacturing jobs in 2009). Not only did exiting firms contribute to the loss of manufacturing jobs, but job shedding by surviving incumbent firms also contributed heavily. About 6,775 manufacturing jobs were lost in establishments which remained in operation between 2009 and 2012 - a decline in employment of more than 15 percent (Figure 3.7)

**Figure 3.7: Contribution to value added growth by sector, 2009-2012**



Source: Staff estimates from KER data.

**Figure 3.8: Employment growth by sector 2009-2012**



Source: Staff estimates from KER data.

### *The relationship between firm size and employment growth*

**3.16 Firm size has played a large role in Kyrgyz's job creation, with small firms unable to grow (and thus expand employment) and large firms growing strongly with low levels of employment creation.** Analysis of job creation by the life-cycle of the firm and by firm size provides several important insights into firm growth and job creation. Annex 1 presents the results of regression analysis of net job creation in Kyrgyz Republic over the 2009-2012 period, with a view to better understanding the relationship between job growth and firm size, as well as to determine other factors that influence the overall job creation.

**3.17 The formal sector exhibits a considerable amount of churning, without any job growth.** Table 3.4 indicates the rates of entry at each firm size. Aggregate entry is very high, at about 20 percent over the 4 years (that is, about 20 percent of the firms in the sample entered after 2009). Entrants created employment across all firm sizes (the majority of employment being created by large entrants), but once they've entered, firms in aggregate have difficulties surviving and expanding (particularly small and medium firms). The greatest churning comes from small and medium firms, with significant barriers to small firms growing to medium sized, and significant barriers to medium sized firms staying medium sized (with the highest probability of shrinking across age group).

**Table 3.4: Firm Size and Employment Distributions, 2009-2012**

Size category of (number of workers)	Average number of firms	% of firms	Average number of jobs	% of employment	Entry rate	Survival rate
1	2,954	23.1	2,954	1.4	16%	80%
2	2,039	15.9	4,079	1.9	16%	93%
3,4	2,346	18.3	7,978	3.7	12%	94%
5, - 9	2,257	17.6	14,765	6.9	10%	95%
10, - 15	994	7.8	11,986	5.6	9%	97%
16, - 30	925	7.2	20,017	9.3	7%	97%
31, - 60	651	5.1	28,181	13.1	6%	97%
61, - 100	288	2.3	22,044	10.2	5%	98%
101, - 200	195	1.5	26,777	12.4	6%	98%
201, - 1000	135	1.1	55,173	25.6	3%	99%
> 1000	12	0.1	21,538	10.0	5%	100%
Total	12,796	100.0	215,490	100.0	9%	68% <sup>s</sup>

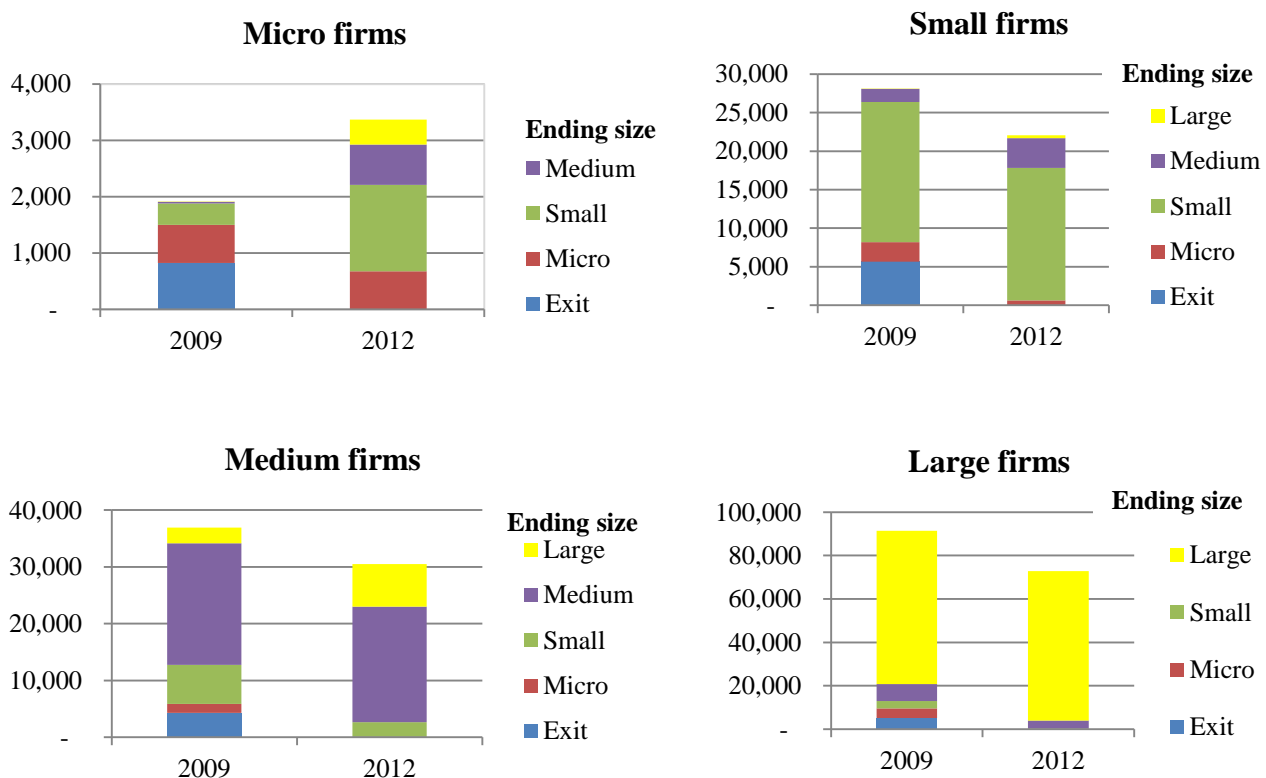
*Source:* Staff estimates from KER data.

**3.18 The probability of job growth and survival for large firms is much higher than for small and medium sized establishments.** Figure 3.9 displays the evolution of growth in employment by initial firm size. Column sections show the number of jobs provided (in 2009 and 2012) by firms that grew or shrank to a particular size category in 2012. The column section designated "exit" in 2009, for example, reflects the total employment in 2009 in firms which eventually exited by 2012. Several interesting features emerge from this breakdown.

**3.19 Small firms have high rates of exit, while medium size firms have a high probability for shrinking.** Jobs in small firms have the highest rates of loss through exit, suggesting difficulty of survival for small entrants. Of the more than 25,000 small firm jobs that existed in 2009, for example, more than 5,000 were jobs that would be lost by 2012 because of firm exit. Medium sized firms, meanwhile, exhibit the highest rates of reversal to smaller size, in addition to fairly high rates of exit (about 4,300 of the 37,000 jobs in medium firms in 2009 would be lost due to firm exit). The reversal to smaller size is reflected in the fact that of the 37,000 jobs in medium sized firms in 2009, about 6,000 would be lost to firms shrinking in employment size (shedding labor)<sup>16</sup>.

**3.20 Small firms don't grow.** Figure 3.10 shows the dynamics of firm growth by initial firm size, with the black bars reflecting firms that remained in the same size category (in terms of employment). The dynamic picture of firm growth indicates that the probability of shrinking in size has been significantly higher for smaller firms than for larger ones, with very few firms graduating to the higher employment size section of the chart.

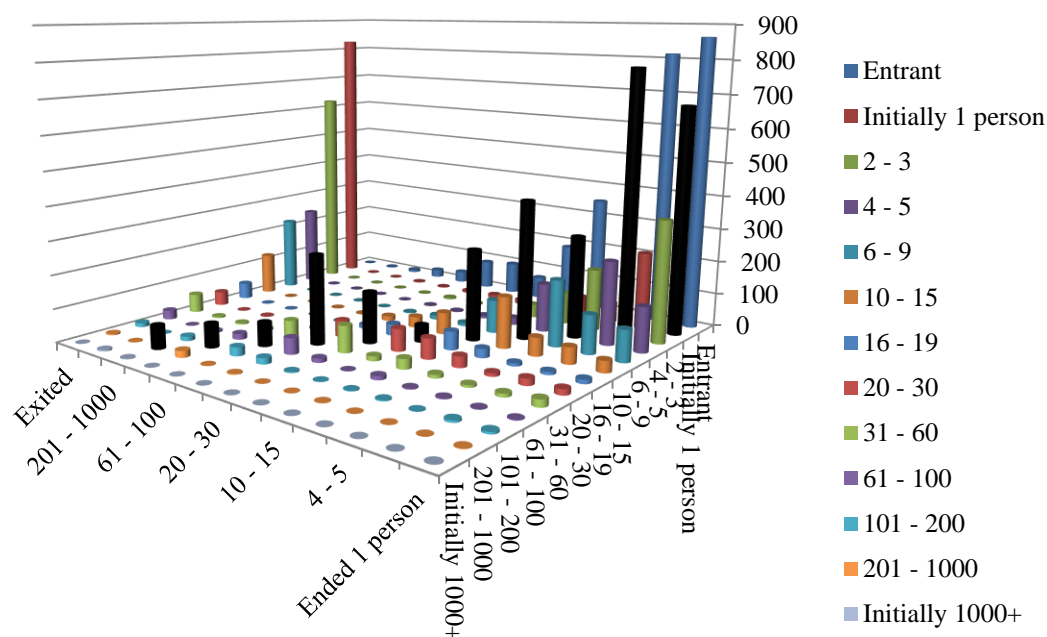
**Figure 3.9: Evolution of Employment Growth of Firms, by initial firm size**



Source: Staff estimates from KER data.

<sup>16</sup> While micro firms appear to display exceptional growth to large size, this likely reflects “zombie” large firms, which, when they go into non-operational status, revert to 1 employee.

**Figure 3.10: Dynamics of firm entry, growth and survival, 2009-2012**  
**Transition of Firms from original Employment Size**



Source: Staff estimates from KER data.

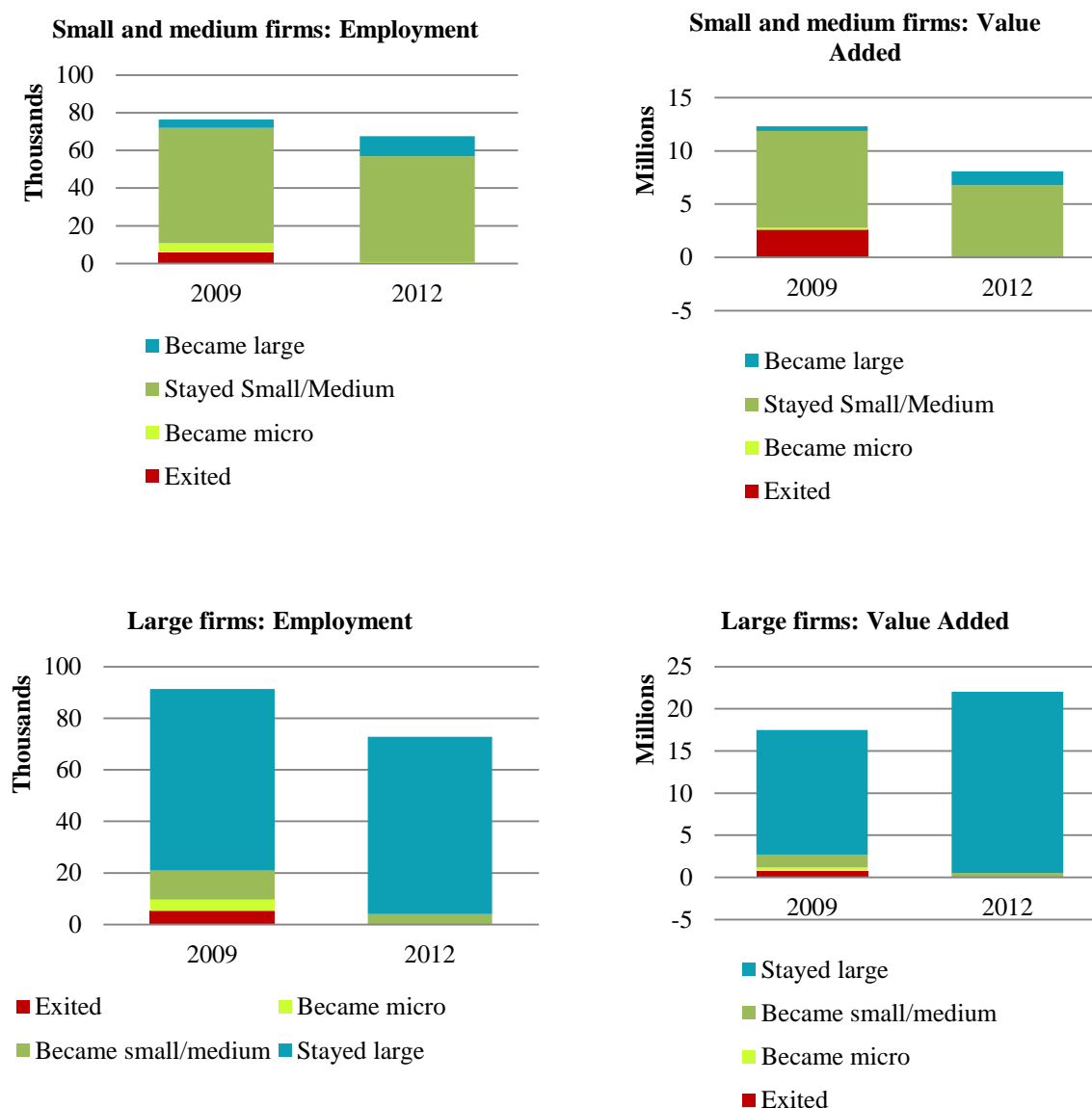
3.21 **The results on net job creation have had implications on the size of formal sector establishments in the Kyrgyz Republic.** With strong rates of entry coming from relatively smaller establishments (relative to the existing composition of jobs), and significant job shedding by larger established firms, the size of the formal sector is **shrinking**. Between 2009 and 2012, the number of firms increased by almost 4.5 percent a year over the period, with no employment creation beyond (small) entrants. The result has been a decline in the average employment of formal sector companies, from about 18 employees per establishment to about 16.

### C. UNDERSTANDING JOB CREATION DYNAMICS IN THE KYRGYZ REPUBLIC

3.22 **An aggregate accounting of jobs by large versus small established firms suggests small and medium firms have neither created jobs *nor* grown, while large established firms grew but did not create employment.** Figure 3.1 decomposes the dynamics of small and medium sized firm and large firm growth in terms of value added and employment. Over the 2009-2012 period, small and medium sized firms lost much more in output than they did in employment, (for small firms primarily because the workforce was already small, and reduction in employment would be akin to exiting). Large firms on the other hand have demonstrated strong output growth in the midst of job shedding.

Figure 3.11: Evolution of employment and value added growth of SMEs and large establishments 2009-2012

**Figure 3.11: Evolution of employment and value added growth of SMEs and large establishments 2009-2012**



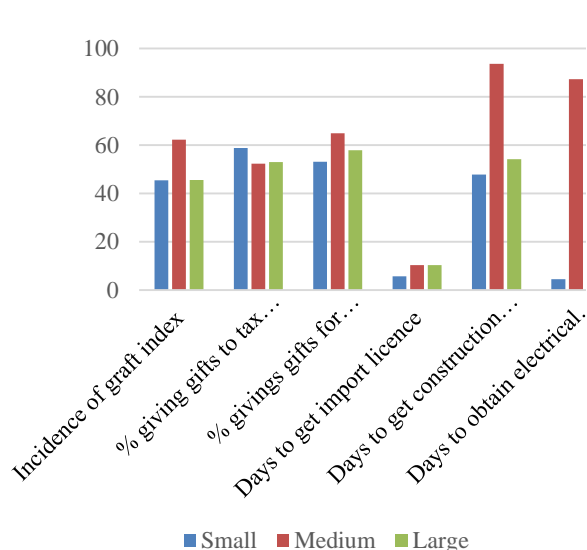
Source: Staff estimates from KER data.

**3.23 Significantly higher regulatory requirements and payments make growth beyond smallness cost-ineffective.** Many sources point to a regulatory environment which particularly discourages the growth of small and medium firms. Based on a range of business and regulatory costs (financial and other), Investment Climate Assessments suggest that medium sized firms face the largest regulatory burden among firm size types. As a result, the incentives to remain small (and revert to smallness) are large (see Figure 3.12). Among the challenges for firm-size expansion are the complex and burdensome regulatory environment, especially in tax administration, corruption, and political stability. The Kyrgyz Republic has a special tax regime, including the patent system, which incentives small-sized firms to stay small instead of scaling up and expanding beyond the tax incentive threshold. Another way around these regulatory burdens is through underreporting employment (to social security) and sales (to tax authorities), and it is common

across countries that smaller firms underreport more than larger firms. Thus, small firms may be growing, but underreporting their growth

**3.24 Alternatively, small firms may be circumventing some of these regulations and procedures by hiring contract workers, who would not encounter the same labor and other requirements as employees.** The KER data indicates use of contract labor peaks for smaller to small-medium firms, and reduces to no use of contract workers for firms with more than 50 employees (Figure 3.13). Because employment size is determined based on all categories of labor (including contract workers), firms in the category of 11-15 workers, for example, can include firms with 10 employees, with supplementary employment from contractors. This would be consistent with the low job creation rates among growing small establishments.

**Figure 3.12: De facto regulations and from firms, by firm size 2013**



Source: IFC, 2013. Enterprise Survey for the Kyrgyz Republic.

**Figure 3.13: Ratio of contract workers to overall employment, 2012**



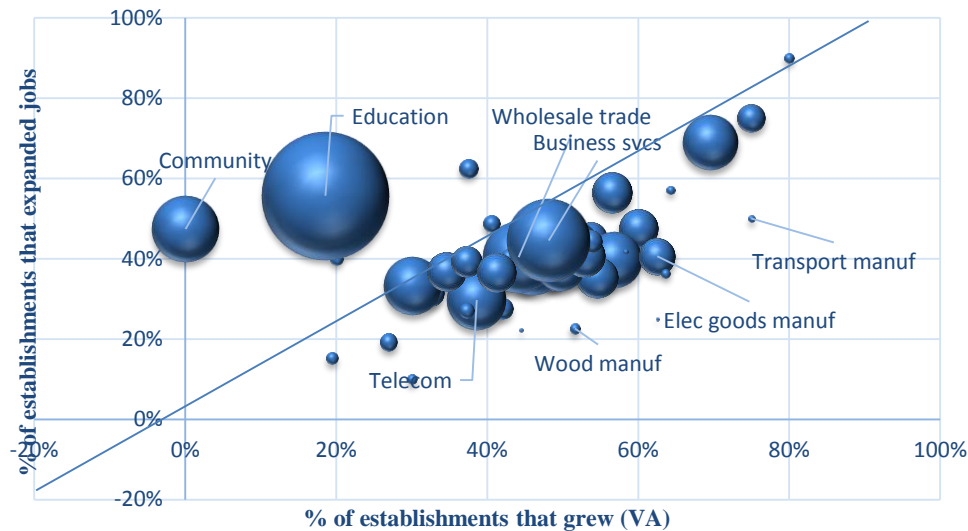
Source: Staff estimates from KER data.

**3.25 While large firms have a low elasticity of employment to growth, growing firms have expanded employment.** While employment elasticities are low, there is a fairly close association between economic growth and hiring. Firms that have grown (in real output) have in general expanded employment (Figure 3.14). On average, expanding establishments (in terms of value added) have seen employment grow by about 13 percent a year (5 percent a year excluding entrants). This compares with job losses averaging 14 percent a year among establishments which experienced negative value added growth (and job growth of about 2 percent a year among non-profit establishments).

**3.26 ...but growth is concentrated in a few firms which don't create jobs.** A very small number of firms are responsible for a large portion of overall output, and these establishments on average have very low employment creation rates. Little more than forty firms account for half of the output growth generated by growing establishments over the 2009-2012 period, and while they did expand employment (by around 17 percent in aggregate), job growth paled in comparison to output growth, which expanded 10 fold.



**Figure 3.14: Growth and Labor Expansion by Sector, 2009-2012**



Source: KER.

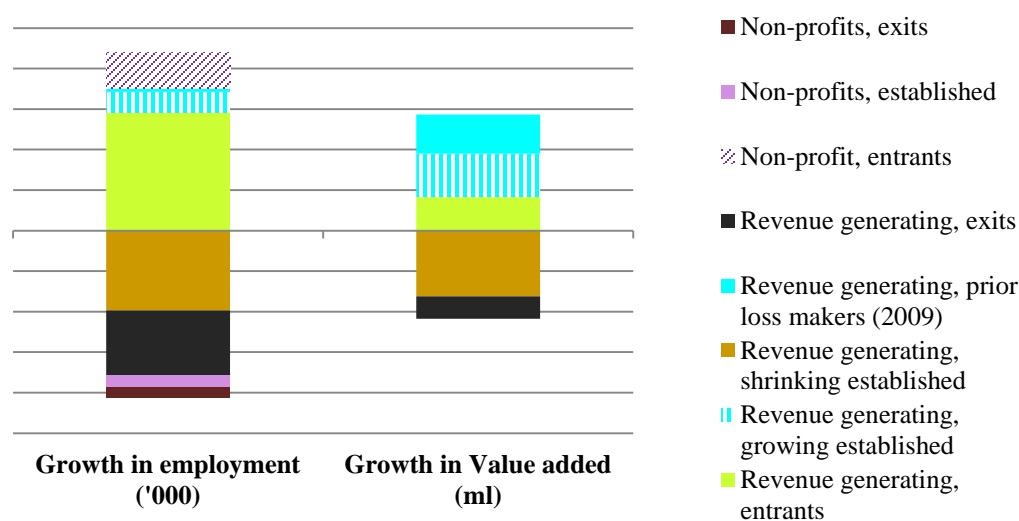
**3.27 Part of the low employment elasticity of large firms reflects a rebound in growth in loss-making establishments.** Many of Kyrgyz's large establishments were in significant loss-making positions in 2009, and their financial turnaround contributed much to the overall growth that as exhibited by large establishments, in aggregate (Figure 3.15). However, there was little job creation associated with this turnaround. This is potentially because there was limited labor shedding with the economic downturn (and thus limited adjustment with the upswing). Large firms have greater capacity to weather economic storms, and the necessity for adjusting workers on the margin may be significantly lower.

**3.28 ...but in general, large firms grow with limited labor adjustment.** As a group, large value-producing firms (i.e., excluding non-profits) experienced value added growth averaging 9 percent a year, while shedding labor at a rate of about 6 percent a year.

**3.29 Several features suggest the bulk of these large growing firms face limited competitive pressure.** A closer examination of the large established firms that have contributed the most to value added<sup>17</sup> (compared with other large establishments and other non-large value-producing establishments) provides evidence of limited competitive pressures, significant market power, strong economies of scale which allow for growth without job creation, and access to resources that are not shared by even other large firms (Figure 3.16).

<sup>17</sup> Limited to large established firms (more than 60 workers in 2009) which are among the top 5% of firms in growth of value added over the period. The total firms in this sample is 142, out of 445 large establishments.

**Figure 3.15: Decomposition of employment and value added growth in formal establishments, 2009-2012**



Source: Staff estimates from KER data.

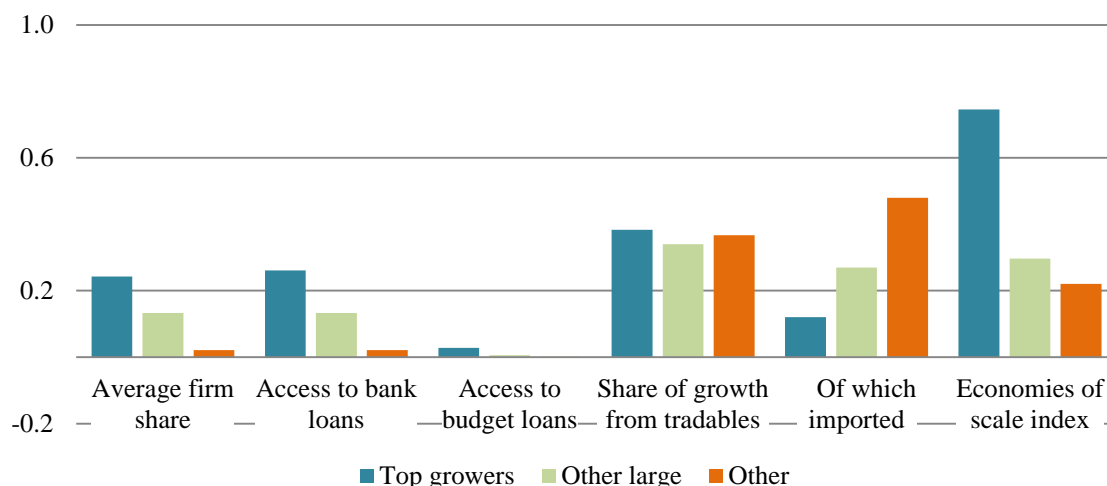
**3.30 The large establishments which have overwhelmingly contributed to growth (but not employment) over the period have significantly higher average market share, even compared with other large establishments.** They have about twice the access to bank lending as other large establishments (and more than 10 times the access to bank lending as non-large companies). While the access to budget loans (government lending) among establishments is low in general, about 3 percent of the largest growing firms have access to budgetary credit – 5 times the rate of other large firms and 30 times the rate of non-large firms. The composition of growth, in terms of tradeables to non-tradeables, is not significantly different between the largest growing establishments and other establishments (with about 35 percent of value added growth coming from tradeables), but a matching of the product groups to UN Comtrade data on imports suggests that a very low proportion of the tradeables production is imported in the largest growing establishments<sup>18</sup>, suggesting a level of implicit or explicit protection. In some sectors, the geography itself may create import protection, with significantly higher freight costs impeding greater imports. Of the top growing large mining and manufacturing establishments, more than 30 percent of value added growth came from heavy goods, such as concrete, bricks, and motor vehicle parts. In the same manner that the Kyrgyz geography creates disadvantages for exports, it likewise creates similar disadvantages for cost-effective imports, creating natural levels of protection for domestic producers.

**3.31 These companies also demonstrate stronger economies of scale.** A production process exhibits economies of scale when the marginal return from a unit of input exceeds the average returns. While we are only able to assess the average returns, we can compare the initial ratio of output/inputs to the growth of output/inputs over the period. Thus, we compute an economies of scale index calculated as the share of the growth of outputs to the growth of inputs over the share of the original output to the original inputs. The inputs used for the calculation represent the

<sup>18</sup> The correspondence between import data and the production data is hardly exact, but a rough correspondence using SITC revision 2 product classifications at the 4 digit level to NACE codes suggests under any circumstance significantly greater import value to production among non-large or large but not high growth establishments.

establishment's intermediate inputs into production as well as the depreciation of fixed assets. For ease of exhibiting in the same chart with other indicators, that index was divided by 10.

**Figure 3.16: Characteristics of Top Growing Large Firms versus Other Large, Other Firms**



*Sources:* Staff calculation from KER data, COMTRADE data. Economies of scale index calculated as average returns to additional inputs (intermediate + depreciation of fixed assets) over the average returns of original inputs. To graph with other indicators, that index value has been divided by 10. Access to bank/budget loans calculated as the share of establishments in sample with reported bank or budget loan. Top growers represent large establishments (with 60+ workers) in the top 5% of establishments with regard to value added growth. Average firm share = the share of overall value added in the sector (3 digit NACE) held by the establishment on average over the 2009-2012 period.

**3.32 Overall, the core jobs challenge in the formal sector is a growth challenge.** For small and medium sized firms, while rates of entry are high, there are constraints to survival and growth which prevent establishments from growing to create sustainable employment. There are also constraints to job creation, even accounting for growth, which may suggest additional incentives to remain small for regulatory reasons. Even among growing small and medium firms (except for the very small), net job creation was negative over the period. For large firms, the growth problem is not related to the size of growth but the pattern of growth. Very large firms account for most of the growth in value added among formal establishments, and increased market power has allowed them to increase earnings without an expansion in costs (including labor).

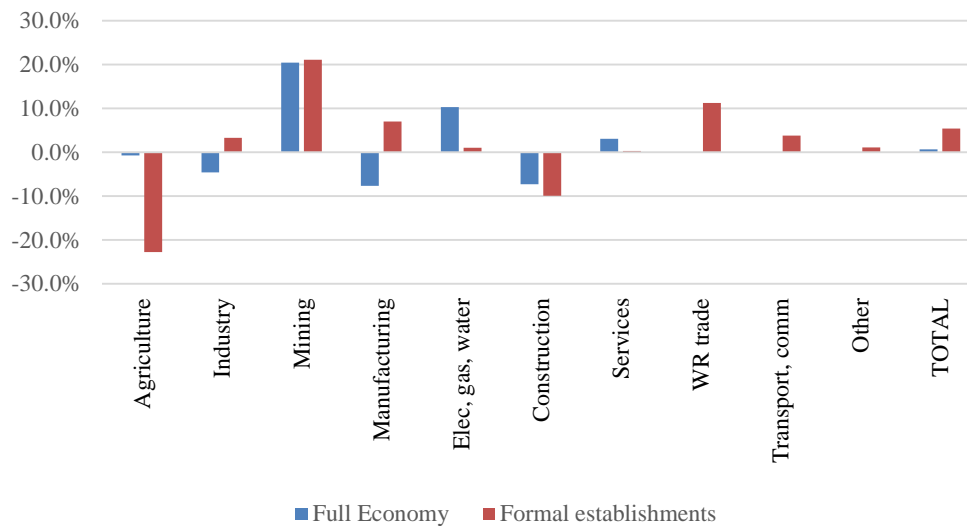
#### **D. IMPLICATIONS OF THE JOBS AND GROWTH DYNAMICS IN THE FORMAL SECTOR**

*Productivity growth has been captured by a few firms, with limited spillovers and employment growth*

**3.33 Strong productivity growth in the formal sector points to declining productivity in the informal sector.** At the aggregate level, with strong overall growth and job shedding, aggregate productivity growth in the formal sector has been strong, averaging 6.7 percent a year for value-creating firms. National accounts data suggests that economy wide, productivity growth averaged less than 1 percent a year, which would hint at significant productivity declines in the

informal sector (Figure 3.17). National accounts also points to productivity declines in both manufacturing and construction, but the KER data suggests that productivity growth has been strongly positive in the formal industrial sector, save utilities. Indeed, productivity growth in manufacturing and construction (which had the highest productivity declines at the national level) have been positive and even exceeded productivity growth in formal services. With the formal sector accounting for only 25 percent of manufacturing employment and 10 percent of construction employment, the productivity dynamics identified at the macroeconomic level may suggest that *rising informality* is significantly impacting overall productivity in the sector.

**Figure 3.17: Productivity growth by sector: Full economy versus formal establishments 2009-2012**



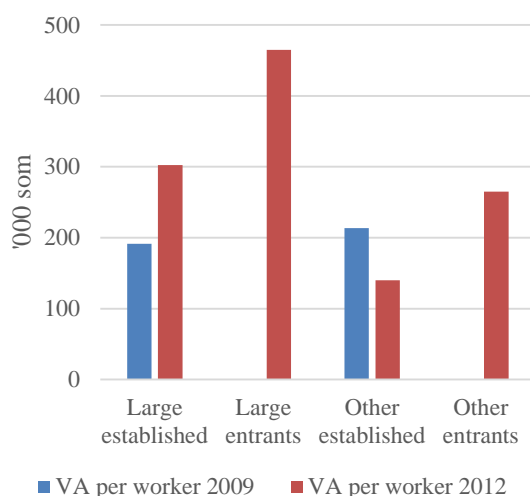
*Source:* Staff estimates from KER data (formal establishments); National accounts/Kyrgyz LFS (full economy productivity).

**3.34 Productivity growth in formal enterprises has been strong, but it is concentrated among large firms.** Overall productivity per worker rose in value producing firms by around 6.7 percent a year (from about \$3,200 per worker to \$3,931) (Figure 3.18 and Figure 3.19). Large established enterprises and large entrants together contributed more than 145 percent to the increase, but established firms which were not large dragged productivity growth down. Outside of large entrants, other entrants contributed only a small portion to productivity growth, though they accounted for almost all of the entrants. The productivity decomposition is further evidence of the very strong role that large firms play in overall growth and productivity outcomes in the Kyrgyz formal sector. Moving beyond large firms, however, productivity growth has been negative, with output per worker declining from around 213 thousand som to 164 thousand som (or a decline of about 9 percent a year).

**3.35 The lack of productivity growth outside large firms limits technological spillovers.** There is substantial evidence that sustained growth happens in when less-productive firms adopt technology and business practices of frontier firms. As a result, as countries develop, productivity per worker differences between firms in an industry decline. The concentration of productivity in the Kyrgyz Republic suggests a lack of technological spillovers from large established firms to entrants/small firms, which has implications for long run growth. Sustained growth involves new

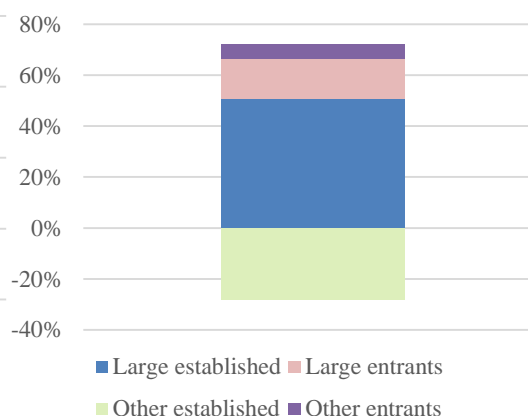
and smaller firms capturing the spillover of technological and management knowledge from frontier firms. Without that spillover, growth becomes an enclave activity, benefitting few.

**Figure 3.18: Productivity Growth of Entrants and Established Firms; Large Firms vs. Others**



Source: Staff estimates from KER data.

**Figure 3.19: Contribution to Productivity Growth by Size and Age of Firm, 2009-2012**

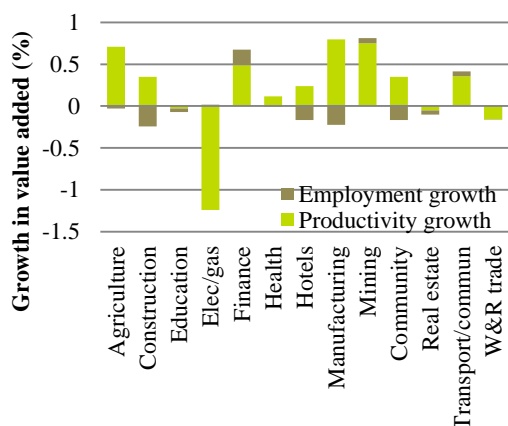


Source: Staff estimates from KER data

**3.36 Labor reallocation to more productive activities has taken place, primarily the result of labor shedding from less productive firms (rather than growth of new productive establishments)** One of the key indicators of better jobs is productivity growth, which can come from productivity growth within firms/industries/locations, or movement of labor to more productive firms/industries/locations. Over the 2009 to 2012 period, employment has shifted from less productive firms to more productive firms. The shift is less a reflection of employment creation in productive establishments than by labor shedding in less productive establishments. Ranking establishments by their average productivity (real value added per worker), it is possible to see how overall employment has grown among establishments by their productivity levels in 2009 versus 2012. From that, there has been marginal growth in employment among the top two quintiles, and a shrinking of employment at the lower end of the productivity spectrum (Figure 3.21).

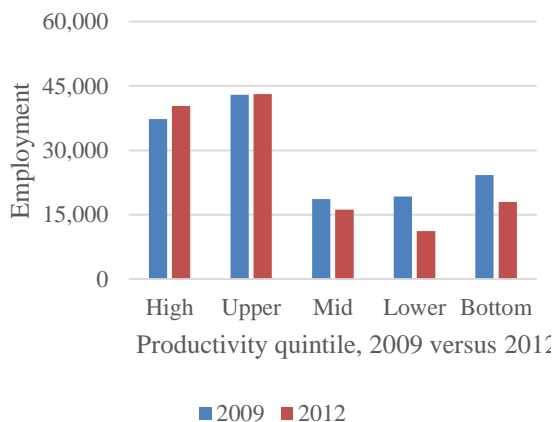
**3.37 The concentration of both growth and productivity growth has meant that employment has not been pulled.** Strong output growth has resulted in productivity growth primarily carried by large firms, which has resulted in limited relationship between productivity gains and employment creation. Economy wide, output growth of 6.6 percent a year was accompanied by job growth -0.1 percent a year, resulting in productivity growth of 6.7 percent a year. The same phenomenon of growth without jobs is true across sectors, and only a few sectors have actually created employment (while almost all sectors have demonstrated strong productivity growth) (Figure 3.20).

**Figure 3.20: Decomposing growth in value added: productivity versus employment**



Source: Staff estimates from KER data.

**Figure 3.21: Employment by Productivity Quintile, 2009-2012**

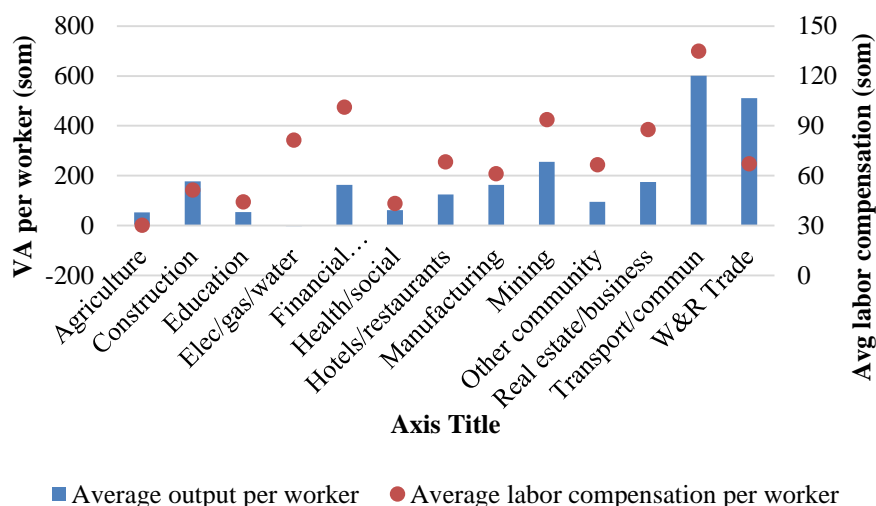


Source: Staff estimates from KER data.

### ***Wage growth does not relate strongly to productivity growth***

3.38 **...nor have wages been pulled.** In 58 percent of establishments which demonstrated productivity growth there was accompanying wage growth – the corollary of which is that in 42 percent of productivity growing establishments, average wages did not increase despite productivity. The employment weighted results are broadly similar. At the sectoral level, while there appears to be some relationship between wages and productivity, the relationship is far from consistent (Figure 3.22).

**Figure 3.22: Large Differences in Productivity Reflected in Wage Differences**

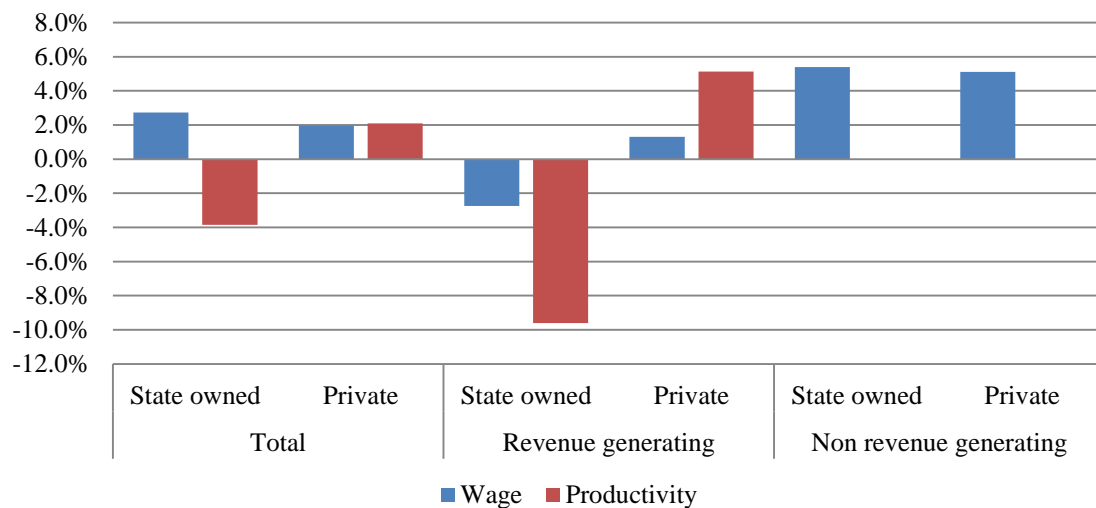


Source: Staff estimates from KER data.

3.39 **Wages and productivity growth are particularly out of alignment for public enterprises.** Although the KER data does not include public administration employment, it does include state-owned enterprises (and further allows for distinguishing between revenue-generating

establishments and non-revenue-generating organizations). From that, there is evidence of significant differences in wage growth between the public and private sector. Over the 2009-2012 period, the average level of labor compensation increased by less than a percent a year in revenue-generating establishments, compared with more than 5 percent a year in non-revenue generating establishments. A similar picture emerges when looking at compensation by the ownership structure of firms, where state-owned enterprises saw compensation levels increase by about 3.3 percent over the 2009-2012 period, compared with less than 2 percent in private establishments. Overall, the KER data suggests that the average compensation in state-owned, non-profit establishments increased by 6 percent a year compared with about 1 percent a year growth in private, revenue generating establishments (see Figure 3.23)<sup>19</sup>.

**Figure 3.23: Real Average Annual Wage Growth versus Productivity Growth 2009-2012, by ownership and revenue-generation status**



Source: Staff estimates from KER data.

#### ***Low rates of growth or firm entry in some sectors have weakened job creation***

**3.40 Export-oriented manufacturing is particularly impeded from stronger growth.** Export oriented manufacturing, which has a strong job-creation capacity has significantly lower rates of entry than other sectors. While some of the growth and hiring differences among firms is the result of factors highlighted earlier – the age of the establishment, its size, its ownership, its level of investment, and the like, a part is also directly related to the activities undertaken. Some sectors display much higher rates of labor adjustment (hiring) in the presence of growth, beyond what can be attributed to size/age differences. And some activities simply have higher growth potential. Understanding these differences provides a better understanding of the landscape for job creation in the formal sector. To disentangle the effects, Table 3.5 presents the differences in sectoral hiring rates (relative to the sample mean), broken down between the portion attributable to higher

<sup>19</sup> Based on establishment reports samples (which do not include public administration, nor do they include a large portion of public employment in education and health). Wage information from household data does not permit identification of ownership structure of the place of employment, nor whether the establishment is revenue-generating.

probability of growth versus and the portion attributable to stronger hiring rates, given growth (employing simple OLS regression analysis).<sup>20</sup>

**Table 3.5: Sectoral Differences in Hiring rates 2009-2012: Estimate of Portion Attributable to Differences in Growth versus Portion Attributable to Differences in Employment Elasticities**

	Probability of hiring	Difference in probability of hiring, relative to mean	Difference in prob. of growth, relative to mean	Portion of hiring difference attributable to higher probability of growing	Portion attributable to higher probability of hiring, given growing
Agriculture	68%	27%	26%	14%	14%
Mining	49%	8%	6%	3%	5%
Manufacturing	37%	-3%	-1%	-1%	-3%
Electricity/gas/water	39%	-2%	6%	3%	-5%
Construction	41%	0%	-2%	-1%	1%
Wholesale/retail trade	41%	0%	-2%	-1%	1%
Hotels/restaurants	38%	-3%	-2%	-1%	-1%
Transport/storage/communication	40%	-1%	0%	0%	-1%
Finance	25%	-15%	-17%	-9%	-6%
Real estate/business	39%	-2%	0%	0%	-2%
Education	56%	15%	10%	5%	10%
Health/social	36%	-4%	-1%	0%	-4%
Community	36%	-4%	-6%	-3%	-1%

Source: Staff estimates from KER data. Estimated relationship  $\Pr(\text{hiring}) = .53 \cdot \Pr(\text{growing}) + \text{sector dummies}$ ; Adj R<sup>2</sup>=0.58.

**3.41 Agriculture stands out in terms of hiring, driven equally between higher probability of growth and greater hiring inclination, given growth.** A large number of new farming activities began operation over the period, which, combined with strong expansion of several existing establishments, resulted in a large number of establishments exhibiting growth over the period. But about half of the stronger hiring rates is attributable to higher probability of hiring, given growth. On average, agriculture establishments are 15 percent more likely to hire than establishments in other sectors, given growth.

**3.42 The hiring probability attached to growth is a slightly different issue from the employment creation capacity of growth.** The stronger hiring rates in agriculture, relative to other growing sectors, relates to its inclination to adjust labor on the margin – regardless of what the level of growth is. The agriculture sector exhibits a much stronger relationship between the presence of growth and the inclination to expand employment. It may relate to a greater flexibility in hiring and firing workers (and thus easier adjustment), or it may relate to the lower direct labor

<sup>20</sup> Although the dependent variable is binary and OLS will not produce the best linear unbiased estimator, regression analysis was used for easier interpretation of marginal effects (see Beck, 2011 for discussion of the conditions under which OLS regressions of binary dependent variable with fixed effects can be employed).

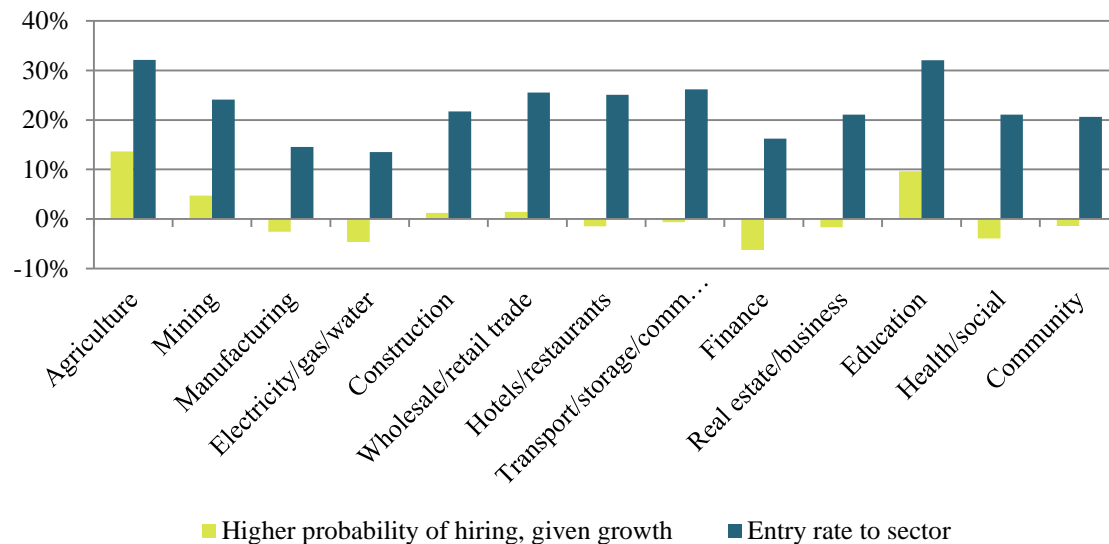


adjustment costs associated with the sector. The average compensation in these jobs is significantly lower: even in the formal sector, the average compensation in agriculture is only about a third of the average level of compensation in the formal sector, overall.

**3.43 Despite being capital intensive, mining also exhibits higher than average propensity to hire, given positive growth.** About half of all mining establishments expanded employment over the period, relative to about 41 percent economy wide. With a large number of entrants to the sector (29 percent), growth accounted for much of the increased hiring rates in the sector, but not all. On average, mining establishments were 5 percent more likely to expand employment than other sectors, given the presence of growth. Mining is not traditionally seen as a labor-intensive sector, so it may be all the more surprising that the sector has demonstrated a more robust growth/hiring relationship than other sectors.

**3.44 Underlying these differences in hiring are large differences in growth related to firm entry.** While sectors may have similar probabilities for growth (similar proportions of growing firms), entrants by definition must create employment to grow. Thus, it is not surprising that the highest rates of hiring (given growth) occur in the sectors where entrants make up a large portion of the “growers”. Sectors like manufacturing, utilities and finance all exhibited very low rates of entry, while education and agriculture have had very high rates of entry into the sector (Figure 3.24). Indeed, sectoral growth is largely related to the degree to which establishments can enter the market. Taking into account this difference, Annex table A.5 outlines the sectoral differences in hiring over the period by entrants versus established firms.

**Figure 3.24: Sectoral differences in entry rates and hiring probabilities, given growth**



Source: Staff estimates from Kyrgyz KER data.

**3.45 Manufacturing jobs reflect the most net jobs “lost” to low levels of firm entry.** What would net job creation look like with higher rates of firm entry? At the economy wide level, the rate of entry of establishments is about 22 percent. To get a rough estimate of the jobs and value impacts of increasing that rate to 30 percent (holding survival rates constant), we modeled at the sector level the increase in firms that would imply for each sector, and used the average number of jobs created by entrants in the sector (over the 2009-2012 period) and the average VA per worker for entrants to obtain sector-specific jobs impacts (Table 3.6). For sectors like agriculture, which are already more open than that level (rate of entry 32 percent), we imposed no changes. For sectors

with very low rates of entry, like manufacturing, utilities and finance, this would imply very large changes in the rates of entry (the number of new firms, however, would also depend on the current number of establishments). But entering firms have different capacities to create jobs and value, depending upon the economic activity. Entrants in manufacturing, for example, on average create 29 jobs, where in utilities, the number is only 9 jobs (and in finance only 7). If new entrants on average created the same number of jobs and average value added as in the past 4 years, it is clear that the bulk of job creation and value creation from increased entry would come from manufacturing, not only because it is a large sector, but because its current rates of entry are well below average (13.5 percent versus 22 percent economy-wide).

**Table 3.6: Estimated Job Growth with Increase in Rate of Firm Entry to 30%, at the Sectoral Level**

Model: increase in rate of entry in sector to 30%						
	Current number of establishments	Number of new firms	Number of new jobs	VA increase	Share of job growth	Share of VA growth
Agriculture	328					
Mining	144	8	180	136,437	2%	2%
Manufacturing	1481	228	6,535	2,408,163	55%	44%
Electricity/gas/water	293	48	441	20,993	4%	0%
Construction	988	82	627	238,250	5%	4%
Wholesale/retail trade	2766	123	750	1,431,191	6%	26%
Hotels/restaurants	193	10	94	11,799	1%	0%
Transport/storage/communication	1035	40	260	64,361	2%	1%
Finance	63	9	62	32,565	1%	1%
Real estate/business	2625	234	1,763	835,223	15%	15%
Education	243				0%	0%
Health/social	237	21	131	21,204	1%	0%
Community	279	26	983	292,425	8%	5%

*Source:* Staff estimates from KER data. Job growth of entrants estimated based on prior average employment creation (jobs) by entrants over the 2009-2012 period. Number of new firms = (30% - current rate of entry) \* current number of establishments in sector. Number of new jobs estimated as number of new firms \* average jobs created per firm by entrants to the sector, 2009-2012 (entering any year during that period). VA increase estimated as estimated number of new jobs \* avg. VA per worker for entrants to the sector over the 2009-2012 period.

**3.46 The overall picture of the formal sector is one of lack of the kind of dynamism that creates jobs.** Although there has been growth, it has been severely concentrated among a few large conglomerates that face limited competition and exhibit and growth without jobs. Small and medium sized firms demonstrate low rates of survival, as well as lower growth and low levels of job creation. Firm entry, while relatively high at the aggregate level, is low in the sectors that create most jobs (including manufacturing).

**3.47 Within this broad picture of the formal sector, there are a few dynamic sectors, but they account for very small shares of overall employment (even among the value-creating firms), and are reliant upon the continuing inflow of remittances to fuel domestic demand.** Few are in export oriented industries. Among the top quintile of establishments with regard to job growth in which value added growth was positive<sup>21</sup>, only about 15 percent of the value added came from tradeables goods (whether traded or not). Most of the job-generating establishments (even ones that grow) are dominated by the services sector. While that growth has been dynamic in the presence of strong remittance flows, it is less resistant to a sudden stop or drop in remittance flows.

**3.48 Surveys of establishments suggest a variety of obstacles to the survival and growth of small and medium sized businesses.** Low rates of survival and low growth among smaller establishments are indicative of both a lack of technological spillovers from large establishments and impediments to doing business. Surveys of establishments suggest a variety of potential barriers to doing business, from burdensome regulations in product markets, in the form of procedures for starting a business, registering property, and dealing with construction permits, as well as difficulties in the credit market (such as availability and affordability of financial services), and difficulties with contract enforcement. While medium sized establishments complain they face the largest costs of business, global comparisons of the processes for doing business in Kyrgyz Republic suggest a business environment that is challenging for most firms. The Kyrgyz Republic ranks far from the frontier of good practice relative across a broad range of areas, and over the past four years, it has not made progress on improving their distance to the frontier (and indeed have lost distance on several areas).

**3.49 There is also evidence to suggest large firms face significantly less competitive pressures and have substantially greater access to operational buffers that aid in survival.** The largest growing firms, responsible for half of the growth exhibited in the formal sector, are significantly more protected from market competition either domestically or through imports. Moreover, they are greater access to both bank finance and budgetary finance, allowing them to better weather downturns and maintain operations.

**3.50 Hiring differences among firms also relate to differences at the sectoral level in firm entry, and the employment creation capacity of different activities.** While firm size plays a large roll in growth, sectoral growth is heavily determined by firm entry, with new firms by definition in periods of expansion. Some sectors, like manufacturing, demonstrate much greater capacity to create jobs, when they are expanding, but the levels of firm entry are relatively low.

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<sup>21</sup> There are a sizeable amount of establishments which demonstrated job growth in the face of value added declines, but we consider only establishments that are growing, which is likely the more sustainable source of job growth.

## CHAPTER 4. ASSESSING JOBS CHALLENGES AND LEARNING FROM COMPARATORS

4.1 **The most visible evidence of constraints to better jobs in the Kyrgyz Republic has been the migration of workers themselves.** And it has also been the most effective in relieving these constraints. The current model has worked well from the point of view of individuals. It has provided jobs where there have been jobs deficits, particularly for young male workers. It has provided substantially higher wages. It has brought greater incomes to economically disenfranchised sections of the country. It has created the possibility of self-employment domestically through the flow of worker remittances boosting consumer demand.

4.2 **One of the fundamental jobs dilemmas for the Kyrgyz Republic relates not to the jobs outcomes experienced in the past decade, but to the sustainability of its development model for the future.** Based on any reasonable projections of employment growth, migration will continue to play an important role in Kyrgyzstan's employment solutions for the next decade, at a minimum. But the reliance on the current model for employment carries with it risks, which if not effectively managed, can undermine the ability to create good jobs going forward. Many of these risks may have already materialized and may be constraints to better jobs outcomes today. One of the symptoms of the non-sustainability of the current development model could be seen for instance in the stagnation in poverty reduction observed since 2009. In this respect, recent analyses<sup>22</sup> on the drivers of economic mobility suggest a significant link between poverty persistence and different types of jobs in terms of quality of occupation as well as specific sectors of employment (see Box 4-1 below for further details).

- ***First, there is the challenge of Dutch Disease.*** These are the difficulties that relate not to the migration experience, but to the impacts of remittance flows into the country, in particular to the reduced competitiveness of the manufacturing sector.
- ***Second, there is the challenge of a disabling business environment.*** They relate to low and concentrated levels of growth and job creation in the business sector. They involve constraints to business entry, survival, growth and innovation, and beyond what is suggested in Enterprise Surveys and Doing Business are evidenced by the lack of foreign direct investment and business entry, survival, and expansion.
- ***Third, there is the challenge of geography.*** These are the challenges to growth and jobs opportunities, given location and terrain. These are challenges exacerbated by the Dutch Disease.
- ***Fourth there is the challenge of migration's effects on labor markets.*** It relates to the set of challenges created by workers physically moving abroad or inter-regionally, and involves the impacts of these movements both for workers themselves and for longer-term growth and job creation.
- ***Finally, there is the challenge of the 'migration trap'.*** Separate from concerns about the business and regulatory environment in which firms operate, there is the additional challenge of migration's success to date, which lowers the urgency for addressing all of the constraints to strong and sustained domestic job creation.

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<sup>22</sup> Guelfi and Sattar, 2015.

### Box 4-1: Poverty dynamics and the role of jobs in the Kyrgyz Republic

After a decade of uninterrupted achievements in poverty reduction, starting from 2009 poverty eradication started to stagnate in a context of still sustained but rather unstable growth in the total economy.

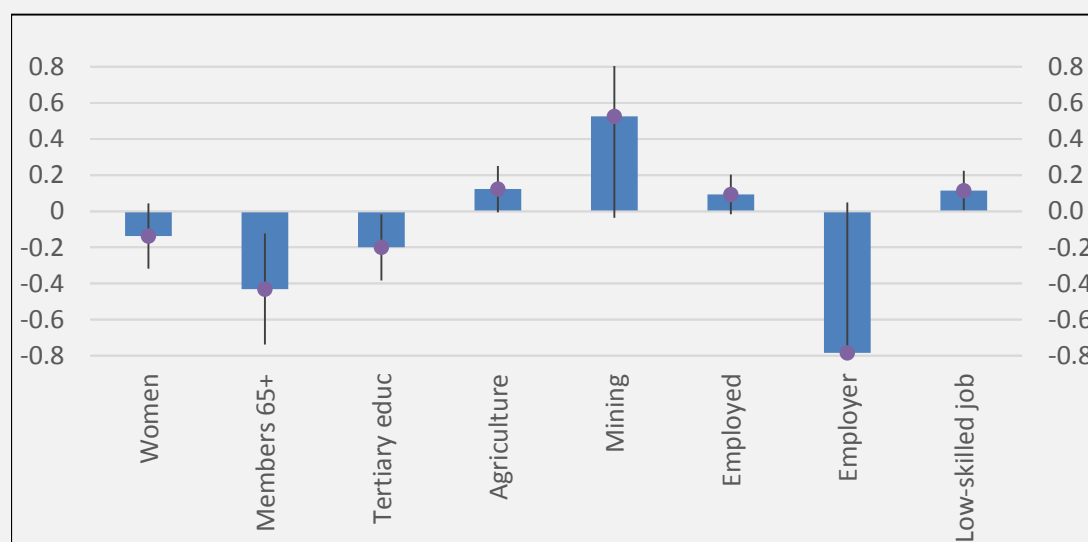
In the attempt to shed some light on what has happened and why, an analysis of economic mobility was carried out resorting to a “truly” panel data set: the ‘Life in Kyrgyzstan Survey’ made available from the DIW in Berlin.

Mobility analysis can indeed help to unveil what happened below the surface of poverty stagnation by highlighting who did transition in and out of poverty over time, as well as who persisted into the poverty status, also suggesting some of the key determinants of the movements observed.

Among other things this study was particularly interested in investigating the role eventually played by jobs and labor market outcomes in moving people (or preventing them from moving) out of poverty. In this respect, results have shown that (see Chart 1 below):

- Being employed (as opposed to be either unemployed or inactive) as well as increasing the employment rate of the members of a household does not seem to influence neither the probability to leave poverty nor that of being stuck into it over time. However:
- Systematic differences appear instead to emerge with respect to specific sectors of employment as well as the specific types – in terms of intrinsic quality - of occupation.
- The evidence suggests indeed that working in the mining and agricultural sectors enhances the probability of persisting in poverty.
- At the same time, being employed in a high quality type of occupation, which usually requires a relatively higher level of education, significantly increases the chance of leaving the poverty status over time.
- Education was indeed confirmed as one of the key drivers of economic mobility in the country.

Chart 1 - Correlates of economic mobility: household members’ individual characteristics and probability of being stuck in poverty in 2010-11



Source: Own computations on DIW, “Life in Kyrgyzstan Survey”.

Based on Guelfi and Sattar, 2015.

**4.3 The Kyrgyz Republic faces several ongoing challenges to improving jobs outcomes and creating dynamic sources of good jobs domestically.** Some of these challenges cannot be “fixed” quickly. Rather, they relate to country conditions and require consistent efforts on multiple fronts. Comparator countries – countries with similar country conditions – can provide lessons for overcoming these challenges to better employment:

## A. DUTCH DISEASE

4.4 **Just as a natural resource dependent economy can experience negative impacts from the windfall revenues from natural resource extraction, a migration-reliant country can experience many of the same symptoms of “Dutch Disease.”** The original phenomenon reflects the experience of the Netherlands after the discovery of natural gas exports, where large windfall gains increased domestic demand, raised the price of non-tradable goods leading to an appreciation of the Dutch currency, and ultimately led to a fall in exports and employment in trade-oriented sectors.

4.5 **The fundamentals are similar for emigration-prone economies.** The inflow of remittances leads to an increase in the supply of foreign exchange in the domestic currency market and causes the domestic currency to appreciate. This appreciation draws resources out of the traded goods sector through upward pressure on wages. Higher non-tradable prices lead to higher wages in that sector, causing an expansion of the non-tradable sector. The increase in production costs leads to a contraction in the tradable sector, making exports substantially less competitive. Oomes and Kalcheva<sup>23</sup> offered four main symptoms of Dutch Disease: (1) real appreciation; (2) a slowdown in manufacturing growth; (3) an acceleration in service sector growth; and, (4) an increase in the overall wage level.

4.6 **As demonstrated in Chapter 2, all four of these symptoms have been present in the Kyrgyz Republic to some degree.** It is possible that several of these symptoms, including the slowdown in manufacturing growth and the boom in service sector growth, are transition effects and not related to remittances,<sup>24</sup> and thus the strict categorization of the cause being Dutch Disease cannot be authenticated. However, the macroeconomic management of remittance flows remains important for long term sustainability of jobs and wage growth. The main risk of Dutch Disease, from the standpoint of jobs, is the greater difficulty of creating jobs in tradeables (manufacturing and agriculture, but also tradable services), because of declining competitiveness. On the other hand, and as already evidenced in the Kyrgyz Republic, the wealth effect of the remittance boom has helped the development of non-tradable service sector.

4.7 **Then the question becomes: why is Dutch Disease of concern if jobs can continue to be created in a booming services sector?** There are at least three reasons why this is a concern. First, there is the issue of the vulnerability of the service sector growth model, not only to migration policy abroad, but also to migrant jobs prospects and remittance behavior. Unlike commodity booms, which are under the control of affected resource-receiving countries, migration is both a private decision and governed in part by economic conditions and political arrangements abroad. The recent collapse of the ruble at the end of 2014 and start of mass exodus of migrants, including from the Kyrgyz Republic, is testimony to the risks involved with migration-led jobs. While remittances tend to be countercyclical to home country conditions (people sending more when conditions are poor), they are also very cyclical to host country conditions. Moreover the impact of return on labor markets is compounded: not only does a returned migrant require an additional job from the domestic labor market, the remittances that have been funding the service sector growth (and jobs) have been reduced.

4.8 **Second, there is the issue of the quality of the jobs that can be created in the services sector.** The Kyrgyz data confirms that manufacturing sector jobs are more productive and pay higher wages than the services sector. Even controlling for the level of education of the worker,

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<sup>23</sup> Oomes and Kalcheva. 2007.

<sup>24</sup> Ibid

the average labor income of workers is higher in manufacturing than in all other sectors but mining. On average, workers in manufacturing can expect to earn a premium ranging from only 2 percent over jobs in construction to almost 20 percent in real estate and business services: this despite the fact that manufacturing sector itself has become highly informal and the premium has reduced.

4.9 **Thirdly, manufacturing is the source of innovation.** Based on the experience of other countries, manufacturing firms are more likely to introduce new products or new business processes<sup>25</sup>. More importantly, the innovation that takes place in manufacturing leads to productivity improvements that spill over into agriculture and services. Thus, maintaining and growing a manufacturing base is important for sustaining more productive jobs in all sectors.

4.10 **What can be learned from other migration prone countries?** Migration prone countries face particular challenges with Dutch Disease. Traditional resource-based countries suffering from Dutch Disease have managed to contain the exchange rate appreciation of natural resource revenue windfalls by paying down foreign debt or establishing a wealth fund that can be invested abroad. By investing resource revenues in foreign assets, they are able to avoid huge increases in public spending and the inflow of foreign exchange. Migration prone countries however have the additional challenge of the windfall wealth being private.

4.11 **Migration prone countries have adopted various policies to offset the effects of remittance flows on the equilibrium real exchange rate, or compensate the economy's traded goods sector for the loss of competitiveness that it suffers from real exchange rate appreciation.** If remittances could be invested in the export sector, for example, the resulting increase in productivity and drop in costs for the sector could help to compensate for the effects of Dutch Disease. Maintaining a flexible exchange rate policy can also help to counterbalance negative impacts from shocks and maintain competitiveness.

4.12 **Improving the development impact of remittances can also be fostered through strengthened financial intermediation of remittances.** Improving the ability of the economy to mobilize savings and direct savings to high-return projects, to improve the access of formal remittance recipients to other financial products (thereby reducing risks), and to enable policy makers to monitor and react more effectively to changes in remittance flows are effective ways to facilitate job-creating investments and poverty reduction. These are the examples that can be explored as part of the Kyrgyz Republic's jobs policy agenda, particularly as migration is likely to be a phenomenon with which it must contend over the medium to long term.

## **B. BUSINESS ENVIRONMENT**

4.13 **The business environment is not a constraint but an outcome of a variety of constraints.** The prior highlighted some core constraints to job creation in the formal business sector related to overall low levels of employment creation given growth, and particularly for small and medium sized firms (but also for some large firms) challenges with entry, survival and growth. The evidence points to a lack of competitive pressures for a number of very large establishments, which grow but do not expand employment, balanced with small and medium firms that create jobs as they enter but do not expand further (or exit).

4.14 **Understanding the core constraints to growth in the formal sector requires a fuller assessment of the regulatory and structural impediments among establishments.** The Enterprise Surveys can be useful in pointing to some of the problems most often mentioned, and

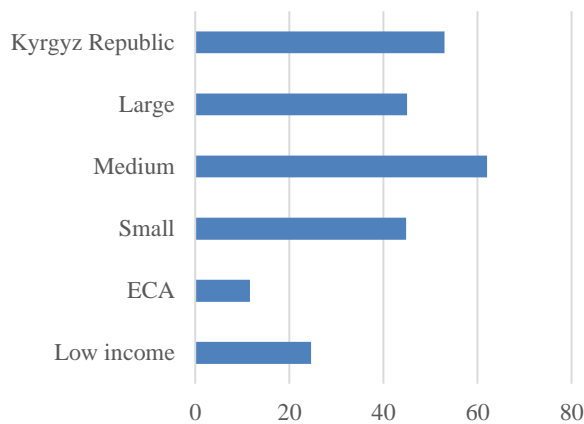
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<sup>25</sup> Helper, Krueger, and Wial. 2012.

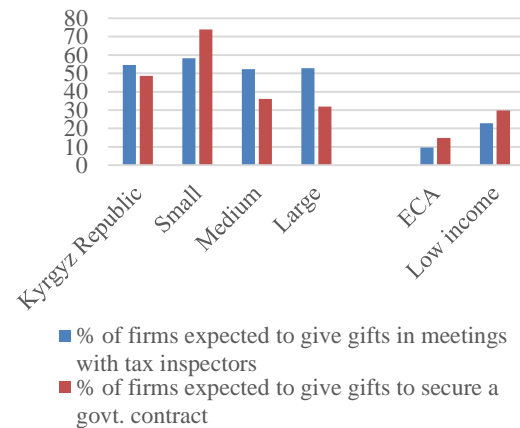
some of these top complaints have been highlighted in, particularly with a view to understanding difficulties with growing to medium sized or surviving. However, what the firm analysis can point to problems with growth, survival, technology spillovers and lack of competitive pressures among large established firms. It cannot tell us why.

**4.15 One area that is very high on the list of complaints of established firms, small or large (but particularly small and medium) is the widespread perception of corruption.** The Kyrgyz Republic ranks high on a number of corruption indicators, including graft, bribes in paying taxes, and bribes in getting licenses or permits (Figure 4.1, Figure 4.2, and Figure 4.3). The Kyrgyz Republic ranks significantly higher than other ECA developing countries, and even higher than the average of low income countries.

**Figure 4.1: Bribe Tax**



**Figure 4.2: Graft Index**



Source: International Finance Corporation, 2013.

**Figure 4.3: Bribes in Licenses and Permits**



Source: International Finance Corporation, 2013.

**4.16 The issue of corruption, from a jobs standpoint, is important for the potential implications on public sector hiring and wages.** An area of some discussion is the level of wages of public servants. The Public Expenditure Review for the Kyrgyz Republic suggests the wage bill as a share of GDP is in line with ECA norms, but there are many sources which suggest that public sector wages in the Kyrgyz Republic are problematically low, creating increased incentives for corruption. As noted by Bekbolotov (2007):



*“Unrealistically low wages in the public sector invite corruption. There are widespread perceptions that government officials, who had to more or less purchase their positions, then work to recoup their investments by taking bribes....The unofficial income generated as a result of abuse of their position remains the major incentive for people to work for the government<sup>26</sup>”*

**4.17 An additional issue particularly for the Kyrgyz Republic’s business environment concerns the informal sector.** The informal sector (accounting for 70 percent of employment) has the potential to impact the formal sector competitiveness (and indeed one of the biggest business complaints concerns competition from the informal sector), but it is a large employment sector in its own right, and improving productivity and incomes within the informal sector must be considered an important aspect of the jobs agenda.

**4.18 The jobs agenda for the informal sector depends in large part on how it links to the formal sector.** Because the formal sector employs a significantly smaller share of the domestic labor force (and a significantly smaller share of the poor), understanding the relationship between formal, informal and farm employment is important for prioritization of jobs strategies, including for shared prosperity. From Section 2, it is evident that formal sector jobs in the Kyrgyz Republic are more productive, better paying jobs, but they also employ a significantly smaller share the labor force including the poor and vulnerable. Creating policies for jobs for the poor, in particular, must involve job and productivity growth that can most effectively and sustainably benefit the bottom 40 percent of the population. Shared prosperity through jobs could be achieved through relatively strong growth in formal sector jobs that can benefit the poor (either within the formal sector or through strong links to the informal sector), or through a rise in productivity in the informal economy.

**4.19 Appropriate policies for poverty reduction in the Kyrgyz Republic through jobs will depend in large part on the evidence about the nature of the informal sector and how it relates to the overall economy.** Ultimately, raising incomes for the majority of workers (and particularly the poor) requires increasing productivity of workers. But raising productivity in the informal sector requires both an understanding of the nature of informality, but also how activities in the formal sector spillover to informal activities and jobs. Without informal sector surveys, a comprehensive understanding of productivity impediments cannot be undertaken. However, it is nonetheless useful to understand how the informal economy relates to the formal sector, as it provides a better sense of the strategy for reaching the poor.

**4.20 The policies for improving jobs will differ depending on the nature of the informal sector.** If the informal sector is predominantly composed of entrepreneurs escaping the high costs of formality, improving the conditions of employment implies lowering the costs and raising the benefits of formality (such as through reducing taxes including social security contributions, right-sizing labor regulation, improving the business regulatory environment, and increasing sanctions for non-compliance). In that way, dynamic entrepreneurs are able to better access finance and capital which are less available in the informal activities, and thereby grow and expand employment. If however, the informal sector is composed primarily of refuge unemployment – workers unable to obtain formal sector employment, either because of low demand, or because they are inherently different from workers in formal establishments (and in some sense have structural ‘employability’ challenges), then improving the conditions of informal workers might more appropriately focus on poverty reduction measures (and alternatively, on improving the conditions under which these lower productivity activities can flourish). Because the informal sector more

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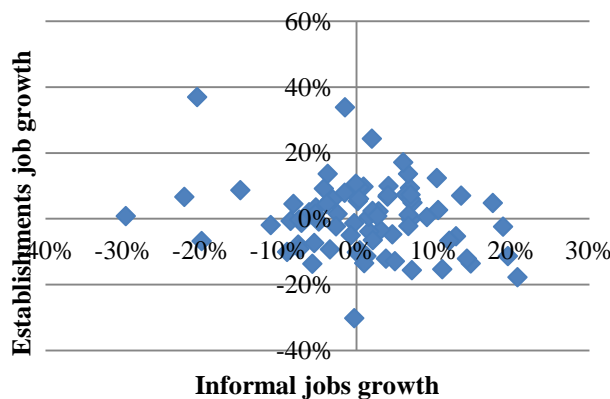
<sup>26</sup> Bekbolotov, 2007.

reasonably represents a mix of informal activities, with some held back from formalization by excessive regulatory costs, while others comprise subsistence employment, then the strategies for better jobs will need to focus on both separately.

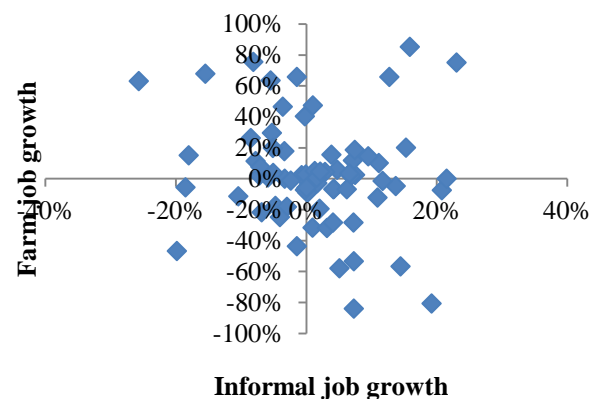
**4.21 Each theory of informality will imply a different relationships between formal sector job creation and wage growth and informal job creation and wage growth.** Under the dualistic model, formal sector conditions will tend to be countercyclical to informality. As conditions for employment improve in the modern sector, informality declines. Under the alternative model, however, informal sector growth (in wages, employment) tends to cycle with broader economic growth. However, caution needs to be applied in interpreting these relationships, and a variety of evidence is helpful to get a better picture of the informal sector.

**4.22 The evidence in the Kyrgyz Republic suggests the informal sector sops up agricultural job shedding.** Using the LFS figures on employment, regression analysis of job growth outside farms and establishments to growth of jobs in establishments and growth of jobs in farms (with regional effects) suggests that informality is related to job shedding from farms, but there is not a statistically significant relationship between establishments jobs and ‘informal’ jobs (Figure 4.4 Figure 4.5). This suggests that rather than being driven by entrepreneurs, it is primarily a haven for the otherwise unemployed farmers.

**Figure 4.4: Relationship of informal employment to establishment employment, 2003-2013**



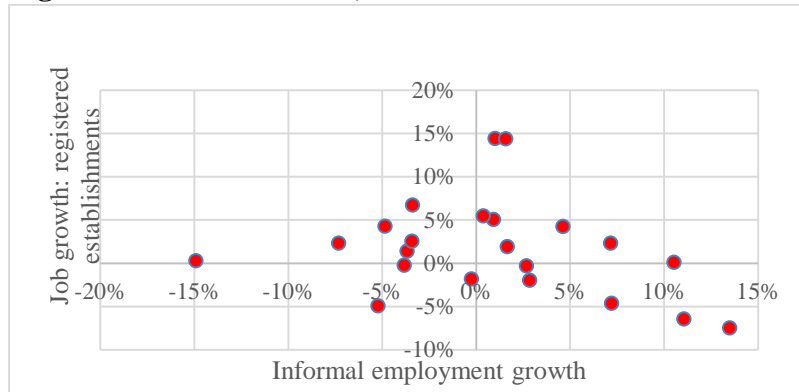
**Figure 4.5: Relationship of informal employment to farm employment, 2003-2012**



Source: Staff estimates of KER data.

**4.23 The relationship between formal job growth as reported by establishments and informal job creation is negative.** However, another source of evidence on the informal sector comes from the KER formal establishment data, from which we can compare dynamics with informal job growth. Over the 2009-2012 period, informal job creation was inversely related to job growth in formal establishments (Figure 4.6), again suggestive of a dualistic labor market, but with informality being the sponge that soaks up workers unable to access better formal sector work. When formal job creation expands, informality declines, and when the formal sector shrinks, informality increases, at least in aggregate. The evidence provides further support for aiding the formal sector to create jobs as a primary vehicle for improving the productivity of currently informal workers.

**Figure 4.6: Informal employment growth and growth of employment in registered establishments, 2009-2012**



Source: Staff estimates of KER data.

### C. THE CHALLENGES OF GEOGRAPHY

**4.24 One of the challenges to creating greater jobs in the Kyrgyz Republic relates to its challenging geography, which creates natural disadvantages to its ability to be competitive exporters.** The Kyrgyz Republic contends with natural disadvantages to merchandise trade. Not only is it geographically remote, its landlocked status also heightens its dependence upon trade passage through sovereign border countries, further increasing the risks and costs.

**4.25 The Kyrgyz Republic has taken advantage of its geography to date through cross-border trading.** Cross border trading has become one of the fastest growing services in the Kyrgyz Republic, and it optimizes the country's geographic location. Small enterprises/individuals import goods from China, taking advantage of the simplified tax regime for cross-border trade, and re-export those items using the CIS preferential tariff. Markets like Dordoi – which employs some 60,000 workers – and Karasuu stock up on cheap manufactured goods from China and Turkey to re-export to other CIS countries and beyond. Since 2000, re-exports have grown from comprising a negligible portion of gross exports to accounting for almost 15 percent by 2013. As a share of manufactured exports, meanwhile, they have grown to account for almost 40 percent.

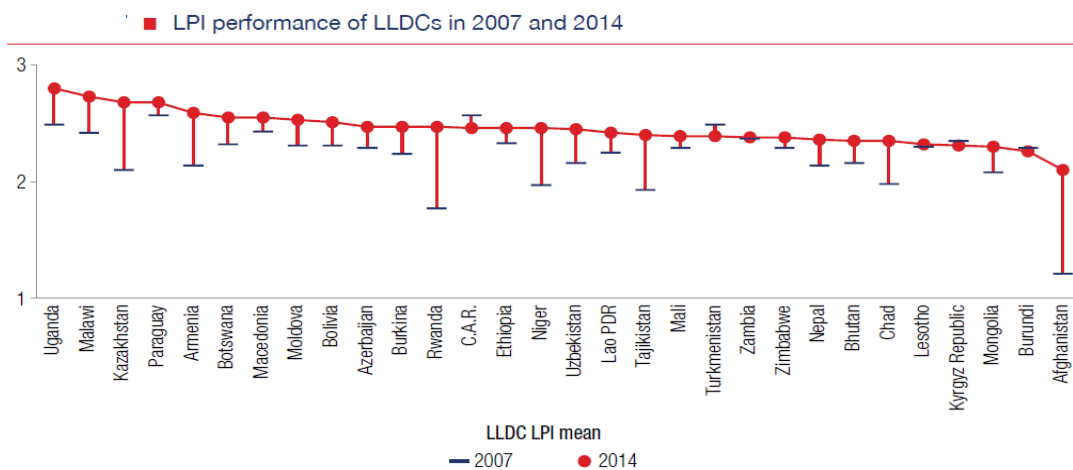
**4.26 Going forward, the Kyrgyz Republic will also need to improve the environment for merchandise trade.** Beyond being an engine of growth that can be sustained over time, trade is good for jobs. Importantly, it requires particular skills specialized to the trade process. The KER data provides a specific window into the job/trade relationship for the Kyrgyz Republic. While the tally of exporters is incomplete (see Chapter 4 data box), it is possible to identify exporters and assess differences in performance and employment outcomes with other producers<sup>27</sup> Even KER data shows that the job-creation capacity of exporting is higher than for domestic-bound production.

<sup>27</sup> It cannot be assumed that all of the “other” group are non-exporters, but reasonably the other group will include a significantly larger portion of non-exporters, given they have not reported any accounts receivable from outside the country.

4.27 **Like other landlocked countries, the Kyrgyz Republic exhibits limited export diversification in both export markets and products.** At aggregate level, Kyrgyz trades more than expected, a consequence of its superlative exports in gold. Outside of gold, however, merchandise exports have been lackluster, growing from only 23 percent of GDP in 2000 to 26 percent in 2012. Product space analysis of the export basket of the Kyrgyz Republic indicates that the diversity of exports is low, and there has been limited movement up the value chain. Products have remained largely resource-based, and remain low value.

4.28 **The Kyrgyz Republic ranks poorly on a number of key indicators for trade logistics and transport, even relative to other landlocked countries.** The Kyrgyz Republic remains one of the most logistics disadvantaged countries of even landlocked economies, and it has failed to make substantial progress in improving logistics in the last 7 years (Figure 4.7). One of the greatest disadvantages the Kyrgyz Republic faces with regard to trade is the distance from production centers to seaports. While other landlocked countries average between 1,500 and 2,000 km to the closest seaport, for Kyrgyzstan the distance is between 4,500 and 5,200 km.<sup>28</sup>

**Figure 4.7: Logistics performance of landlocked countries, 2007 and 2014**



Source: World Bank 2014c.

4.29 **There are significant job opportunities that come with incremental movements up the value chain.** Food production in the Kyrgyz Republic consists mostly of food sold in raw, unprocessed states (see Table 4.1). Food processing requires significant financial investment (processing equipment, machinery, storage, transport, etc.), as well as staff with specialized skills (making connections between suppliers and agro-industry). The current Kyrgyz trade strategy targets the development of four food processing sectors (in addition to tourism and clothing): fruits and vegetables, dairy products, meat products, and bottled water. The strategy also targets four cross-sectors – access to finance, trade information and promotion, quality management and trade facilitation – to improve export competitiveness beyond the selected priority sectors.

<sup>28</sup> From World Bank 2014c.

**Table 4.1: Main Merchandise Exports 2009-2012 by Revealed Comparative Advantage Dynamics**

Classics			Emerging Champions		Disappearances	
Gold, non-monetary		6%	Fresh or dried fruit n.e.s.	8%	Radioactive elements	chemical 11%
Electric current		6%	Knitted undergarments of synthetic fibers	1%	Dried or shelled legumes	4%
Other non-ferrous base metals		4%	Bovine and equine leather	1%	Grapes and raisins	2%
Blouses		4%	Incandescent and fluorescent bulbs	1%	Men's trousers	2%
Raw cotton		3%	Skirts	1%	Fresh milk and cream	2%
Other fresh or chilled vegetables		3%	Knitted clothing accessories of textile fabrics	1%	Fresh or chilled tomatoes	2%
Other women outerwear		3%	Ores and precious metals	1%	Fresh or chilled potatoes, excluding sweet potatoes	1%
Other knitted outerwear		3%	Knitted jerseys, pullovers and cardigans	1%	Iron and steel waste	1%
Dresses		2%	Fresh apples	1%	Materials of rubber	0%
Unstripped tobacco		2%	Women's coats and jackets	1%	Metal articles n.e.s.	0%
Raw sugar beet and cane		2%	Television and radio transmitters	0%	Other condensation products	0%

*Source:* Staff estimates from COMTRADE trade data. Classics defined as exports in which the Kyrgyz Republic exhibited revealed comparative advantage (RCA) (Belassa method) over the 1997-2009 period as well as the 2009-2012 period. Emerging champions are defined as products in which the Kyrgyz Republic did not exhibit RCA over the 1997-2009 period, but has exhibited RCA over the 2009-2012 period. Disappearances reflect products in which the Kyrgyz Republic demonstrated RCA over the 1997-2009 period, but currently does not.

**4.30 Other mountainous, landlocked countries provide some insights into overcoming geographic challenges, even ones at completely different stages in development.** These insights revolve around investments in transport and infrastructure to reduce the actual costs of trade and increase cross border connectivity, encouraging production close to trading partner borders, and specializing in exports that either capitalize on geography (such as mineral exports) or are physically neutral (not being disadvantaged by their geography). Switzerland and Liechtenstein, for example, both positioned themselves as “hubs” for activities that don’t require a physical presence (for Switzerland, in banking, and for Liechtenstein in holding companies, where

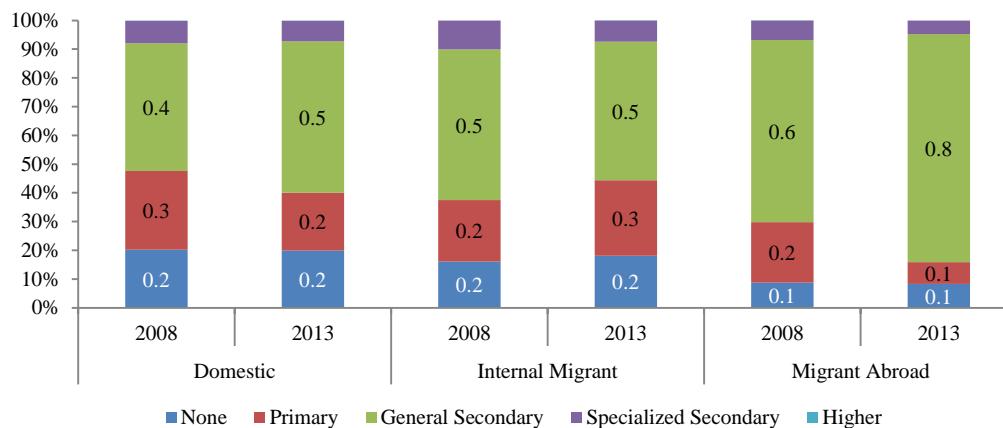
companies establish registered offices primarily for tax purposes). Both also have developed highly specialized niche industrial activities. Making trade work for jobs must consider this and a range of other issues particular to the geographic context of the Kyrgyz Republic.

#### D. MIGRATION RELATED CHALLENGES

4.31 **In addition to the indirect impacts of emigration on the economy and jobs through remittances, migration has direct impacts on labor supply (emigration, by definition, reduces the labor supply), as well as on the labor supply decisions of those left behind.** Depending upon the characteristics of migrants (or those who exit the labor force in response to migration decisions at the household level), the economy could experience skills (or muscle) shortfalls, as workers are drained from domestic markets. It is possible that the private sector is constrained by skills shortages, which ultimately limit the ability for growth and further employment expansion.

4.32 **The evidence does not suggest skills are currently a major constraint to growth and jobs creation in the formal sector or otherwise.** First, the evidence on the characteristics of migrants suggests that the bulk of migrants abroad are general secondary-skilled workers (Figure 4.8). Compared to the overall Kyrgyz population, migrants are younger, more likely to be male, and are only moderately more skilled than the general population. The Kyrgyz migration phenomenon is not occurring in higher skills, which is an important advantage for the Kyrgyz Republic.

**Figure 4.8: Educational distribution of migrants and domestic workers, 2008 and 2013**



Source: Yang, et al. 2015.

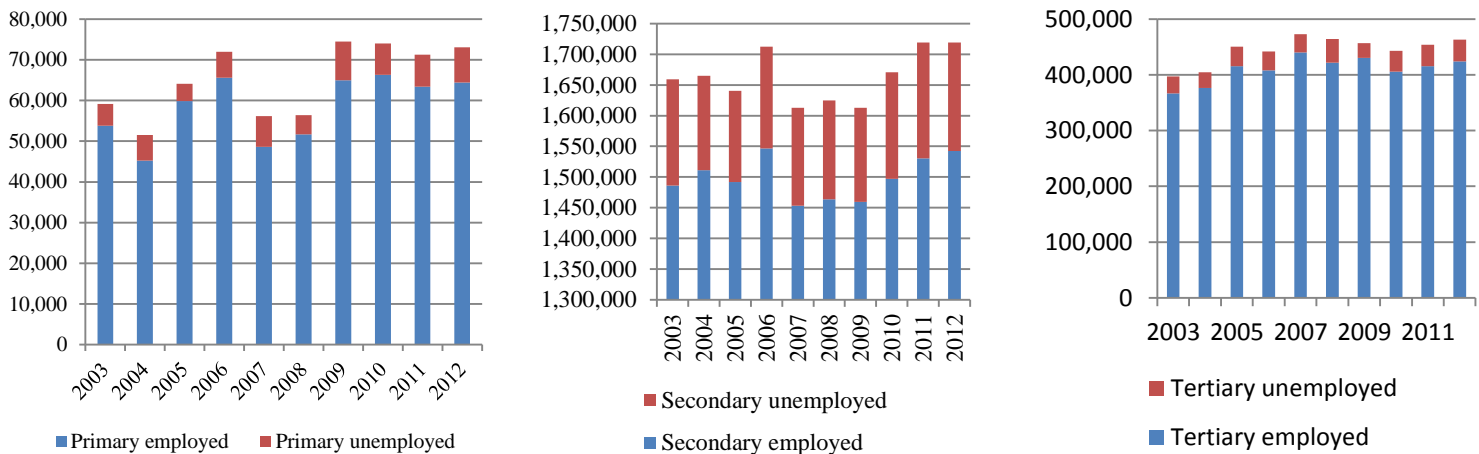
4.33 **Moreover there is little evidence to suggest that secondary skills are in deficit.** Evidence on the stock of labor by education and employment status suggests that the bulk of unemployment hits secondary educated workers (who also represent the large majority of Kyrgyz workers). Tertiary workers comprise only about 20 percent of the labor force, and their unemployment rates are significantly lower. While the low rates of tertiary unemployed could suggest skills deficiencies, the rate of unemployment among tertiary educated workers has not moved significantly over time (Figure 4.9).

4.34 **Returns to education estimates are neither suggestive of increasing skills gaps.** Relative to illiteracy, relative returns have risen and fallen for all workers, with relatively wide variation (rising in 2007, falling subsequently with the global economic downturn, -and rising again

in 2010) (Figure 4.10). The variation is not explained by migration patterns: between 2003 and 2012, migration grew continuously at a rapid pace. Sectors intensive in tertiary education have exhibited similar patterns of growth and employment creation and those intensive in secondary education. Finally, surveys of enterprises do not suggest skills to be a significant factor affecting firm expansion.

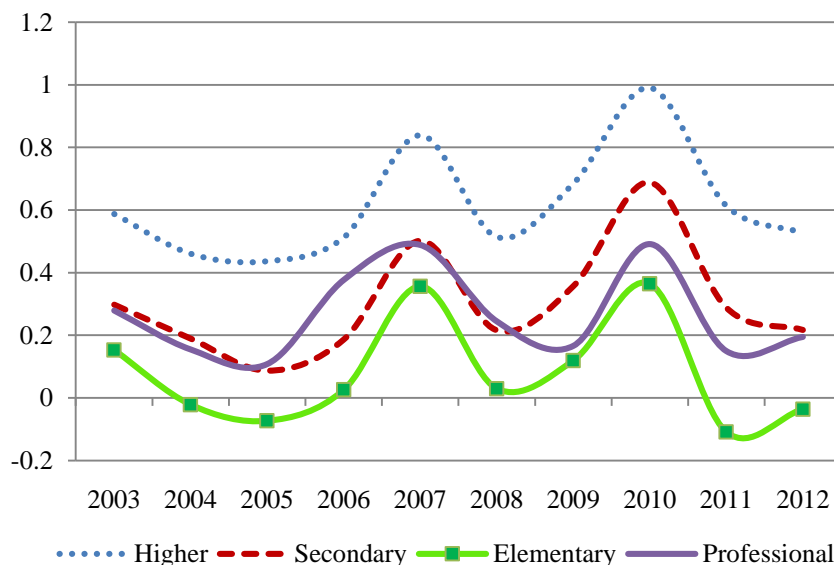
**4.35 While skills constraints do not appear to be a significant factor at present in the Kyrgyz jobs challenge** (whether caused by migration or otherwise), longer term decisions on education could lead to a skills constraint to future growth. The evidence on migration patterns suggests that increasingly, migrants are opting for work abroad to staying in school, which is concerning for future skills needs. Combatting this trend will require concerted efforts to understand the decision making process of younger migrants, as well as a better environment for jobs domestically.

**Figure 4.9: Employment and Unemployment by Education Level**



Source: Kyrgyz Republic LFS.

**Figure 4.10: Returns to Education Dynamics, by Major Education Levels**



## **E. THE MIGRATION SUCCESS STORY “TRAP”**

4.36 **A final element that is a challenge for the Kyrgyz jobs agenda is the migration trap.** Finally, the Kyrgyz Republic faces perhaps its greatest challenge in overcoming the migration trap. The migration driven model has allowed for both jobs abroad but also improved jobs outcomes (while low value) domestically, through the booming service sector. The gains that the migration model has brought are large.

4.37 **The challenge is to break free from a model that has raised wages and created employment in low-wage service activities.** Because of its success, there is a potential indifference of government authorities to changing the environment for a different model. Remittances have driven up tax revenues in Kyrgyz from 16 percent of GDP in 2000 to 28 percent in 2013, and allowed the government to move the deficit from 10 percent of GDP to 4 percent, without undertaking capital investments into the infrastructure that would support greater investment in the country. Both direct taxes and indirect taxes (on imported goods) have risen with increased demand due to remittance income.

4.38 **Overcoming the inertia of a model that has been successful will require a new way of looking at jobs.** For the private sector, the rules of the game for operating must encourage innovation, expansion, and job creation over captive markets and rents. For the public sector, the hiring and payment system must encourage qualified and dedicated career public servants over opportunists. For the informal sector, the rules of the game must be changed to encourage formality and access to knowledge, services and assets that improve income potential. The range of challenges for the Kyrgyz Republic are large, and the stakes are large too.



## APPENDICES

### A. NOTES ON DATA AND ANALYSIS AT THE FIRM LEVEL

1. **Chapter 3 explores firm growth and employment dynamics in the formal sector using firm panel data.** Among the data sources used in this section, the Kyrgyz National Statistics Committee collects several different reports on quarterly and annual bases from all establishments, regardless of size, ownership structure, or activity (including, for example financial organizations, public administration and non-profit organizations). Together, the financial reports submitted by enterprises represent the complete set of registered establishments in operation. The reports contain detailed information on inter alia: sales and expenses from which to calculate value added, profit, and the like; investment; and employment, man-hours and labor compensation. Information is also collected by which it is possible to determine each establishment's ownership structure, geographic location, main economic activity and, to some degree, age. The NSC itself utilizes this information from establishments in its national accounts estimates, and it publishes various information about establishments in a series of reports. It is from the NSC reports on establishments that the full account of employment in registered establishments by economic sector is available. An almost complete sample of the establishment data for the 2009-2012 period was made available to World Bank staff for the purposes of this analysis. The data from these various financial reports can be integrated by virtue of a unique firm ID common across reports, a task which was undertaken for the purpose of this diagnostic (see for description of the Kyrgyz Establishment Reporting dataset, referred to throughout this report as the KER). With more than 16,000 operational establishments, the KER provides a unique opportunity to examine the dynamics of establishments in the Kyrgyz Republic, and to assess the nature of firm entry, survival, growth, productivity, and job creation within the formal sector.

2. **The chapter also highlights the differences between the formal and informal sector and the links between them.** Utilizing the Kyrgyz LFS data (2003-2012), it is possible to provide a characterization of formal versus informal workers, based on whether they reported working in establishments or outside of establishments. As will be discussed, the number of workers who report working in establishments from the LFS differs from the number of workers reported by establishments to the NSC, but the aggregate figures are not far off, and for the purpose of differentiating "formal" (establishment) from "informal" (outside establishments or farming), it provides a reasonable if not exact gauge of differences in worker characteristics. Moreover, the LFS allows for more granularity in the picture of informal (and formal) workers by economic sector and oblast, which allows for a link from the formal sector production data from the KER to the types of workers employed within (and without).

**Table A 1: Characteristics of the Labor Force, Kyrgyz Republic: 2003 and 2013**

	<b>2003</b>		<b>2013</b>	
	Urban	Rural	Urban	Rural
<b>Total population</b>	1,728,267	3,285,022	1,900,293	3,762,840
<b>Total adult population (15 +)</b>	1,273,341	2,092,027	1,374,950	2,544,362
<b>Total labor force</b>	776,136	1,385,062	829,961	1,624,886
<i>Domestically employed</i>	<i>662,799</i>	<i>1,243,844</i>	<i>722,901</i>	<i>1,337,840</i>
<b>Agriculture</b>	43,357	822,879	34,154	686,054
<b>Industry</b>	124,171	56,222	108,007	89,347
<b>Construction</b>	47,488	32,132	68,387	106,883
<b>Public Admin/health/education</b>	156,781	179,636	148,482	194,390
<b>Services</b>	291,003	152,975	363,870	261,166
<b>At organization</b>	345,431	295,996	318,935	306,435
<b>At farm</b>	13,814	556,538	24,582	565,708
<b>Individually</b>	303,555	391,311	379,384	465,698
<b>Owner</b>	13,104	293,173	14,112	290,799
<b>Hired</b>	342,602	294,780	318,079	299,293
<b>Other</b>	307,094	655,892	390,710	747,748
<b>Male</b>	347,328	700,563	410,197	795,441
<b>Female</b>	315,471	543,282	312,704	542,400
<b>15-19</b>	20,130	118,865	15,184	91,230
<b>20-29</b>	179,469	367,995	204,196	386,263
<b>30-39</b>	211,486	318,420	199,476	318,269
<b>40-49</b>	157,930	280,353	168,237	302,422
<b>50-59</b>	70,621	98,521	110,340	200,583
<b>60+</b>	23,164	59,690	25,468	39,073
<b>Higher</b>	216,664	149,890	233,857	192,005
<b>Secondary prof</b>	123,432	166,457	94,882	114,563
<b>Primary prof</b>	54,043	52,315	60,314	100,935
<b>Complete secondary</b>	238,582	741,329	298,818	815,212
<b>Incomplete secondary</b>	22,753	87,356	29,118	93,706
<b>Primary and below</b>	7,326	46,497	5,911	21,420
<i>Employed abroad</i>	<i>10,924</i>	<i>34,349</i>	<i>31,297</i>	<i>159,613</i>
<i>Unemployed</i>	<i>102,413</i>	<i>106,869</i>	<i>75,763</i>	<i>127,433</i>

Source: Estimates based on data of the Kyrgyz Labor Force Survey.

**Table A 2: Sectoral differences in hiring rates 2009-2012: Estimate of portion attributable to differences in growth versus portion attributable to differences in employment elasticities**

	<b>Probability of hiring</b>	<b>Difference in probability of hiring, relative to mean</b>	<b>Difference in avg prob. growth, relative to mean</b>	<b>Difference in rate of entry, relative to mean</b>	<b>Portion of hiring difference attributable to higher probability of growing</b>	<b>Portion of hiring difference attributable to higher entry rate</b>	<b>Portion attributable to higher probability of hiring, given growing</b>
Agriculture	68%	27%	26%	10%	13%	4%	10%
Mining	49%	8%	6%	2%	3%	1%	4%
Manufacturing	37%	-3%	-1%	-8%	-1%	-3%	1%
Electricity/gas/water	39%	-2%	6%	-9%	3%	-4%	-1%
Construction	41%	0%	-2%	-1%	-1%	0%	2%
Wholesale/retail trade	41%	0%	-2%	3%	-1%	1%	0%
Hotels/restaurants	38%	-3%	-2%	3%	-1%	1%	-3%
Transport/storage/communication	40%	-1%	0%	4%	0%	2%	-2%
Finance	25%	-15%	-17%	-6%	-9%	-3%	-4%
Real estate/business	39%	-2%	0%	-1%	0%	-1%	-1%
Education	56%	15%	10%	10%	5%	4%	6%
Health/social	36%	-4%	-1%	-1%	0%	-1%	-3%
Community	36%	-4%	-6%	-2%	-3%	-1%	-1%

*Source:* Staff estimates from KER data. Estimated relationship  $\Pr(\text{hiring}) = .52*\Pr(\text{growing}) + .44*(\text{rate of entry}) + \text{sector dummies}$ ; Adj R<sup>2</sup>=0.59.

## B. REGRESSION ANALYSIS OF NET JOB GROWTH IN FORMAL ESTABLISHMENTS

1. With the importance placed on encouraging productive job creation in almost all countries, a considerable literature is devoted to understanding the mechanisms by which firms expand and create jobs. This literature focuses both on understanding the key sources of net employment creation in the economy (which firms are primarily responsible for job growth in the economy), as well as understanding the characteristics of that job growth (particularly, for example, in terms of firm performance).

2. In order to understand the mechanisms by which formal establishments create jobs, as well as the characteristics of net job creation in Kyrgyz Republic, we undertake regression analysis utilizing the KER establishment data. The advantage of the KER dataset is that it is broadly representative of the productive formal sector, excluding known sectors (gold production, railroads, public administration, and financial intermediation). The data also covers a period of four years, and includes about 15,000 establishments present during one or multiple years, from which it is possible to examine employment growth dynamics including entry and exit.

3. First, to determine the main source of net job creation, we replicate the econometric strategy in Rijkers, et al (2014)<sup>29</sup> and estimate employment-weighted firm-level regressions of net employment growth, using as the measure of firm-level employment growth,  $g_{ist}$  the change in employment from year  $t-1$  to year  $t$ , divided by average size:

$$g_{ist} = 2 \frac{E_{ist} - E_{ist-1}}{(E_{ist} + E_{ist-1})}$$

where  $E_{ist}$  denotes employment in firm  $i$  of type  $s$  at year  $t$ . This measure is symmetric, bounded by -2 and 2, and accommodates both entry and exit. By virtue of employment weighting<sup>30</sup>, the mean of the dependent variable is equal to the appropriate employment weighted mean, and coefficient estimates can be interpreted as employment weighted conditional means.

4. We consider several types of explanatory variables. To assess to what extent the observed relationship between employment growth is due to starting firm size (for established firms), we include dummies which categorize firms based on their original firm size, with the exception of entrants who are universally categorized simply as entrants. Thus in one set of firm size/age dummies we have 5 categories (of which 4 are included in estimations) for micro established firms (1 employee in 2009), small established firms (less than 10 employees in 2009), medium established (11-60 employees in 2009) and large established (more than 60 employees in 2009), as well as entrants.

5. We also examine the impact of productivity and profitability, with both measured by a ranking of firms within a distribution of 1-20 on total average profits/output per worker. These

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<sup>29</sup> Rijkers, et al. 2014.

<sup>30</sup> We employ two sets of weights. First, we weight according to base year employment. Because entrants will, naturally, not have a base year employment, we weight by the first year of employment data (entry year employment). In another set of estimates, we weight by average employment over the period.

variables are included with the goal of understanding whether the relationships between firm size and age and employment growth reflect performance differences associated with scale and across the life cycle of the establishment. The use of the profitability and productivity ranks, as opposed to levels, helps reduce the impact of extreme observations and thus measurement error while allowing for both negative and positive values.

6. To examine the issue of smallness and potential obstacles to expansion beyond small status (in this case beyond 9-10 workers), we also run the regression with a more elaborate breakdown of size of firm. In particular, we break down with greater precision small and medium firms by the number of workers in 2009 (for established operations) to determine how net job creation changes by firm size. The particular interest is in understanding whether small firms (less than 10 employees) face a specific barrier to further job creation that other firms (firms which have graduated beyond smallness) do not.

7. To assess whether firms decide between hiring labor versus capital (investment), we also include a measure of investment (constructed as the average accumulated investment over the period). Because investment information has only been completed by a small group of establishments, we only include this variable in one set of estimations.

8. In one set of estimations we examine the impact of ownership structure (state-owned or not) on employment growth. But in all cases, we restrict the analysis to value generating firms. In all estimations, we include sectoral dummies

9. While we undertake the estimations for all firms, we also perform the estimations for a restricted sample of growing firms, in order to better understand how firm size influences job growth. If the relationship between net job growth and firm size is increasing in firm size for all firms, but decreasing when the sample is restricted to growing firms, then we know that small firms have lower job rates of job growth because they are less likely to grow, not because they are less likely to expand.

10. Table B 1-Table B 4 present the results of our regressions. Table B 1 Table B 3 reflect the sample of value creating firms only, while Table B 4 has two estimations including the whole sample of establishments (including non-profits). For ease of understanding, the coefficients on firm size are presented not relative to 0 but to the unconditional average of the omitted variable (firms greater than 200 persons). The results from Table B 1-Table B 2 are displayed graphically in Figure B 1Figure B 2. Several findings are worth highlighting.

11. First, it should be observed that for the full sample of establishments (not just growing firms) the coefficients on firm size are all negative but for entrants. No firms created employment (in net terms). Thus, the assessment of the contribution to net job growth in Kyrgyz is an assessment of job loss, and which establishments contributed the least to that loss.

12. Second, in our full sample of value generating firms, and using the base size classification of establishment size, job growth is positively related to the size of the firm. This remains true when controlling for profitability or productivity. From Figure B 1, net job growth is lowest for small firms and remains flat until around 10 workers, at which point the rate of net job growth increases more sharply.

13. When the sample is restricted to growing firms only (firms in which value added grew over the period, including entrants), the relationship between employment creation and firm size changes considerably. First, the coefficients are positive, as growing firms as a group contribute positively

to net job growth. Secondly, net job creation is highest for very small firms, and declines to negative values after firms reach over 4 workers. Small firms which are growing have a much higher rate of net job creation than larger firms (which shed workers, even growing firms). Thus, the job creation/firm size relationship, at least for smaller firms, is really a job creation growth relationship. Small firms in aggregate have much lower contribution to job creation in aggregate because they have a much lower probability of growth (separate from their actual rates of growth, which are also lower).

14. We cannot observe the age of the firm (other than entrants), but the sample of small firms is obviously diverse and potentially includes a large number of young firms. Some of these younger firms would be in the process of growing (and expanding employment, contributing like entrants to job creation), but some of the would be either subject to the extreme churning process that characterizes small firms (where survival rates are low) or at the level of small stagnation, no longer expanding. On net, small firms do not contribute to job growth, but they contribute significantly when they are in their growth period (presumably when young).

15. The results from the full sample of value-producing firms also suggests that job shedding by small firms remains relatively similar across firm size until about 10 workers, at which point the degree of job shedding declines (the relationship becomes more steeply positive). This suggests that the ability to grow is most constrained for smaller firms, but once small firms graduate past smallness, the growth job growth potential improves. The financial reporting of establishments explicitly considers firms with fewer than 9 workers as “small”, and the reporting (and other) requirements change for firms based on this graduation. Thus, the improvement in the capacity to create jobs at the border of “medium sized” is suggestive of regulatory constraints that impede expansion beyond 10 workers (or at least impede the reporting of employment beyond 10 workers).

16. When average size is used as the classification of employment size (full sample), the relationship is everywhere upward sloping for all firm categories past 2, indicating that, in general, large firms contribute more to employment growth than small firms (Figure B 2).

17. In our regressions which include measures of investment, there is no evidence to indicate that establishments substitute hiring for capital investment. Rather the relationship is positive and significant. This suggests that labor expansion is complementary to other investment in capacity. In Figure B 3, it is also clear that the reporting of investment is highly similar to the relationship for growing establishments, but in fact, the sample of firms that report investment is not significantly different from the full sample of firms, in terms of growth (that is, the sample is not biased toward growing firms). About 55 percent of investing firms are growing (versus the full sample where about 51 percent are growing).

18. Finally, when measures of state-ownership are included, meanwhile, the relationship is always positive and significant. While this is true in the case of including non-profits, it is especially the case in value-generating establishments, where state-owned firms have a 25 percent higher probability of creating jobs for any given size of firm and sector (Table B 3 Table B 4).

**Table B 1: Determinants of net job creation in the formal sector, 2009-2012**

<b>Net job creation in formal establishments, 2009-2012</b>						
<i>Dependent variable: Net Job growth 2009-2012</i>						
<i>Base size classification of employment</i>						
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Productivity/profitability</b>						
Avg profits, rank*	-0.032		-0.042			-0.022
Avg productivity rank*		-0.027				
<b>Age/size</b>						
Entrant			1.958	1.802	1.954	2.038
1			-0.631	-0.802	0.502	0.593
2			-0.577	-0.743	0.157	0.244
[3,4]			-0.647	-0.816	-0.042	0.042
[5,6]			-0.618	-0.789	-0.166	-0.076
[7,9]			-0.604	-0.756	-0.183	-0.098
[10,11]			-0.517	-0.673	-0.171	-0.089
[12,15]			-0.464	-0.619	-0.131	-0.044
[16,19]			-0.471	-0.625	-0.189	-0.103
[20,25]			-0.472	-0.623	-0.196	-0.124
[26,60]			-0.401	-0.548	-0.197	-0.115
[61-200]			-0.433	-0.583	-0.167	-0.088
More than 200 (omitted): unconditional average			-0.226	-0.226	-0.026	-0.026
Sample	Value producing firms	Value producing firms	Value producing firms	Value producing firms	Growing firms only	Growing firms only
N	11,448	11,448	11,448	11,448	5,936	5,936
Adjusted R <sup>2</sup>	0.112	0.141	0.641	0.611	0.841	0.841

Dependent variable Davis-Haltiwanger-Schuh growth rate. Regression weighted by base year (2009) firm size.

\* rankings from 1 (highest profits, highest VA, etc.) to 20 (lowest profits, etc.); thus a negative coefficient on profits/productivity indicates a higher (smaller) profitability rank is associated with higher job growth.

**Table B 2: Determinants of net job creation in the formal sector, 2009-2012**

<b>Net job creation in formal establishments, 2009-2012</b>							
<i>Dependent variable: Net Job growth 2009-2012</i>							
<i>Average size classification of employment</i>							
	(1)	(2)	(3)	(4)	(5)	(6)	
<b>Productivity/profitability</b>							
Avg profits, rank*	-0.006		-0.018			-0.001	
Avg productivity rank*		-0.010					
<b>Age/size</b>							
Entrant			2.029	1.960	2.118	2.123	
1			-1.036	-1.112	0.083	0.088	
2			-0.739	-0.817	0.140	0.145	
[3,4]			-0.510	-0.589	0.180	0.185	
[5,6]			-0.380	-0.452	0.301	0.306	
[7,9]			-0.268	-0.340	0.231	0.235	
[10,11]			-0.202	-0.270	0.290	0.295	
[12,15]			-0.228	-0.296	0.178	0.183	
[16,19]			-0.159	-0.231	0.107	0.112	
[20,25]			-0.247	-0.306	0.049	0.053	
[26,60]			-0.163	-0.229	0.162	0.166	
[61-200]			-0.088	-0.151	0.259	0.262	
More than 200 (omitted): Unconditional average			-0.009	-0.009	0.193	0.193	
Sector dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sample	All producing firms	value producing firms	All producing firms	value producing firms	All producing firms	value producing firms only	Growing firms only
N	11,448	11,448	11,448	11,448	5,936	5,936	
Adjusted R <sup>2</sup>	0.115	0.120	0.628	0.622	0.816	0.816	

*All coefficients statistically significant at the 1% confidence interval, unless highlighted in grey.*

Dependent variable Davis-Haltiwanger-Schuh growth rate. Regression weighted by average firm size (2009-2012).

\* rankings from 1 (highest profits, highest VA, etc.) to 20 (lowest profits, etc.); thus a negative coefficient on profits/productivity indicates a higher (smaller) profitability rank is associated with higher job growth.



**Table B 3: Determinants of net job creation in the formal sector, 2009-2012**

**Net job creation in formal establishments, 2009-2012**

*Dependent variable: Net Job growth 2009-2012*

*Base size classification of employment*

	(1)	(2)	(3)	(4)
<b>Productivity/profitability</b>				
Avg productivity, rank*	-0.043	-0.023	-0.040	-0.025
Avg investment			0.000	0.000
<b>Age/size</b>				
0	1.960	2.041	2.050	2.029
1	-0.605	0.605	1.440	1.243
2	-0.552	0.256	1.007	1.051
[3,4]	-0.627	0.052	0.281	0.256
[5,6]	-0.601	-0.067	0.165	0.039
[7,9]	-0.590	-0.093	0.059	0.060
[10,11]	-0.512	-0.087	-0.014	-0.008
[12,15]	-0.463	-0.045	-0.042	-0.028
[16,19]	-0.472	-0.100	-0.029	-0.029
[20,25]	-0.477	-0.125	-0.125	-0.133
[26,60]	-0.412	-0.119	-0.151	-0.093
[61-200]	-0.455	-0.097	-0.200	-0.091
More than 200 (omitted): Unconditional average	-0.226	-0.026	-0.232	-0.035
Stateowned	0.242	0.097	0.219	0.100
Sample	Value producing firms	Growing firms only	Value producing firms	Growing firms only
N	11,448	5,936	2,766	1,541
Adjusted R <sup>2</sup>	0.645	0.858	0.700	0.829

*All coefficients statistically significant at the 1% confidence interval, unless highlighted in grey.*

Dependent variable Davis-Haltiwanger-Schuh growth rate. Regression weighted by base year (2009) firm size.

\* rankings from 1 (highest profits, highest VA, etc.) to 20 (lowest profits, etc.); thus a negative coefficient on profits/productivity indicates a higher (smaller) profitability rank is associated with higher job growth.

**Table B 4: Determinants of Net Job Creation in the Formal Sector**

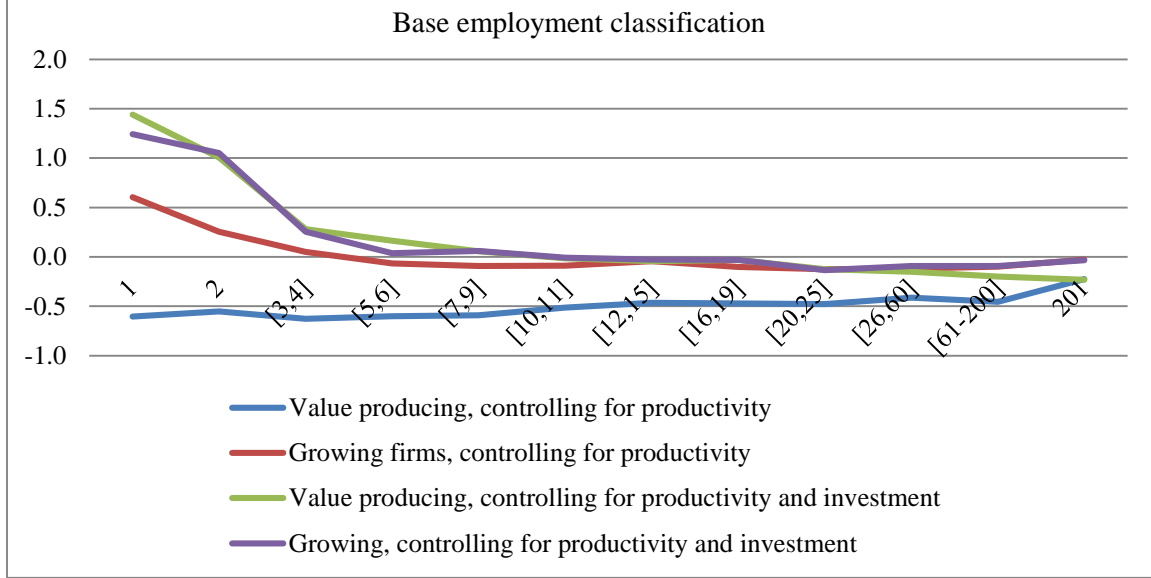
<b>Net job creation in formal establishments, 2009-2012</b>				
<i>Dependent variable: Net Job growth 2009-2012</i>				
<i>Base size classification of employment</i>				
	(1)	(2)	(3)	(4)
<b>Productivity growth/profitability</b>				
Average productivity rank*				-0.038
<b>Age/size</b>				
Entrant	1.770	1.786	1.759	1.993
Micro established	-0.649	-0.598	-0.807	-0.504
Small established	-0.776	-0.734	-0.806	-0.504
Medium established	-0.712	-0.696	-0.643	-0.344
<b>State owned</b>		0.148	0.125	0.246
<hr/>				
	All firms (not just value generating)	All firms (not just value generating)	Value generating firms	Value generating firms
Sample				
N	15884	15884	11448	11448
Adjusted R <sup>2</sup>	0.555	0.557	0.594	0.674

*All coefficients statistically significant at the 1% confidence interval.*

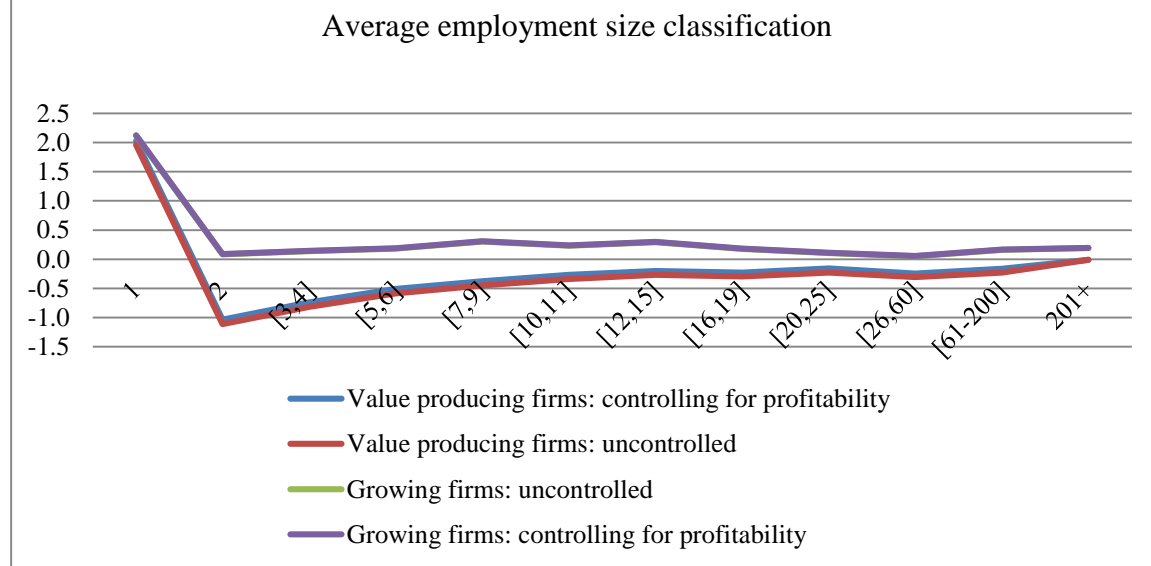
Dependent variable Davis-Haltiwanger-Schuh growth rate. Regression weighted by base year (2009) firm size.

\* rankings from 1 (highest profits, highest VA, etc.) to 20 (lowest profits, etc.); thus a negative coefficient on profits/productivity indicates a higher (smaller) profitability rank is associated with higher job growth.

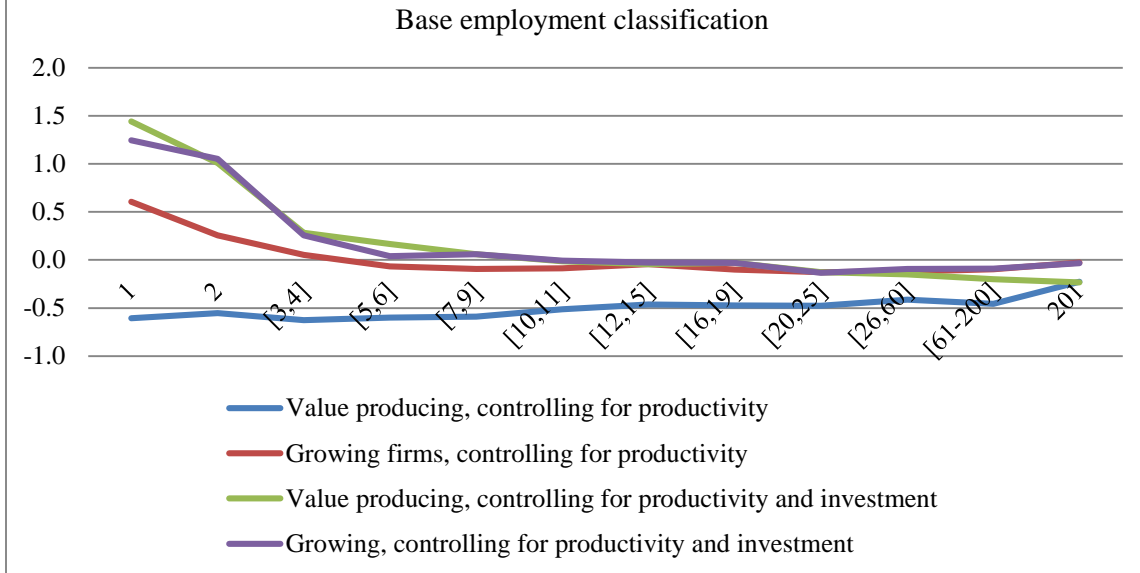
**Figure B 1: Net job creation for established firms 2009-2012**



**Figure B 2: Net job creation for established firms 2009-2012**



**Figure B 3: Net job creation for established firms 2009-2012**



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