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Kyrgyz Republic: Poverty Assessment

Volume 2: Labor Market Dimensions of Poverty

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ACRONYMS AND ABBREVIATIONS

CAC	Central Asia and the Caucasus
CIS	Commonwealth of Independent States
DFID	Department for International Development
ECA	Europe and Central Asia Region
GDP	Gross Domestic Product
GNI	Gross National Income
ha	Hectare
HBS	Household Budget Survey
HCI	Headcount Index
KIHS	Kyrgyz Integrated Household Survey
KPA	Kyrgyz Poverty Assessment
MDG	Millennium Development Goal
ml	Million
NPRS	National Poverty Reduction Strategy
NSC	National Statistics Committee
PPP	Purchasing Power Parity
UNDP	United Nations Development Programme
WB	World Bank
WDI	World Development Indicators

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CHAPTER 1: INTRODUCTION AND KEY MESSAGES

1.1 Labor markets and poverty in the Kyrgyz Republic.

1. The Kyrgyz Republic is the second poorest country in the ECA region. In spite of important reductions in poverty, more than two people in five are still not able to meet their basic needs in terms of consumption expenditures. Lack of access to good jobs, with a reasonable salary and some income security, is the most important reason why people cannot get out of poverty. Yet, rather little is known about who is barred from access to the labor market, and why, the differences between rural and urban job opportunities, or the quality of employment. The purpose of this report is to take stock of the labor market in Kyrgyz Republic, with a specific focus on the interaction between employment opportunities and poverty. Most of the labor market analysis is based on the Kyrgyz Republic Household Budget Survey (KIHS) from 2003, complemented by other data from the National Statistics Committee.

2. The report is organized as follows. Chapter 1 provides an overview of labor market developments since economic independence in 1990, with an emphasis on the period after 2000. It also provides a snapshot of the most important indicators of the Kyrgyz labor market in 2003. Chapter 2 looks at rural labor markets, where most of the population and an even higher share of the poor live. Chapter 3 discusses urban labor markets, with a view to single out developments in Bishkek City – which is under particular pressure from immigration – and other urban settlements. Chapter 4, finally, offers an analysis of women’s opportunities in the Kyrgyz labor market.

1.2 Key results from the report.

3. The main conclusions from the Kyrgyz Labor Market Report are summarized below, with some of the key indicators for the analysis displayed in Table 1.

Table 1: Kyrgyz Republic: Key indicators.

	Rural	Urban
Poverty headcount index (%), 2005	51	30
Labor market indicators, 2003		
Employment rates (%)	60	54
Employment rates, women in poorest quintile	56	47
Participation rates (%)	65	62
Unemployment rates (%)	8	13
Informal sector (% of total employment)	54	39
No. hours worked per week (average)	41	34
Migrants (% of total working age population)	11	29

Source: Estimates based on KIHS 2003 (labor) and 2005 (poverty).

- **Job-less growth, low quality jobs.** The Kyrgyz economy has seen moderate growth rates, until recently driven by agriculture; however, growth has not generated enough jobs to keep up with working age population growth. Compared to the mid-1990s, fewer people now participate in the labor market, and more people are unemployed. Perhaps more importantly, the economy has not created good jobs, as evidenced in a long-run trend of job-growth in agriculture up until the early 2000s, high rates of informality and underemployment and some hidden unemployment due to discouraged workers. While labor regulations do not appear to be specifically limiting to business (high informality might be an explanation for this), overall, Kyrgyz Republic does not have a business-friendly climate, which in turn is likely to constrain the creation of “good” jobs. The poor, the young and the uneducated, women, and non-Kyrgyz ethnic groups have a lower probability of finding jobs than other groups.
- **Rural areas: agricultural growth but few non-farm opportunities; lack of assets.** The agricultural sector holds a critical role in the Kyrgyz Republic, and has benefited from policy reforms in recent years. Rural poverty has fallen in tandem with agricultural growth, although the connection seems to have broken in 2005, when poverty fell in spite of negative agricultural growth. But those that remain poor are predominantly occupied in farming: they are underemployed, but non-farm opportunities are generally not open to them. A majority of rural households hold land – predominantly used for subsistence farming – but have little access to other complementary assets to make productive investments and-or protect consumption levels in times of crisis. With limited job opportunities at home, internal migration (to Bishkek City, mostly) and external migration (to Russia, Kazakhstan and other neighboring countries) is an important income source for rural families, and may have contributed to lowering rural poverty rates. Because of high rates of poverty, low quality of education and lack of access to schooling facilities, child labor is also common. While bringing in important extra income to poor families, child labor carries with it many negative implications in terms of exposure of children and neglected schooling.
- **Urban areas: concentration in Bishkek, segregation of poor and non-poor labor markets.** While there is no aggregate urbanization trend in the Kyrgyz Republic, migration into Bishkek is high. Better job opportunities and higher average income levels attract migrants to Bishkek City and the surrounding Chui area and put pressures on job creation. The urban poor depend critically on the labor market because they have much less opportunities to survive through subsistence farming. However, the gap between poor and non-poor in terms of jobs (unemployment, access to good jobs) are much more pronounced than in rural areas. Urban geographical segregation implies that the poor are further off from public services like transportation; because of lack of affordable child and elder care, women, especially the poor, are not able to access jobs.
- **Gender gaps in job and income opportunities are pronounced in the labor market.** Women have lower participation rates, higher unemployment rates and longer unemployment spells; among inactive women, an important share is made up of discouraged workers, and poor women are worst off in labor markets of all groups in the Kyrgyz Republic. Lack of affordable child care is likely to be a major obstacle for female participation. Women are also overrepresented in badly paid sectors like agriculture, education and health and earn significantly less than their male counterparts. Estimates of earnings differentials in the private formal sector leave a large part unexplained, implying that discrimination may be an issue. In contrast, earnings differentials in the public sector are partly owed to differences in human capital, pointing to a potential role for education and training of women workers to even out these disparities.

CHAPTER 2: KEY LABOR MARKET DEVELOPMENTS

2.1 Introduction

4. **During the first years of transition, the Kyrgyz Republic was hard hit by the collapse of the Soviet Union and the end of important aid and trade relations.** Output levels had been halved by 1995 compared to 1990; in 1993, food prices approached 1,000 percent. Over the 1990s, the government of the Kyrgyz Republic managed to secure macroeconomic stability while making good progress on structural reforms, however. The policy efforts paid off in some economic growth, moderate inflation rates and a stable currency while the share of the population living in poverty declined significantly (World Bank, 2005). The economy also proved fairly resilient to long-term effects from the 1998 economic crisis in Russia.

5. **In spite of recent high growth rates, the Kyrgyz Republic is still one of the poorest among ECA countries.** Yet, with an average per capita income of 500 USD in 2006, the Kyrgyz Republic remains one of the poorest countries in the ECA region where the average income is eight times as high. More than two fifths of the population are poor. The Kyrgyz Republic is a small, mountainous and land-locked country, two thirds of the population lives in rural areas, most of them in the southern part of the country, and half of the urban population is concentrated in the capital, Bishkek, located in the north. The economy remains largely concentrated on primary products, with agriculture accounting for one third of output (Table 2).

Table 2: Kyrgyz Republic: Key economic and social indicators

	Kyrgyz Republic							ECA	LIC ⁵
	1990	1994	1997	2000	2004	2005	2006	2004	2004
Average GDP growth (% p.a.) ¹	..	-14.4	3.6	3.7	4.8	-0.2	2.7	5.3	5.2
Food-price inflation (% p.a.)	..	966 ²	25	18	..	..	..	..	..
Agriculture (% of output)	34	41	45	37	33	34	33	8	23
Gold, share of exports FOB (%)	0	0	29	39	39	34	25	..	..
GNI per capita (current USD)	..	370	390	280	400	450	500	3295	507
National poverty headcount (% of pop)	..	..	..	..	45.9	43.1	39.9	..	..
Female 2ndary school enrolment (%)	101	..	..	86	88	..	..	90	41
Infant mortality rates (%) ³	68	63	..	60	58	..	..	29	79

1. Between periods. For ECA and LIC, refers to average for 2000-2004. 2. Refers to 1993. 3. Refers to 2001. 3. Per 1,000 live births. 5. Low income countries, defined by the WB as countries with a 2004 GNI per capita below USD 825. *Source:* estimates based on KIHS 2003-2005, data from national authorities, and World Development Indicators, 2005.

6. **Lack of access to “good jobs” – reasonably paid employment in higher-productivity activities in the formal sector – is one of the most important reasons why individuals and households cannot get out of poverty.** A recent joint Kyrgyz - World Bank poverty assessment

asserted the importance of broad-based and equitable growth for the eradication of poverty (Box 1). For the poor to raise their income, they need to be able to get jobs with higher wages and better and more secure working conditions, all of which needs to be underpinned by productivity growth in the formal sector. The problem has two important aspects. One is the access to jobs in the first place – the poor tend to participate less in the labor market, and have higher unemployment rates, than the non-poor. A second aspect, even more important in a low income country like Kyrgyz Republic, is the quality of the jobs available to the poor and non-poor. People living at or just above subsistence minimum cannot afford not to be working. In fact, although the poor have higher unemployment rates and lower participation rates than the non-poor, the majority are working poor. But the poor tend to be underemployed – i.e. work less than they would like to – and/or be trapped in low-productivity activities, especially in the agricultural or services sector. This is the case in several of the poorer CIS countries (Rutkowski, 2006).

Box 1. Kyrgyz Republic: Enhancing Pro-poor Growth. Main conclusions and implications for labor market analysis.

Kyrgyz Republic's low income levels coupled with moderate inequality levels and very high poverty levels mean that sustained and broad-based growth will be central to any poverty reduction strategy.

Contagion from the Russian crisis in 1998 led to increases in poverty; conversely, a strong recovery resulted in a significant reduction in the share of population living in poverty between 1998 and 2001: from 60 to 47 percent in rural areas and from 45 to 34 percent in urban areas.

The agricultural sector has been particularly responsive to policy reforms – including land reform, liberalization and policies aimed at smaller farmers – and agricultural productivity has increased. The strength of the agricultural sector has been critical to the advances made in poverty reduction since 1998.

Poverty has a very strong regional dimension. The regions with the lowest income per capita - Naryn and Talas – also have the highest poverty incidences (89 and 72 percent, respectively). These are rural areas, in the case of Naryn also high-mountainous, dependent on agriculture, and have the highest net out-migration rates in the country. Most of the poor live in the most populous oblasts, Osh and Jalalabat, however.

In spite of a relatively more important poverty reduction in rural areas, poverty rates remained significantly higher in rural than in urban areas.

Agriculture alone cannot be the engine of growth; growth in other labor-intensive sectors (construction, trade, transportation, tourism) is needed if poverty reduction is to continue. These sectors remain constrained by an inadequate policy framework, however.

Formal job creation would be encouraged by removing some of the disincentives for enterprises to operate in formal sector, improving the information flow and facilitating job search for the unemployed, and making the investment climate more amenable to small businesses.

Source: *Kyrgyz Republic: Enhancing Pro-poor Growth*, World Bank, 2003

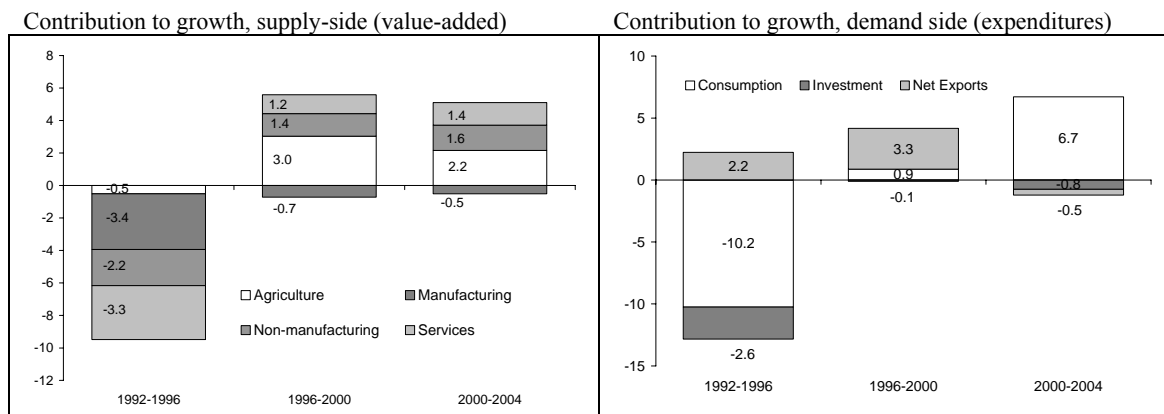
7. **The purpose of this report is to provide a better understanding of the labor market in urban and rural areas in the Kyrgyz Republic and its implications for poverty.** The remainder of this chapter deals with recent trends in growth and employment. It also provides a snapshot of key labor market indicators and sets the background for the following chapters that deal with the specific job-situation in rural and in urban areas respectively, and look at gender labor market issues in detail.

2.2 Recent trends in growth and employment

Economic growth has not resulted in sufficient job creation.

8. **The structure of growth, as well as the level, will have implications for labor market outcomes.** Recent growth rates have been largely driven by agricultural value-added and on the demand side, by domestic consumption. Since the mid 1990s, the agricultural sector has seen important growth rates, in response to a significantly improved policy environment, although growth was negative in 2004 and 2005 (Figure 1). Services have also contributed to growth, especially after 2000, while the manufacturing sector has been contributing negatively throughout. The contribution of the mining sector has been volatile throughout. On the demand side, domestic consumption has been the overall driver of growth. Kyrgyz investment rates have been relatively low, hovering around 13 percent of GDP between 1996 and 2004, although private investment has overtaken government investment as the main source of capital accumulation. The relatively feeble exports performance has been centered on gold exports. There are now signs of more broad-based growth, however, due to increased production in manufacturing sectors such as food processing, textiles, and glass production (IMF, 2005).

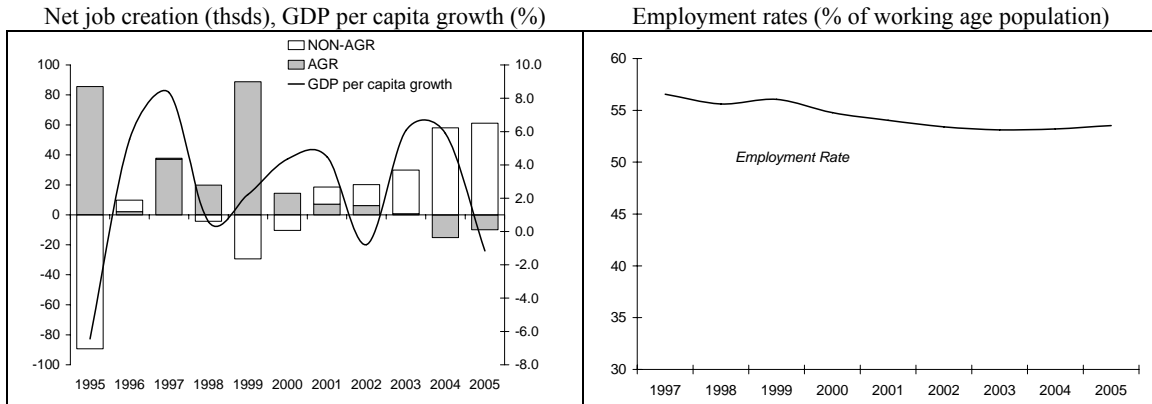
Figure 1: Growth has been driven by agriculture; and by consumption.



Source: Estimates based on data from national authorities.

9. **Kyrgyz Republic's growth rates have not generated enough formal sector jobs to keep up with labor supply.** Although net job creation has increased since reaching a low in the year 2000, fewer jobs were being created in the early 2000's than in the late 1990s. As the population of working age has continued to grow while the formation of new jobs has slowed down, the employment rate – the share of population who are of working age and are actually employed – has been stagnating. (Standard labor market indicators terminology and definitions are discussed in Box 2.) While the employment rate stopped falling in 2004, there are still fewer working persons who have to provide for more inactive and unemployed persons, than was the case in the mid-1990s (Figure 2). The shortfall in labor market opportunities has important implications – especially for the poor.

Figure 2: Labor market trends are not improving.



Source: Estimates based on ILO and data from national authorities. Labor market data will not be consistent (in level) with 2003-2005 data from the KIHS.

Box 2: Conventional Labor Market Indicators Definitions.

The working age population is defined as the population aged 15 and above.

The labor force is the active working population, i.e. the number of people that are either employed or actively looking for a job (unemployed).

The inactive is the residual of the labor force, i.e. people who are of working age but neither employed nor looking for a job.

The labor force participation rate is the share of working age population that is active in the labor market.

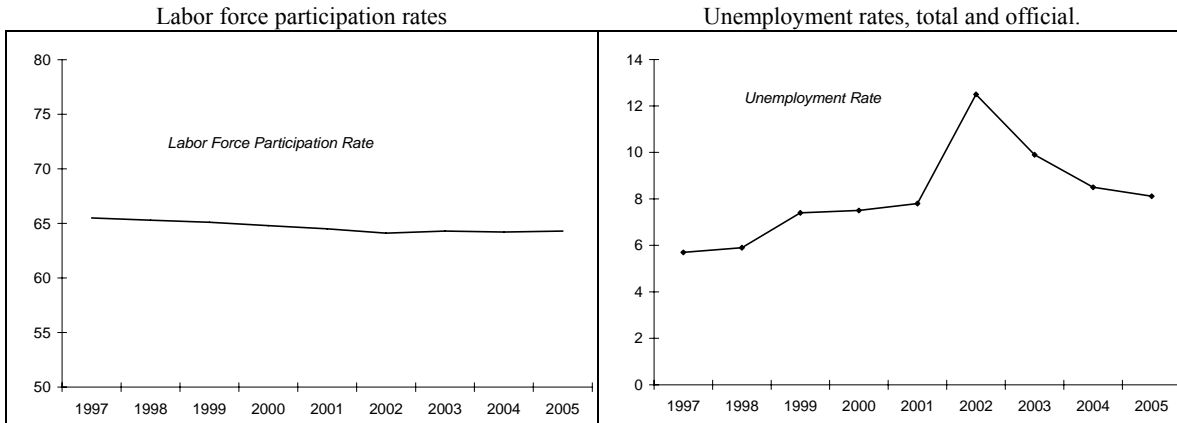
The employment rate gives the share of employed people as percentage of total working age population. The employment rate is arguably the best key indicator of the unlocked potentials in the labor market. It describes how many are actually working of those who could potentially be working, irrespective of whether those who are not working are unemployed or inactive.

The official unemployment rate is the share of the labor force that is registered as unemployed with the Kyrgyz Employment Office.

The total unemployment rate is the share of unemployed people as percentage of all those that are active. It is based on the strict ILO definition, i.e. those who are (i) without work (ii) available for work within the next two weeks and (iii) have been seeking work for the preceding 2 weeks.

10. **Unemployment is higher, and participation rates have stagnated.** Employment rates in the Kyrgyz Republic are now lower for two reasons. Fewer people who look for a job are able to secure one, meaning that total unemployment rates have increased. Unemployment rates have come down since the peak in 2002, but are still higher than in 2001. (Official unemployment rates- referring to those who are registered with the Employment office – have stagnated, however.) In addition, more people have withdrawn from the labor force, meaning that fewer people also choose to look for work in the first place. As people find it harder to find a job, and unemployment spells are longer, some lose hope of finding a job altogether and stop looking, i.e. drop out of the labor market (Figure 3).

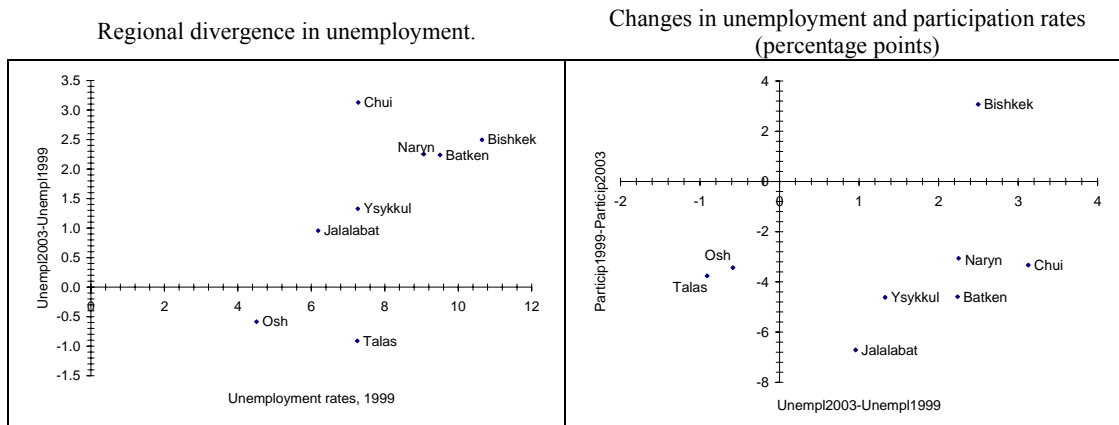
Figure 3: Employment rates have stagnated because of stagnating labor force participation rates and higher unemployment rates.



Source: Estimates based on ILO and data from national authorities. Labor market data will not be consistent (in level) with 2003-2005 data from the KIHS.

11. **Regional differences in labor market conditions have become more accentuated.** Recent years have also witnessed a trend of regional divergence in unemployment (Figure 4). Between 1999 and 2003, unemployment rates increased most in Bishkek and surrounding Chui, Naryn and Batken – all of which had unemployment rates of 8 percent or higher already in 1999. There is no similar clear trend of divergence for participation rates.

Figure 4. The labor market situation has worsened in the regions with highest unemployment.



Source: Estimates based on data from national authorities.

In the period 1999-2003, no oblast saw an overall improvement in labor market conditions (increased participation rates coupled with lower unemployment rates). The capital, Bishkek, was the only area to see any increase in participation rates, but in tandem with a noticeable increase in unemployment rates. Conversely, only Osh and Talas saw a fall in unemployment rates, but matched by less people looking for a job – most likely, discouraged workers giving up on finding a job and becoming inactive. In the remaining oblasts, labor markets unequivocally turned for the worse. The high variation in employment conditions at a regional level is characteristic for most transition countries (World Bank, 2005).

Employment in low-productivity sectors has increased.

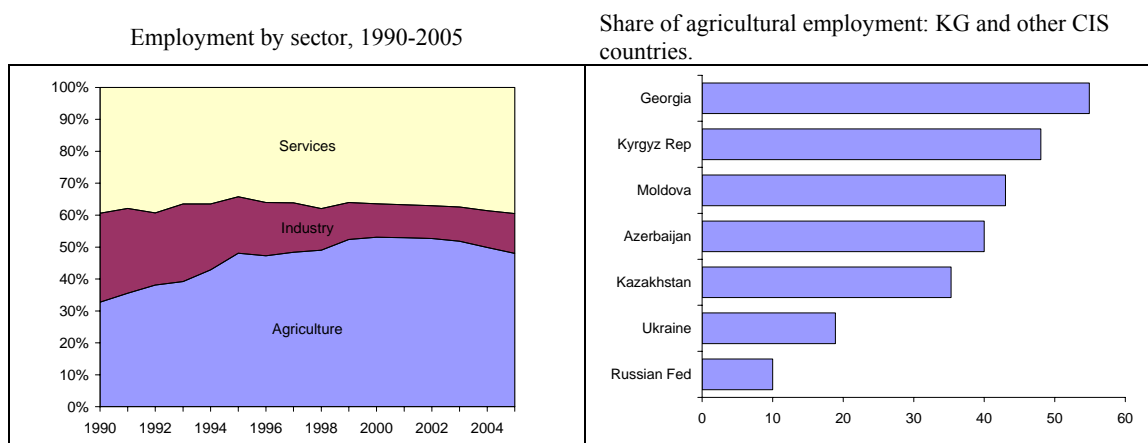
12. **Informality, underemployment and the dominance of low-productivity sectors are the most pressing problems.** The trends in unemployment and labor force participation are not encouraging, but the deterioration is not dramatic. A comparison of the Kyrgyz Republic with its neighboring countries suggests that the situation in Kyrgyz Republic is worse with respect to other CIS countries – participation rates are lower and unemployment rates are higher – but not to e.g. OECD countries, or other non-CIS countries in the ECA region (Table 3). The fact that the Kyrgyz Republic is very much poorer by comparison with the latter groups of countries confirms that the problem rests not only in access to jobs but in their characteristics. Unemployment and inactivity rates are certainly higher for the poor in Kyrgyz Republic, but most of the poor are do hold a job - simply because they live too close to the subsistence minimum to be able to “afford” not to accept any activity that is available. As these working poor are locked up in activities with low productivity and high informality, they reap lower wages and live with more insecure working conditions overall.

Table 3. Unemployment and inactivity is high but not alarming by international comparison...

	Participation rates	Unemployment rates
OECD average (2003)	60.2	7.2
CIS average (2002)	66.3	6.8
Kyrgyz Republic (2003)		
NSC	61.7	8.9
KIHS	64.5	9.9

Source: Estimates based on KIHS 2003 and data from national authorities (Kyrgyz Republic), World Bank data (CIS), and OECD Labor Force Surveys (OECD).

Figure 5. ... but agricultural employment has increased up until recently, suggesting a problem of low productivity employment.



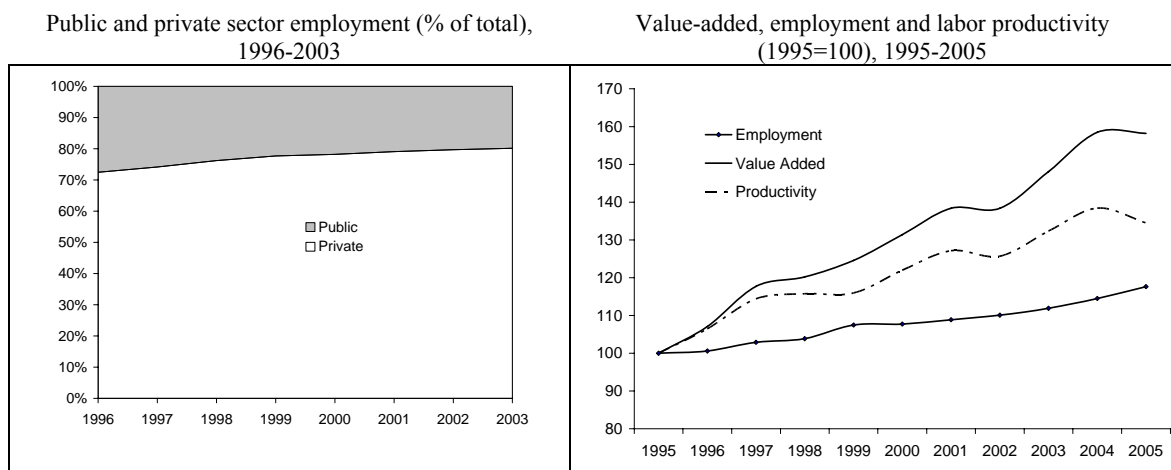
Source: Estimates based on data from national authorities (Kyrgyz), World Bank data (others). Data for 2005 for Kyrgyz Republic, for 2004 for other CIS countries.

13. This situation may have worsened over time. In Kyrgyz Republic as in most other CIS countries, the restructuring process has moved labor out of unproductive industries, but to low productivity activities in agriculture, rather than to more productive sectors in the industrial and services sector. The agricultural sector increased its share of employment from 39 percent in 1993

to 53 percent in 2003 and 48 percent in 2005. (Figure 5). Although agricultural employment has seen a small reduction since 2003, the share of agricultural activities in Kyrgyz Republic is unusually large, even compared with CIS countries.

14. **Private sector employment and labor productivity have increased as a result of restructuring of the economy.** The transfer of production from the public to the private sector is intrinsic to the transition process. Most transition countries have seen an uptake in private sector employment as a result of privatization of state enterprises. Since the reforms of the agricultural sector, the private sector has held an important share of employment in the Kyrgyz Republic (Figure 6). The increase in agricultural activities and informal activities in the services sector at the expense of industrial sector has moved even more people out of the public sector sphere since then, albeit at a slow pace. The private sector now absorbs almost 80 percent of all employment, although these figures are likely to include also state owned enterprises (SOE:s). With economic restructuring, labor productivity growth has increased, reflecting relatively stagnant growth in employment combined with relatively high growth in value-added - “jobless growth”. However, the downturn in productivity in 2005 is due to “growth-less jobs”: the economic collapse (in both agriculture and industry) was accompanied by continued employment creation in agriculture.

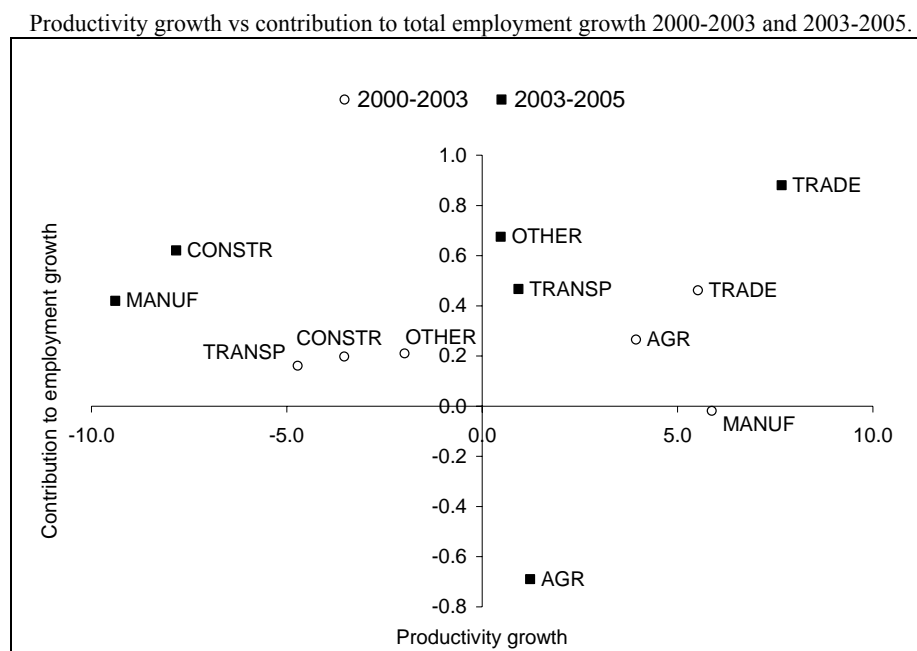
Figure 6: Private sector employment and labor productivity is on an upward trend.



Source: Estimates based on data from national authorities. .

15. **Employment has been growing in some sectors with productivity growth.** The poor are likely to have benefited from a combination of employment and productivity growth in agriculture between 2000 and 2003, in transports between 2003 and 2005, and most importantly in the trade sector in both periods. However, the construction sector, which likely employs a large share of poor workers, has seen high employment growth but not enough output growth (Figure 7). The juxtaposition of construction and agriculture in 2003 and 2005 may tell a story of rural migrants seeking temporal employment in the construction sector as agricultural employment opportunities fell. On the other hand, the fall in productivity growth in manufacturing in 2003-2005 reflects continued hiring (in 2004-2005, manufacturing jobs grew by 8 percent) amidst falling output.

Figure 7. ... But sectors with low productivity growth contributed relatively more to employment growth.



Source: Estimates based on data from national authorities.

16. A decomposition of productivity changes in Kyrgyz Republic since 2000 suggests that labor productivity increased mainly as a result of productivity growth within the agriculture and trade sectors (Table 4). There was a negative effect of people shifting out of agriculture, and a positive effect of people shifting into higher productivity sectors like trade (which also saw high productivity growth) and construction (where productivity growth was negative, however). In all, the trade sector contributed 70 percent of all productivity growth between 2000 and 2005.

Table 4. Labor productivity growth largely took place within sectors, 2000-2005.

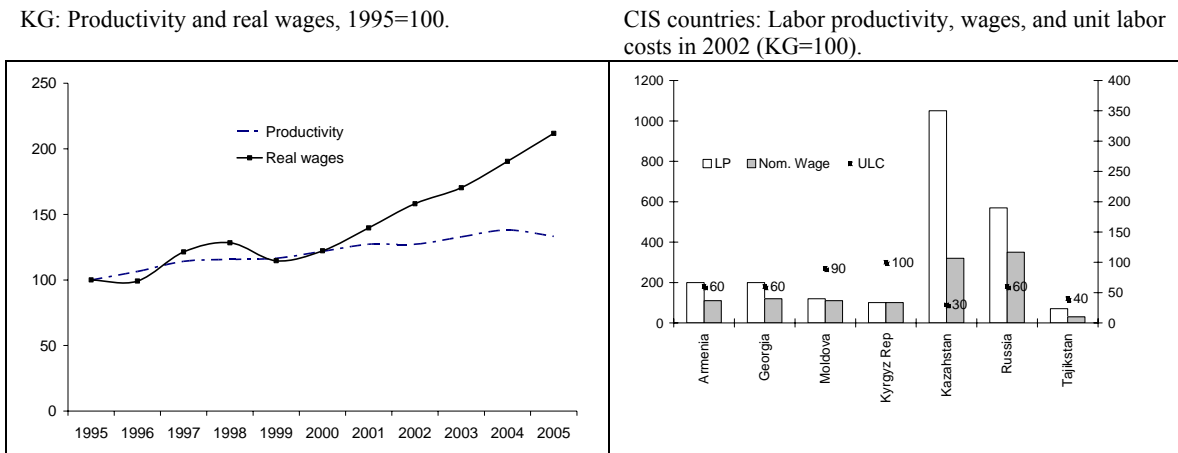
	Within effects	Between effects	Total
		(% of total)	
Agriculture	75	-47	28
Industry	-31	6	-24
Construction	-9	26	17
Trade	46	23	70
Other	3	7	10
Total productivity growth	84	16	100

Source: Estimates based on data from national authorities. The within-sector effect is the change in sector productivity, holding sector share of employment constant. The between effect is the change in employment share, holding the sector's productivity levels constant.

There is a growing problem of competitiveness, and the business environment is not favorable to job creation.

17. **Kyrgyz international competitiveness is harmed by the fact that labor productivity is not sufficiently high to compensate for relatively high wage levels.** Sustainable increases in labor productivity are essential to higher income growth over the longer run. At the same time, should wage growth increase above what is permissible by productivity growth, production costs will increase, which in turn will harm international competitiveness. Over time, lower international competitiveness will affect demand and job creation. While labor productivity growth has been positive, it has been outpaced, by far, by real wage growth. As seen in Figure 8, the gap between real wages and labor productivity growth has widened substantially since the year 2000. Estimates of unit labor costs in Kyrgyz Republic and other CIS countries confirm that the competitiveness of KG is low – i.e. unit labor costs are high – because labor productivity levels are too low relative to productivity levels.

Figure 8: The wage-productivity gap has increased and leaves the Kyrgyz Republic behind other CIS countries.



Source: Staff estimates based on data from national authorities.

Source: World Bank, 2005

18. **This high and increasing wage – productivity gap is also likely to depress labor demand in Kyrgyz Republic.** The high costs of labor depress job creation in the formal sector and contribute to high informality.

19. However, labor demand is also affected directly by indirect labor costs associated with rigidities in hiring and firing workers, and labor taxes, and indirectly, by other costs of doing business that depress firm output capacity. Here, the World Bank/EBRD Business Environment and Enterprise Performance Survey (BEEPS)¹ can shed some light on the situation in Kyrgyz Republic within the ECA region as a whole. While the usual caveats apply about drawing conclusions based on non-representative and small sample numbers and comparing enterprise

¹ The Business Environment and Enterprise Performance Survey (BEEPS) has been developed jointly by the World Bank and the European Bank for Reconstruction and Development. The survey, conducted with over 4000 firms in 22 transition countries in 1999-2000, examines a wide range of interactions between firms and the state and is designed to generate comparative measurements in such areas as corruption, state capture, lobbying, and the quality of the business environment.

surveys across countries, two striking facts emerge from Table 5 below. First, **the percentage of Kyrgyz firms that consider the business environment very problematic is higher than in ECA or the CIS countries on average.** The differences are sometimes quite dramatic: less than half of the firms in ECA as a whole or the smaller sample of CIS countries consider corruption, crime or anti-competitive behavior to be a major obstacle; in Kyrgyz Republic, at least three quarters of all firms find this a major problem to doing business. This is consistent with the Kyrgyz Republic's low international ranking in competitiveness and institutional quality (Box 3.)

Table 5: Kyrgyz firms experience relatively more obstacles in doing business.

Areas of Business Environment	Percentage of Firms that Consider this Area a Moderate or Major obstacle		
	ECA	CIS	KG
Labor regulations	26	18	8
Financing	72	76	87
Infrastructure	33	32	33
Taxes	81	85	92
Policy Instability	69	72	87
Inflation	68	84	97
Exchange rate	55	70	89
Functioning of judiciary	34	27	37
Corruption	49	50	84
Street crime	44	45	83
Organized Crime	41	44	76
Anti-Competitive behavior by other enterprises or the government	47	50	73

Source: Estimates based on BEEPS.

20. Second, however, **labor regulations are not considered to be an important obstacle by Kyrgyz firms**, even less so than in other CIS or ECA countries. This finding is consistent with the results from the World Bank's Doing Business data base as well (Table 6). It may also be a function of the high informality of labor markets, however. Where workers are not registered nor have a binding contract, labor taxes as well as regulations on hiring and firing become unimportant.

Table 6: Labor market regulations are not a major obstacle to business operations.

Indicator	Kyrgyz Republic	ECA Region	OECD
Difficulty of Hiring Index	33.0	34.2	27.0
Rigidity of Hours Index	40.0	50.7	45.2
Difficulty of Firing Index	40.0	37.1	27.4
Rigidity of Employment Index	38.0	40.8	33.3
Non wage labor cost (% of salary)	24.5	26.7	21.4
Firing costs (weeks of wages)	17.3	26.2	31.3
<i>Doing business aggregate: ranking among 175 countries.</i>	90		

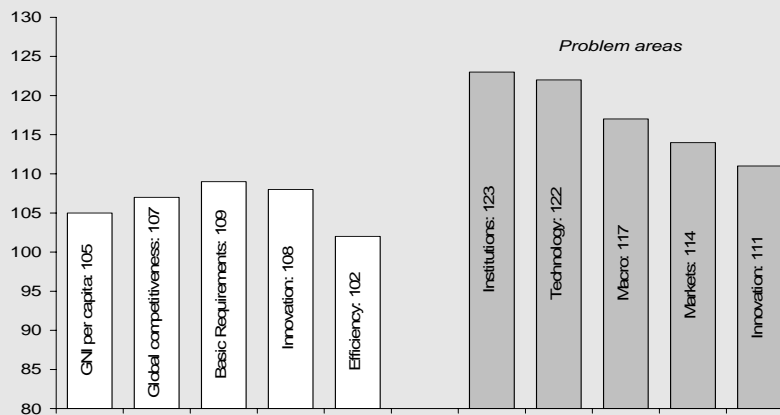
Source: Estimates based on World Bank's Doing Business Database (2006 rankings).

Box 3: Kyrgyz Republic Global Competitiveness.

The World Economic Forum, for its Global Competitiveness Report, provides a competitiveness ranking for 125 countries. Overall global competitiveness is a weighted index of how well a country scores in terms of three areas: (i) Basic requirements: the quality of institutions and infrastructure, macroeconomic environment, and basic health and education; (ii) Economy efficiency enhancers: higher education and training, market efficiency, and technological readiness; (iii) Innovation factors: Business sophistication and innovation.

The Kyrgyz Republic ranks number 107 in total competitiveness, among the twenty lowest countries. While this ranking is not far worse than would be predicted given Kyrgyz low income level, it is much lower than for other CIS countries, including the poorer Tajikistan and the only slightly richer Moldova, which rank 96 and 89, respectively. At a disaggregated level, the poor quality of institutions, low level of technological readiness and the macroeconomic instability have been pulling down Kyrgyz Republic's average level of competitiveness. In fact, out of the 125 countries surveyed, only Chad and Venezuela are considered to have worse institutional frameworks than Kyrgyz Republic.

Box Figure: Rankings: 2007, Kyrgyz Republic. Out of 125 countries.



Source: WEF (2007)

21. **In conclusion**, moderate growth rates have not resulted in an increase in high-quality jobs. Instead, employment has shifted into agriculture and low-productivity services sectors because of lack of opportunities elsewhere. The increase in job productivity in some sectors with rapidly growing employment is likely to have paid off in terms of lowering poverty, however. Finally, it is clear that the Kyrgyz Republic is still struggling with making its business environment more conducive to economic growth.

2.3 Labor Market Profile

22. **The remainder of this paper is based on data from the Kyrgyz Republic Integrated Household Survey (KIHS) from the year 2003.** The survey contains a detailed section with questions pertaining to the labor market situation of household members, which has been explored for the purpose of this paper. Some of the information presented here is included in an

official publication by the NSC, entitled *Employment and Unemployment: results of the Kyrgyz integrated household survey in 2003*.

23. **In 2003, the population reached about 5 million people in Kyrgyz Republic, two thirds of whom lived in rural areas.** The labor force consisted of 2.1 million people, of which 1.9 were employed (Table 7). Some 1.2 million of working age (aged above 15) were inactive, however.² Thus, nearly two thirds of the working age population (64 percent) were active in the labor market and 58 percent were employed; of the labor force, 10 percent were unemployed. Overall, employment rates were higher in rural than in urban areas, both because of lower unemployment rates and higher participation rates. The higher participation rates in rural areas are an unusual feature compared to wealthier countries. Given that poverty is much more pervasive in rural areas, the higher participation rates suggest that subsistence agriculture is a very important feature of rural labor markets.

Table 7: Population, employment and unemployment in Kyrgyz Republic, 2003

	Total	Rural	Urban	Rural share of total (%)
<i>In thousands</i>				
Population	5,037	3,276	1,762	65
Working age	3,348	2,078	1,270	62
Labor force	2,143	1,351	791	63
Employed	1,930	1,244	686	64
Unemployed	212	107	105	50
Inactive	1,206	727	479	60
<i>In percentage</i>				
Employment rates	57.7	59.9	54.0	--
Participation rates	64.0	65.0	62.3	--
Unemployment rates	9.9	7.9	13.3	--

Source: Estimates based on KIHS 2003

The poor and uneducated are worse off in the labor market, especially in urban areas.

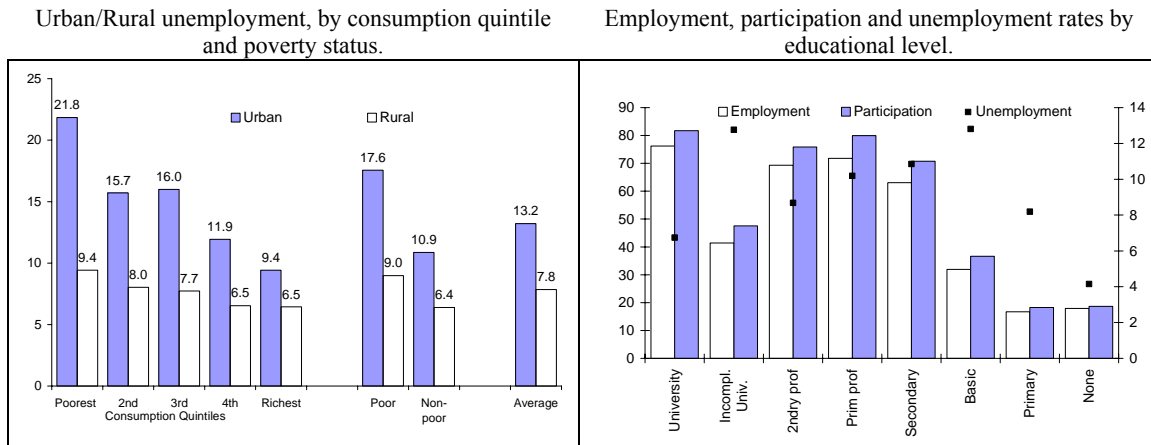
24. **The poor and the uneducated are universally worse off than the non-poor in the labor market, whether in rural or in urban areas.** The linkages are not surprising, of course: the poor tend to be much less educated, and that fact is in itself penalizing them in the labor market – which is why they are poor in the first place. There are important differences between the rural and urban areas, however. Most notably, not only are average unemployment rates higher in urban than in rural areas, but the differences between poorer and richer in urban areas are much more pronounced (participation rates vary much less, however). Thus, unemployment rates for the poorest quintile are more than twice as high as those of the richest quintile (22 vs. 9 percent) while in rural areas the levels as well as range is much smaller (9 vs. 6 percent). (Figure 9.)

25. **As is characteristic for many of the transition countries, more than 85 percent of the working age population have completed secondary education or higher.** Over fifty percent

² Throughout the report, "working age population" refers to the population aged 15 years or more.

have secondary or secondary professional as their highest achieved degree. Those with basic education, with secondary non-professional training, and with incomplete university training, are overrepresented among the unemployed; those with basic or primary education are underrepresented in the labor force, relative to their share of the working age population. Employment rates are highest among those with completed university training, and there is a high premium to professional training, whether at primary or secondary level.

Figure 9: The poor and uneducated are worse off.

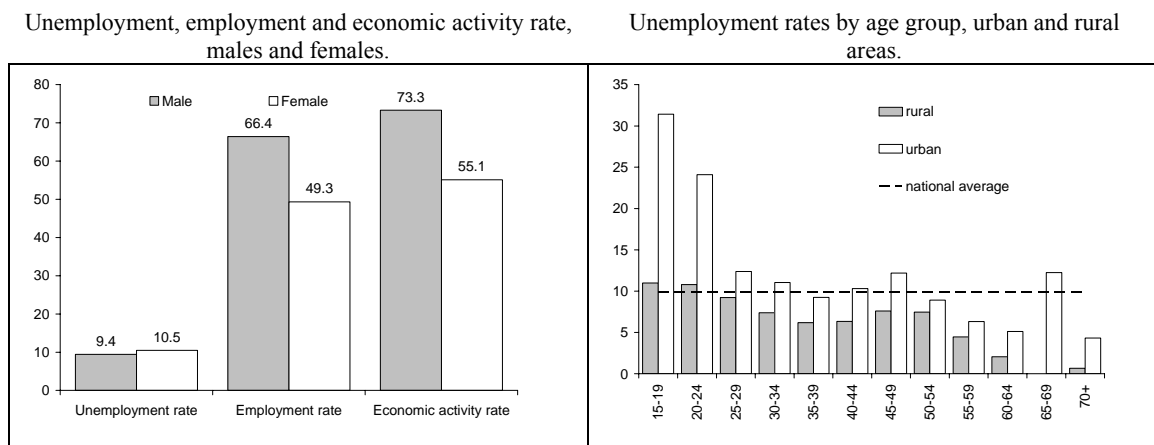


Source: Estimates based on KIHS, 2003. Note. Because the household consumption module has to be merged with the labor market module for calculations regarding poverty, the sample is not identical to that used for general labor market statistics.

Women and young people are at a disadvantage.

26. **Women are clearly finding more difficulties than men in the Kyrgyz labor market. So are the younger workers** (Figure 10). Although women tend to participate less in the labor market, their unemployment rates are also slightly higher than those of men.

Figure 10: Women and young workers have less access to labor markets.



Source: Estimates based on KIHS, 2003.

While women to a larger extent than men are inactive because they are taking care of other family members – children or elderly – the higher unemployment rates hint at a considerable number of discouraged women among the inactive. Young people, especially in urban areas, are also facing much more difficulties in the labor market than other groups. Urban youth aged less than 30 accounts for 13 percent of the total Kyrgyz labor force, but one fourth of all the unemployed.

27. **Ethnic groups of non-Kyrgyz nationality are also disadvantaged in the labor market.** Some two thirds of the working age population are made up of Kyrgyz nationals; Russians (concentrated in the North) make up 15 percent, and Uzbek nationals (in the Southern regions) another 10 percent (Table 8). The remaining groups are a mix of Uyghur, Kazakhs and Ukrainians, but make up less than ten percent in total. Non-Kyrgyz ethnicities seem to be doing less well in the labor market. In urban areas, the differences in employment rates are smaller, except for the group of “others” which have high unemployment rates. In rural areas, however, non-Kyrgyz have lower participation rates and, in the case of Russians and other groups, higher unemployment rates. Overall, the lower employment rates for the Russian group is puzzling, as they have the lowest poverty rates of all ethnic groups in the Kyrgyz Republic.

Table 8: Non-Kyrgyz ethnic groups have lower employment rates, especially in rural areas.

	Share of national working age population	Employment rate	Labor force participation rate	Unemployment rate
<i>Urban</i>	38			
Kyrgyz	21	55	64	14
Russian	9	54	61	11
Uzbek	4	54	60	11
Others	4	47	57	17
<i>Rural</i>	62			
Kyrgyz	47	62	66	7
Russian	6	53	61	13
Uzbek	6	57	60	7
Others	4	52	63	18

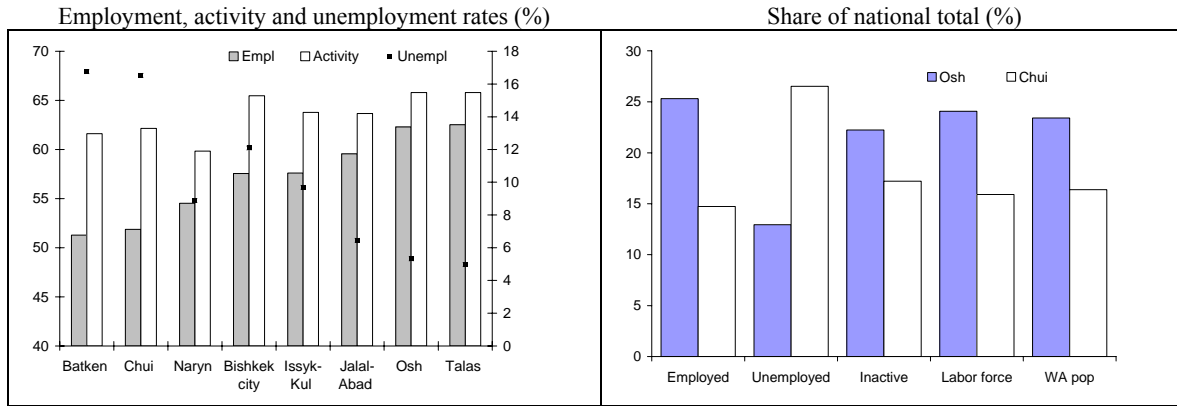
Source: Estimates based on KIHS, 2003.

Labor market opportunities vary across regions.

28. **Location is an important factor that conditions labor market opportunities.** The employment situation varies considerably between regions in the Kyrgyz Republic, and above, we showed that the differences have been accentuated over time. In Batken (in the very South-East) and Chui (surrounding Bishkek City in the north), only just over half of the working age population is employed (Figure 11). Low participation rates and, in particular, high unemployment rates are behind these differences. More than one fourth of the Kyrgyz Republic’s over two-hundred thousand unemployed live in the Chui region, but only sixteen percent of the working age population. The Chui region stands in contrast to the Osh region (mostly rural, but including Osh City), which holds only 13 percent of the unemployed but where 23 percent of the working age population lives. Importantly, regions marked by high unemployment rates, e.g. Bishkek City, do not have higher poverty rates than others. Nor do regions with lower participation rates have the highest poverty rates – a fact that is consistent with the rural dimension of poverty, the higher participation rates and lower unemployment rates in rural areas,

and the importance of informal, low wage jobs especially for the rural poor (World Bank, 2003).³ The regional variation in poverty and labor market outcomes is likely to be a strong motivating factor for migration.

Figure 11. Batken and Chui have the lowest employment rates



Source: Estimates based on KIHS, 2003

Employment: in low productivity sectors and of informal nature.

29. **Low productivity sectors dominate employment.** As discussed previously, the Kyrgyz Republic has become a more agrarian economy since the 1990s. In 2003, the agricultural sector (including forestry, fishing and hunting), absorbed a little less than half of the employed population: two thirds of the rural work force, and nearly twenty percent of the urban work force, have their main occupation in agriculture (Figure 12). In urban areas services are instead dominating, especially trade and public sector⁴. Manufacturing absorbs 14 percent of the urban workforce. In rural areas, services – predominantly the public sector – accounts for only 28 percent. The industrial sector is negligible in rural areas (5 percent of total) and small in urban areas, too (19 percent).

30. **Employment is formalized to a larger extent in urban areas.** Because of the different importance of agriculture, the patterns on self-employment and employment situation differ very much between rural and urban areas (Table 9). In rural areas, as many as two thirds of the population are working on their own accord or unpaid for family members, while in urban areas, 22 percent were self-employed, and virtually nobody was working for family business without compensation. In urban areas, instead, as much as half of the employed workforce was employed in an enterprise or institution, and another 22 percent were employed in another person's household.

³ Inequality levels (Gini-coefficients) at a regional level is positively correlated with unemployment rates (=0.4), and negatively correlated with participation rates (= -0.5), however. (Calculations based on data from national authorities.)

⁴ In what follows, public sector is defined to include public administration, education, and health care.

Figure 12: Agriculture, trade and public sector are the biggest employers...

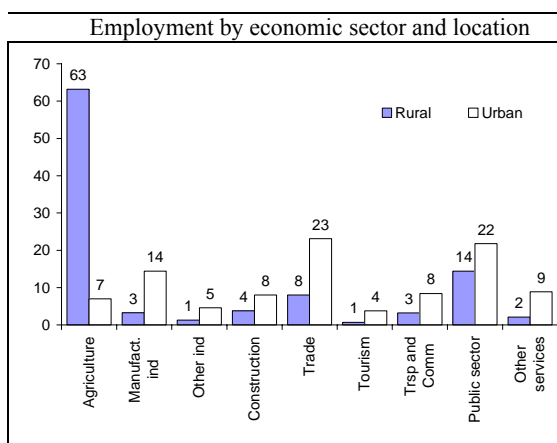


Table 9: ... 7 in 10 urban workers but only 1 in 10 rural workers are employees

	Rural	Urban
TOTAL	100	100
Employees	33	72
Enterprise, institution, organization	23	50
Household work	10	22
Other	67	28
Employers	1	2
Self-employed	33	22
Member of producers co-op (Artel)	1	0
Unpaid family worker	20	1
Personal subsidiary plot	13	3

Source: Staff estimates based on KIHS 2003

31. **Informality is high.** The high share of low productivity activities like agriculture and the importance of household work, self-employment and unpaid family work (in rural areas) also point to the importance of informal sector work in Kyrgyz Republic. The informal sector refers to the share of the economy that escapes the formal legal environment and is therefore not affected by taxation, labor laws, and other enterprise regulations. Informal sector jobs are typically small-scale operations, family and household jobs, but in practice it can be difficult to define informality on the basis of household survey data (Box 4). We define informal employment to include those who work in the informal sector, and those who are informally employed in the formal sector. The first category encompasses those who run, as employers or self-employed, an unregistered firm or activity, or those who are employed in such firms. The second category includes those who are employed in a registered and legal activity, but who are employed under a verbal contract only.

32. Using this definition, **about half of the employment in Kyrgyz Republic is in the informal sector** (Figure 13). As expected, informality is more prevalent in rural areas than in urban areas (54 vs. 39 percent); women are also slightly more prone to work in the informal sector, simply because they are more likely to work in the agricultural sector. Informal employment and its many negative implications – job insecurity, low pay, irregularity of work – are strongly related to the level of education of the worker, and thus also to income levels. As many as 86 percent of employed workers with no education are employed in the informal sector; even those with nine years of completed study (basic education) are to 82 percent informally employed. In contrast, twenty percent of those with university education are employed in the informal sector. While this is obviously a significantly smaller number, it is still relatively large, considering the amount of years in school. Finally, vocational training, at both primary and secondary levels, appears to pay off in terms of formalizing one’s job opportunities. compared to general schooling.

Box 4. Estimating informal employment in Kyrgyz Republic

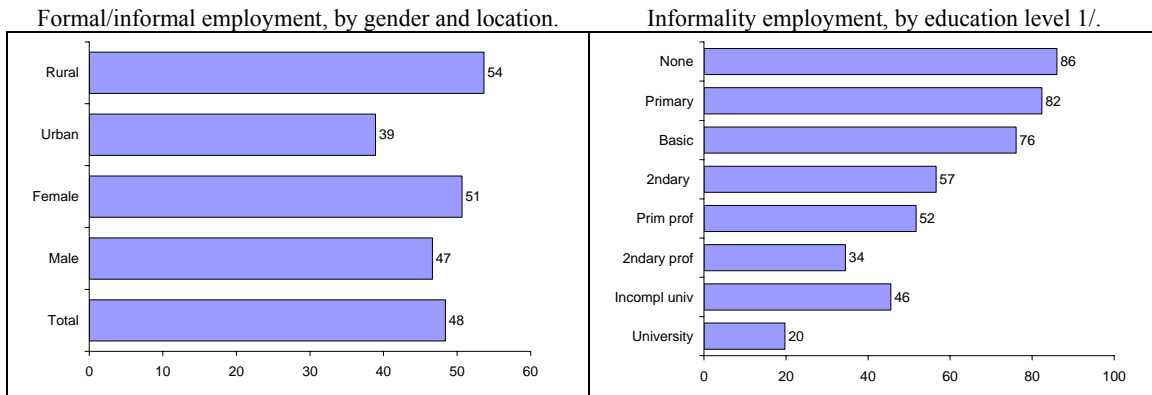
A worker can be informally employed in (at least) two ways: because the work place is of an informal nature, i.e. is taking place in the informal sector, or because the nature of the job is informal. Informal work places would include places that are small-scale operations with few employees, in enterprises that are not registered enterprises, where assets are those of the owner and not the enterprise, household work etc.. Informal employment, on the other hand, would include situations where employment is not based on written contracts and employees are not registered or touch any formal benefits such as mandated sick leave, vacations, or compensation related to employment termination. A person can thus be informally employed also in the formal sector, if the job relation is of an informal nature.

In practice, it is far from straightforward to single out the informal sector within the context of a household survey such as the KIHS.

The NSC uses the characteristics of the production unit as the benchmark: informal sector activities are those that take place in unregistered units as well as all units that have fewer than five employees. This means, however, that all workers that are legally employed (i.e. have a written contract) in smaller units are considered informally employed, irrespective of the fact that they enjoy some form of job security as written down in a formal contract. This method therefore results in very high levels of informality: two thirds percent of all employment is informal.

For the purpose of this paper, we consider as informally employed all those who run or work in an unregistered firm or activity (employed in informal sector) AND all those who work with a verbal contract in registered firms (informally employed in the formal sector). We also consider all unpaid family workers as well as those working in households to be informal workers.

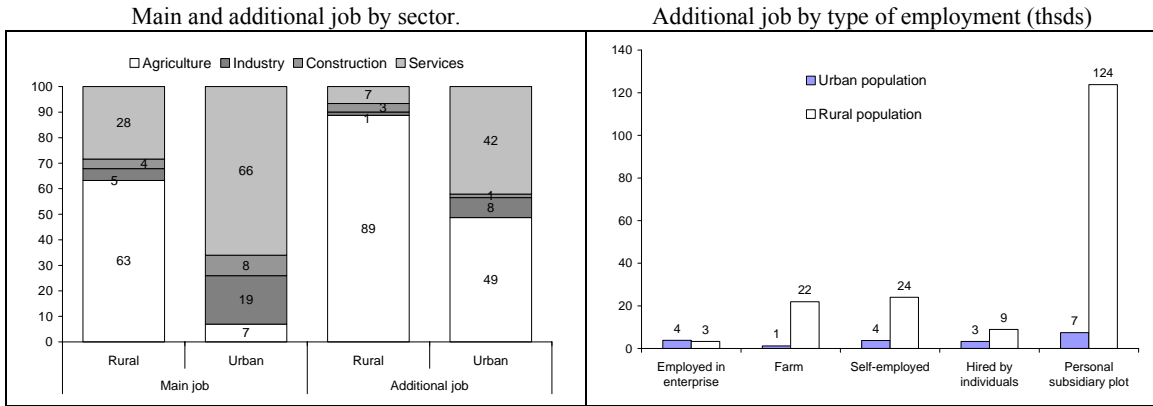
Figure 13. Informality is high and determined by education, gender and location.



Source: Estimates based on KIHS, 2003. 1. University - 4-5 years in university; Uncompleted university - 2-3 years of university; Secondary professional - 9 or 11 years plus 2-3 years of vocational study; Primary professional - 4 years plus 2-3 years of vocational study; Secondary - 11 years of study; Basic - 9 years of study; Primary - up to four years of study.

33. **The agricultural sector provides an important secondary source of income (in kind or in cash) in rural areas.** About ten percent of the employed population held another job in addition to their main occupation (Figure 14). Holding two jobs was much more common in rural than in urban areas (15 vs. 3 percent). Altogether, this speaks of the continued importance of farming for household needs. Of the two hundred thousand people holding a second job, some sixty-five percent were in fact working on their household subsidiary plot. Another ten percent were working on their farm (larger than a subsidiary plot) or somebody else's.

Figure 14. Subsidiary farming provides a secondary source of income.



Source: Staff estimates based on KIHS data.

Alternative measures of unemployment and underemployment suggest hidden unemployment.

34. **Standard definitions of unemployment may hide a large number of discouraged or underemployed workers.** The strict ILO definition of unemployment used in most parts of this paper implies that a person must be out of work, able and willing to work, and actively seeking job. The problem with this indicator is that it may in fact not capture a lot of unemployment, because it does not take into account people who have stopped looking for a job because they have given up hope of finding one. In many transition countries, the economic restructuring has led to a mismatch of skills available and skills needed, which in turn has resulted in long spells of unemployment. Eventually, many people give up hope of finding and simply leave the labor force. As a result, unemployment rates may stagnate or increase slower because there are many discouraged worker that have become inactive, but participation rates (and employment rates) fall.

35. **Long unemployment spells are clearly an issue in the Kyrgyz Republic as well.** Half of all unemployed (using the strict definition) have been looking for work for more than one year; only one third have been looking for less than 6 months (Figure 15). As can be seen, women and rural inhabitants are more likely to be long-term unemployed, as well as older workers. Two thirds of those unemployed older than 50 years had been unemployed for more than one year. Thus, while in general being young and living in urban areas raises the risk of unemployment *per se*, these groups may have higher chances of finding a job fast than older and rural workers respectively.

36. **And as a result, there is an important share of discouraged workers among the inactive, especially in rural areas.** Given the high incidence of long-term unemployment, we would expect hidden unemployment in the form of discouraged workers among the inactive to be considerable (Table 10). And indeed, relaxing the definition of unemployment to include those inactive people who have just given up hope of finding a job increases unemployment rates in the Kyrgyz Republic, from 13.3 to 16.3 percent in urban areas, and from 7.9 percent to 11.9 percent in rural areas. The relative increase is thus larger in rural areas – where the risk for long-term unemployment is more prevalent. Indeed, further analysis shows that (i) most discouraged workers live in rural populous southern areas and in the Chui oblast; (ii) that most of them are poor (59%), and (iii) that most of them (56%) are female workers.

Figure 15. Long-term unemployment is a serious problem in the Kyrgyz Republic.

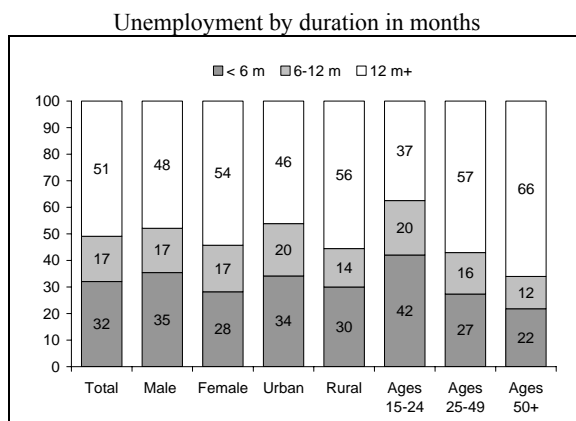


Table 10. There is hidden unemployment among the inactive working age population.

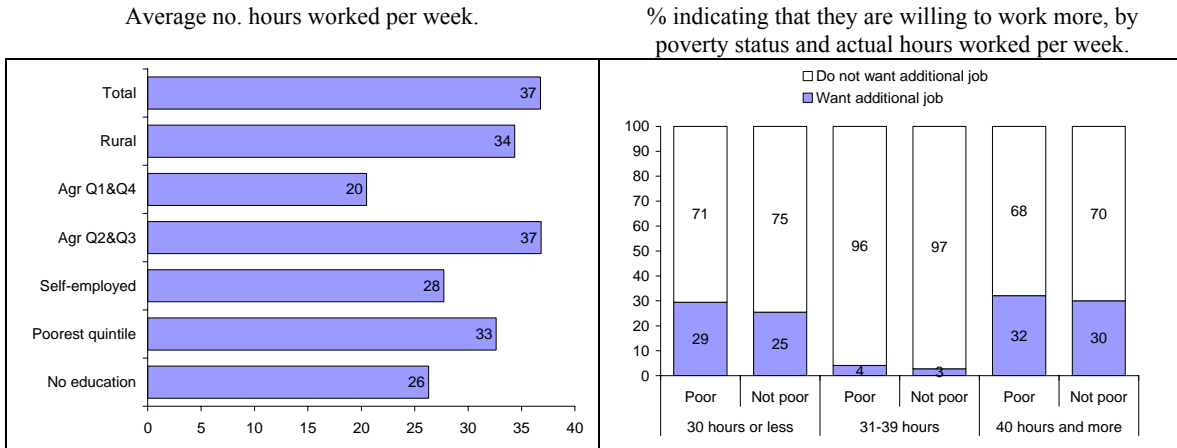
Labor force and inactive, including discouraged workers.

	Total	Urban	Rural
<i>Thousand persons</i>			
Employed	1930	686	1244
Unemployed	212	105	107
Inactive	1206	479	727
o/w discouraged workers 1/	89	28	61
<i>% of labor force</i>			
Unemployment rate including discouraged workers	13.5	16.3	7.9

Source: Estimates based on KIHS, 2003. 1. Includes those that want to work but are not actively looking b/c (i) they despaired to find a job after searching for a long period of time (ii) had no opportunity to find a job (iii) do not know how or where to look for a job.

37. **And an important share of those who are employed work less than they would like to.** Yet, even with discouraged workers included, overall unemployment rates are not extremely high, at 13.5 percent. But many people are under-employed, meaning that they are working less than they would need or like to. One way to look at underemployment is to consider the total number of hours worked. The average number of hours worked in the Kyrgyz republic is around 37 hours per week, including work on main and additional jobs; some 30 percent of workers work less than 30 hours (Figure 16). However, those employed in the agricultural sector, the self-employed, the poor and those with no education, work less hours. In particular, people in the rural agricultural sector work on average less than 50% of the week in low-season. This definition is precarious, however, as it presumes that all people would want and need to work full-time, while in fact part-time work may be an optimal solution. Another way of considering underemployment is the extent to which people would like to work more. Using this subjective measure, the rate of underemployment is also about 30 percent, but refers to all those who would like more work, irrespective if they are already working full-time or more. Surprisingly, there are no stark differences depending on poverty status, that is, the share of non-poor who are interested in more work is almost the same as the share of poor. Of the poor that work less than 31 hours per week, 29 percent would like more work. Thus, underemployment does appear to be an issue in Kyrgyz republic.

Figure 16. A significant share of the workers would like to work more.



Source. Staff estimates based on KIHS data

2.4 Conclusions

38. In sum, while economic growth has resumed, the Kyrgyz labor market has not quite followed suit. A good piece of news is the increase in productivity in some sectors like agriculture and trade, where most of the poor work. As concluded elsewhere, improved conditions in especially the agricultural sector are likely to have lifted a large number of poor out of poverty since the mid-1990s. But the agricultural and low-productivity services sectors cannot be expected to continue to carry the burden of poverty reduction. Now, the fundamental issue will be how to ensure job growth in higher productivity sectors – and, simultaneously, ensure increased productivity growth in all sectors.

39. The previous section has also identified some important differences between rural and urban areas. In rural areas, the viability of agriculture and the opportunity for off-farm activities in the formal sector is more important for poverty than access to work alone. This said, labor markets are also more stagnant in rural areas, and long-term unemployment as well as hidden unemployment among the inactive is more pervasive. In urban areas, unemployment and inactivity are more strongly linked to poverty outcomes, a fact which raises the question as to what specific obstacles the poor face in accessing jobs. Finally, the chapter has also highlighted the fact that women generally have less success in accessing jobs and worse employment conditions than men. Against this background, the subsequent chapters look at job opportunities in rural and urban areas respectively, and at the status of women in the KG labor market.

CHAPTER 3: RURAL POVERTY AND EMPLOYMENT

3.1 Introduction

40. **The rural sector plays a vital role in the economy of the Kyrgyz Republic.** Two thirds of the population is rural, and agriculture accounts for over half of all employment (52 percent) and a third of GDP. Most of the poor – three fourths – live in rural areas. As seen in the previous chapter, the importance of rural activity, including a ruralization of population and employment, was reinforced during the 1990s.⁵

41. **This chapter looks at labor markets and income opportunities more broadly in rural areas.** Ultimately, our interest in labor market outcomes are motivated by the impact those opportunities have for income generation and poverty alleviation. In rural areas, income opportunities depend on more than wage employment. Agricultural productivity and the combination of farm and off-farm activities are critical. The role of agriculture can hardly be over-emphasized - indeed, the vitality of off-farm activities often depend on the vitality of agricultural production and the linkages and spill-offs it provides. And it is clear that agricultural growth and productivity improvements have been the key factor behind poverty reduction in Kyrgyz Republic in recent years.

42. **Against this background, the chapter is organized as follows.** The first section focuses on rural poverty developments, on the role of the farm and non-farm sectors in employment and poverty and on the role of human capital in determining rural poverty levels. The second section looks at additional coping mechanisms for poorer households, including the distribution of assets in rural areas, the extent and impact of migration, and child labor. As in the previous chapter, most employment statistics are drawn from the labor force survey of the KIHS 2003.

3.2 Poverty, farm and non-farm activities in rural areas.

Rural poverty: declining, but less rapidly than in urban areas.

43. **Rural poverty is declining modestly, but inequality is growing.** The share of population in poverty in rural areas declined by some twelve percentage points between 2000 and 2003, and by six percentage points between 2003 and 2005. Yet, a majority of the rural population - 51 percent – were still poor in 2005, and 14 percent could not even meet their basic food needs. In 2004, consumption inequality increased significantly in rural areas (Figure 17).

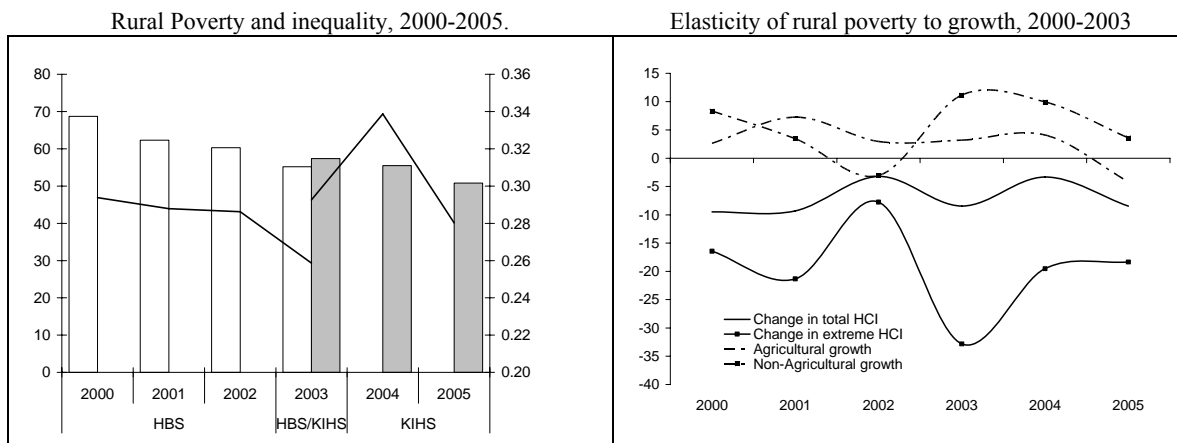
44. **The southern oblasts have higher incidence of poverty.** Poverty continues to be concentrated in the populous rural areas of Southern oblasts where more than two thirds of all

⁵ However, it is possible that the extent of urbanization is underestimated because the issue of residence permit is not keeping up with actual migration into cities.

rural poor live, and the poverty rate is especially high in the rural areas of Batken (83 percent).⁶ In the north, the eastern oblasts – Naryn and Issykkul – have the highest incidence of rural poverty. The high poverty rate in Issykkul oblast is somewhat puzzling since this oblast has relatively better climatic conditions for the farming sector, and a more vibrant services sector, especially the tourism industry built around Issyk-Kul Lake.

45. **Rural poverty responds to agricultural and non-agricultural growth.** As can be seen from (Figure 17), positive agricultural and non-agricultural growth affected poverty levels in the period 2000-2003. But this cycle seems to have been broken especially in 2005, when poverty fell in spite of negative agricultural growth and a down turn in non-agricultural growth. (Extreme poverty was not reduced, however.)

Figure 17: Rural poverty has fallen because of agricultural growth – but is the relationship breaking down?



Source: Estimates based on HBS 2000-02, KIHS 2003-05, and data from national authorities.

46. **Rural residents employed in non-farm activities are better off than those working in farming.** The elasticity of poverty to agricultural growth is explained by the fact that the poor are predominantly employed in the farming sector (Table 11). Among those employed in agriculture, the overall poverty level is 60 percent compared to around 48 percent in the non-farming sector. The difference in overall poverty levels is almost exclusively accounted for by the fact that the share of extremely poor is almost twice as high in the farming sector as in the non-farming sector, while moderate poverty levels (those that are poor but whose consumption levels are above the extreme poverty line) are almost the same.

⁶ The southern oblasts are Batken, Jalalabat and Osh. The northern region comprises Chui, Issykkul, Naryn, and Talas oblasts as well as capital city Bishkek, located within Chui oblast.

Table 11: The non-farm sector offers better earnings opportunities and an escape from poverty.

Sector of employment	% of total rural employed	% of total rural consumption per cap.	Poverty	Moderate poverty % of population	Extreme poverty
Total rural	100	100	55.5	34.9	20.6
Agriculture	63	94	60.1	35.5	24.6
<u>Non-farm sectors</u>	<u>37</u>	<u>110</u>	<u>47.5</u>	<u>33.9</u>	<u>13.6</u>
Industry	8	115	46.6	32.0	14.6
Commercial services	13	106	53.9	41.8	12.1
Public services	16	112	43.1	28.8	14.3

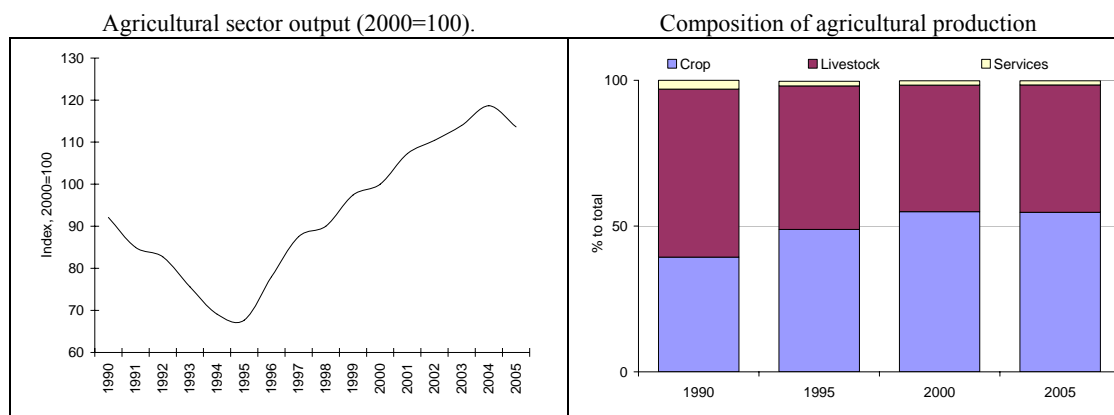
Source: Estimates based on KIHS 2003 and data from national authorities.

The agricultural sector: recuperation since the mid 1990s but labor productivity is only now beginning to improve.

47. **The agricultural sector is critical to overall economic growth, employment and poverty reduction in the Kyrgyz Republic.** Agriculture accounts for one third of GDP, employs 52 percent of the labor force, and the Kyrgyz Republic is a net exporter of agricultural goods. The agricultural sector has experienced important swings since independence, with a strong contraction in 1990-1995, a robust recovery since 1996 (Figure 18) and a recession in 2005. The sector is dominated by small farms that over the period 2000-2003 produced 95 percent of all agricultural output, compared to 89 percent in 1999.

48. **The drastic fall in agricultural output in 1990-1995 was driven by cuts in livestock holdings and productivity declines in crop production.** The fall in livestock holdings was mainly driven by the abolition of subsidies the sector had enjoyed before independence (Figure 18). The combination of price liberalization, deficit of fodder in winter times and increasing cost of other intermediaries, resulted in small ruminants' holdings declining from 10.5 million heads in 1990 to 3.7 million in 1997. The production of food items, such as meat and milk, therefore also declined significantly. The productivity decline in crop production was due to a low level of fertilization of agricultural fields as well as changes in the crop pattern in order to meet food consumption demand. For example, the production of lower value crops like wheat, potato and sugar beats increased, while that of cotton, tobacco and vegetables declined.

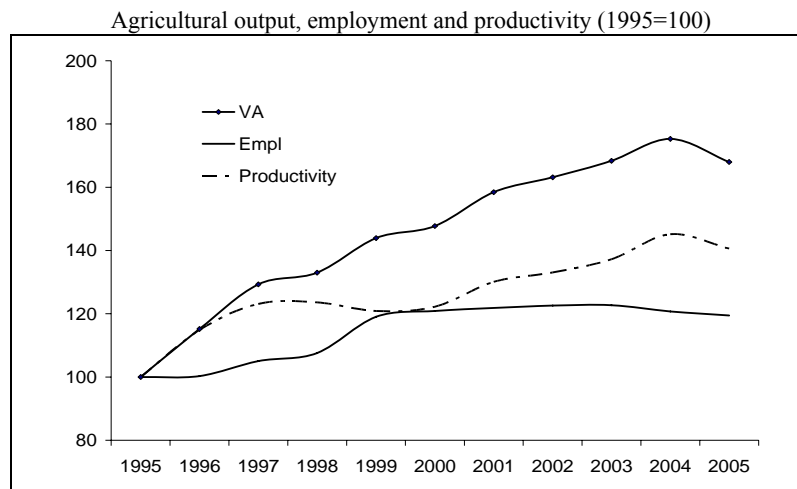
Figure 18: The agricultural sector has grown since the mid 1990s, but livestock holdings have given way to crops production.



Source: NSC, Annual publication on Social and Economic Development 1999-2003

49. **The agricultural sector recuperated in the period 1996-1999, but at the expense of labor productivity. Growth rates were more modest in the period 2000-04.** High growth rates in the period 1996-1999 allowed the agricultural sector to reach its 1990 output level by 1999. (Figure 19). Driven initially by the large inflow of labor displaced in the collapsing industrial and service sectors and by the need of the rural population to ensure food security and physical survival, growth was characterized by a strong emphasis on food crop production, much of it for home consumption and barter. But while output increased, labor productivity declined, due to the large increase in the agricultural labor force, the shift to low-value staple food crops, the widespread lack of farming know-how among the newly privatized farmers, the virtual absence of critical inputs, and the deterioration of physical farming assets (machinery, infrastructure, physical plant). By the end of the 1990s, food security was essentially achieved, and the first signs of significant diversification into higher value crops appeared (Box 5).

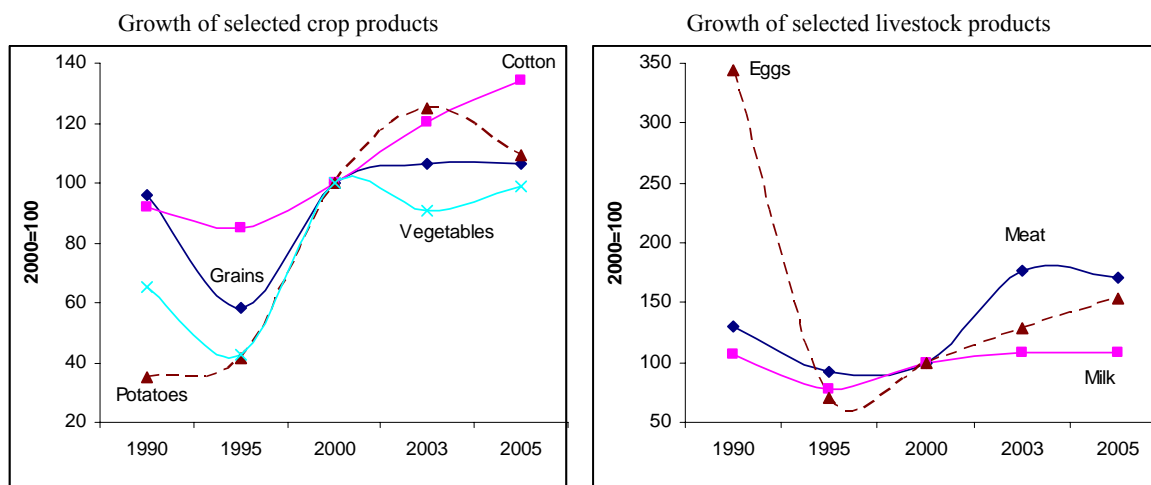
Figure 19: Agricultural productivity has recuperated after 2000.



Source: Estimates based on data from national authorities.

50. **Crop production has led recent agricultural growth.** In the following five years agricultural growth was modest, reaching about 4 percent annually. The political events of 2005 envisaged negative growth for the first time since 1996. Crop production now accounts for about half of all agricultural production. Agricultural labor productivity has been recuperating rapidly, as employment growth has leveled out and agricultural reforms have been paying off. Most of the major crops are showing improved productivity and there is a tendency of allocating more land for commercial agricultural products, such as cotton and tobacco. The role of livestock production remains important in supplying food products for the consumer market, however (Figure 20).

Figure 20: Growth of selected agricultural products, 1990-2005



Source: Estimates based on data from national authorities.

Box 5. Kyrgyz Republic: Agricultural Policy Update. Main conclusions and implications for rural labor market analysis

In the early 1990s the Kyrgyz Republic was a leader among Central Asian countries in undertaking agricultural reforms. Among notable elements of the agricultural reform were successful land reform, privatization of large agricultural entities, price liberalization, and credit system reform.

The defining characteristic of the recent agricultural growth has been the reduction in subsistence food orientation and the emergence of commercially minded peasant farms who managed to improve crop yields with relatively low input use.

On-farm growth was also a significant driver for the increase demand for non-farm goods and services, stimulating rural non-farm growth and employment. Following a successful land reform in the late-1990s, prerequisites for a land market were created. Though sales of land were permitted since 2001, some portion of transactions held in regions was related to economic distress and migration.

Key agricultural strategy proprieties include the completion of land reform (mainly in the North), restructuring of public agricultural services, and a shift of public expenditures toward support for private commodity markets. Continued productivity growth in the farming sector is essential for the sustainability of future agricultural growth.

Source: *Kyrgyz Republic: Agricultural Policy Update*, World Bank, 2004

The poor: underemployed in farming but non-farm opportunities are few.

51. **One third of the rural workers are employed in non-agricultural sectors, mainly in services.** In spite of increasing productivity in the agricultural sector, rural households that are engaged in non-farm activities as their main job are better off in terms of poverty outcomes compared to those involved in farming only.

52. **Poor rural households tend to have more people to support with fewer employed and less hours of work; they also tend to rely predominantly on the farming sector.** Table 12

shows households' labor market characteristics for 2003 in rural areas, by consumption quintiles⁷. As seen, poorer households stand out in several ways: larger households, significantly higher dependency rates, higher unemployment rates, less hours of work per week, and a significantly higher share of employment in farming.

53. **Underemployment is a key issue for employed in rural areas, but non-farm job opportunities are few.** As seen in Chapter 2, compared to urban households, rural residents tend have a lower level of unemployment, since having some activity in a small plot of land could be enough to be counted as employed. However, long-term unemployment as well hidden unemployment was also shown to be higher than in urban areas. These difficulties are exacerbated by the seasonal pattern of rural activities which leads to an uneven workload during the year. Average number of hours worked per week during off-season (Q1 and Q4) is around 20 hours per week - i.e., half of the week rural households just do not have any activity. Yet, only about 14 percent of employed in farm sector are able to secure an additional job, and virtually only in the agricultural sector, which points to the low dynamism of the off-farm sector.

Table 12: Poorer households have unfavorable labor market indicators, 2003.

	Consumption Quintile					Total
	Bottom	Second	Third	Fourth	Top	
Average number of people						
Household members	6.2	5.4	5.0	4.2	2.9	4.7
Children	2.5	2.0	1.6	1.2	0.5	1.6
Pensioners	0.5	0.5	0.6	0.5	0.7	0.6
Working age members	3.0	2.8	2.6	2.4	1.6	2.5
Inactive	0.9	1.0	0.8	0.8	0.5	0.8
Unemployed	0.3	0.2	0.2	0.1	0.1	0.2
Employed	1.8	1.6	1.7	1.5	1.0	1.5
<i>in farming, % of employed</i>	75	59	60	53	55	61
<i>in informal sector, % of employed</i>	60	53	56	47	62	55
# of hours worked per week	24	31	32	34	36	31
Household ratios						
Dependents to working age members	98	91	84	72	73	85
Employed to total members	29	30	33	35	35	32
Unemployed to total active	15	13	8	8	8	11

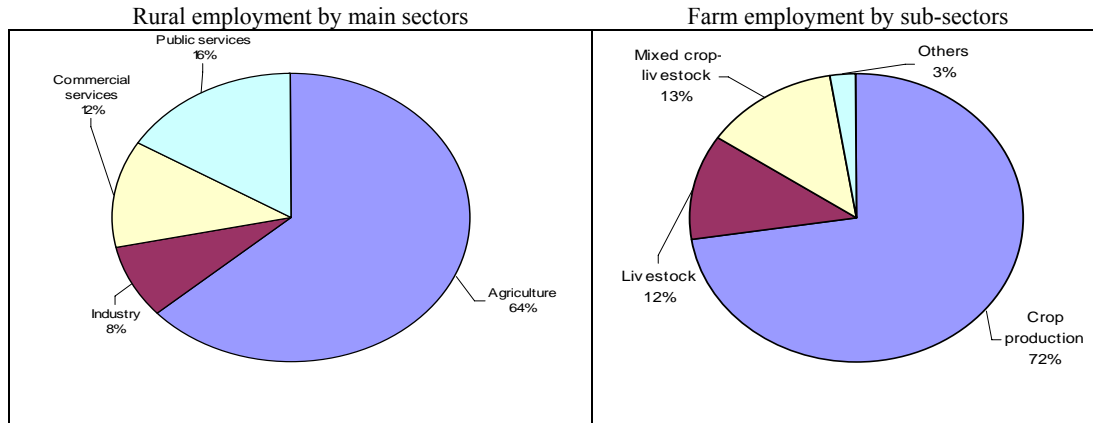
Source: Estimates based on KIHS 2003.

54. **Most rural employed work in the farming sector, where crop production is dominating.** Farm employment accounts for two thirds of all rural employment (Figure 21, left panel). Most on-farm employed are involved in crop production. Livestock and mixed crop-livestock production takes about a quarter of all employed (Figure 21, right panel). Crop-production, however, has a lower productivity level than other sectors. Within rural non-farm activities, public services provide most of the jobs, the main activities being education, health

⁷ The labor indicators presented in Table 12 are for 4th quarter of 2003. Since the labor force survey module is based on a quarterly frequency, there were cases during all four quarters when a person was employed in one quarter, in others was unemployed or inactive. Therefore, it was possible to merge only one quarter data from LFS module to have one-to-one household match with poverty module. Compared to yearly averages, the 4th quarter will give higher inactivity and unemployment figures due to the seasonal production pattern in agriculture.

care and public administration sectors. Commercial services and most significantly the trade sector, provides jobs for around 12 percent. Industry, mostly mining, provides jobs for the remaining 8 percent.

Figure 21: Distribution of the farm and non-farm employment of rural residents



Source: Estimates based on KIHS 2003

55. **Labor income is the most important source for rural households followed by crop and livestock sales.** Wage earnings are the most important source of income among rural households, though slightly less so for the poorest households than for households in the second, third and fourth quintiles (Table 13). More than a half of the rural households rely on crop and livestock sales. Richer and poorer households receive transfers, but from different sources. Richer households tend to be recipients of pensions to a higher degree – and only fourteen percent of the richest households receive public transfers. In contrast, only one third of the poorest households receive pensions, but a majority receives some public transfers. In absolute terms, farm households on average receive more pensions income than (the richer) non-farm households while the amount of social transfers is more or less the same.

Table 13: Importance of income sources for rural households

Source of Income	Consumption Quintile						Farm soms per month	Non-farm
	Poorest	2	3	4	Richest	Rural		
	<i>Percentage of households receiving this income</i>							
Income Earned	77	85	80	82	69	79	832	1,730
Crop & livestock sales	53	54	59	61	55	56	744	387
Pensions	36	34	44	44	47	41	280	204
Social Transfers	53	44	38	27	14	35	58	29
Private Transfers	49	34	51	45	52	46	141	154
Other Income	28	28	26	27	32	28	173	232

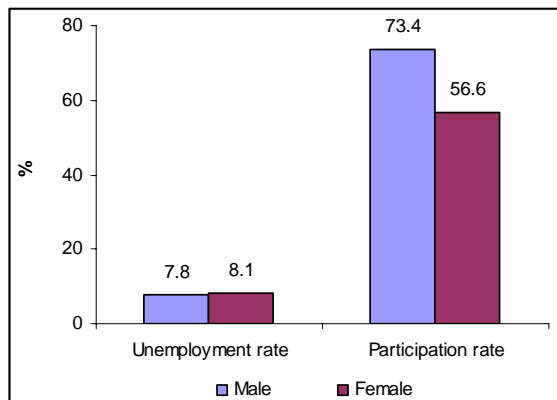
Source: Estimates based on KIHS 2003

Rural women workers: lower participation rates, less and less paid work.

56. **The economic activity of women in rural areas is low, but the unemployment rate is the same as for men.** Gender inequality in employment is persistent in rural areas. As more households turned to small-scale farming, female participation rates – reflecting non-household work - have declined. In 2003, 74 percent of working age men were active in the labor market, compared to 57 percent of working age women; yet, unemployment rates for both genders were about the same, 8 percent (Figure 22). The unemployment rate is exceptionally high among women in Batken, where 21 percent are looking for job, and in Chui oblast (16 percent).

57. **Women are underrepresented in agriculture, industry and commercial services.** Low female participation rates explain the employment inequality in agriculture, industry and commercial services. Non-commercial services including mainly education and healthcare institutions, is the only sector that provides more jobs to women than to men (Table 14).

Figure 22: Women are worse off in rural labor markets...



Source: Estimates based on KIHS 2003

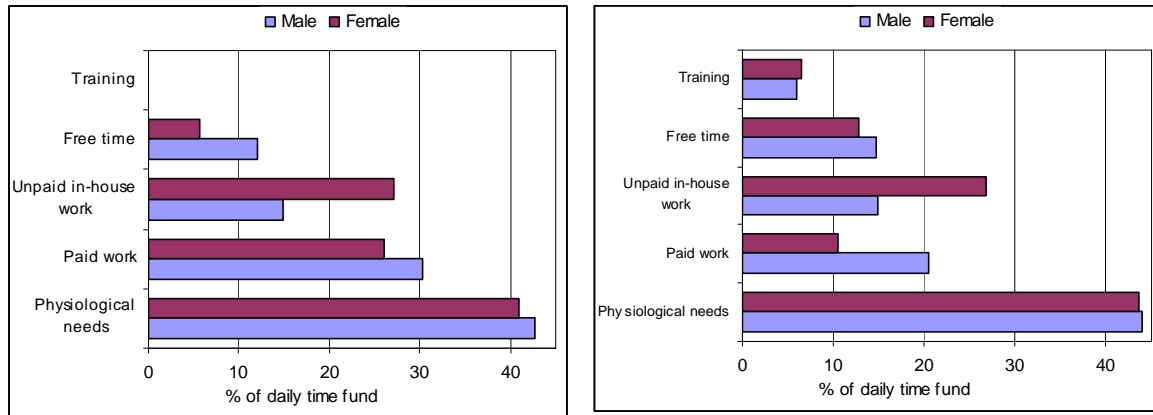
Table 14: ... and are disproportionately concentrated in non-commercial services

	Rural residents employed	% of employed within sectors	share of women, %
Total	1,244	100	44
Agriculture	787	63	44
Industry	105	8	22
Services			
Commercial	150	12	43
Non-commercial	203	16	55

58. **Instead, women spend more time in unpaid in-house activities.** As Figure 23 demonstrates, the time allocation of men and women changed significantly between 1990 and 2003 (UNDP, 2004). Most importantly, the time allocation for paid jobs dropped by half for women and by one third for men, meaning more time spent inactive as unemployed (free time) or in training. The time allocated to housekeeping and in other in-house activities was and remains traditionally high for women.

Figure 23: Women’s share of paid work has fallen drastically.

Distribution of daily time among rural households, 1990 and 2003



Source: UNDP (2004)

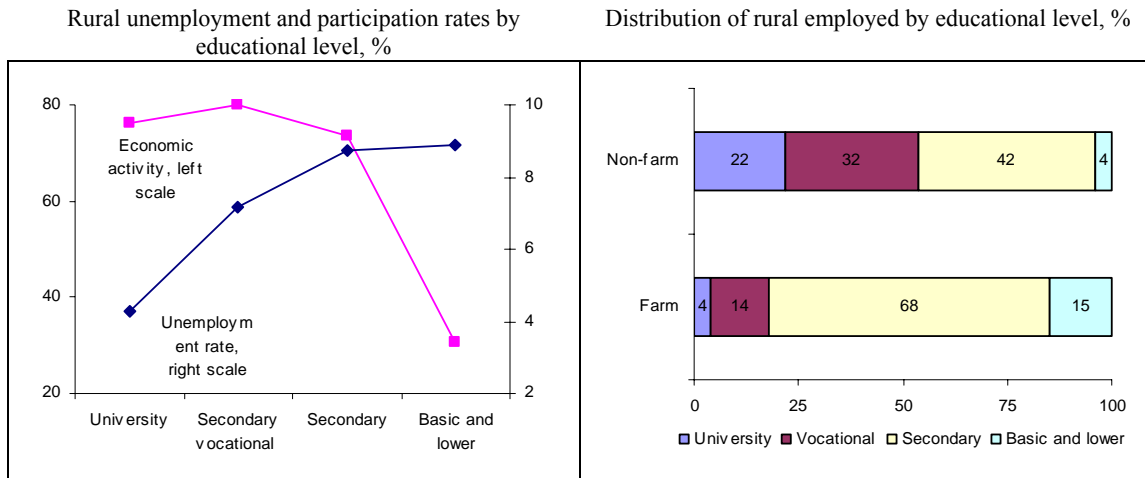
Education: less impact than expected on poverty.

59. **Higher and professional education positively affects rural non-farm employment and lowers unemployment rates.** Education is one of the important drivers of economic growth and poverty reduction. But because non-farm opportunities are limited in rural areas, education could, possibly, have a limited effect on job opportunities. This is not the case, however: unemployment rates are lower and participation rates are higher for those who have university degree or vocational education (Figure 24). Those with only primary education have the highest unemployment rates and the lowest participation rates⁸. Most of the rural labor force – 59 percent – has finished education at secondary levels, but no more. Importantly, acquiring at the most secondary levels of education leads to significantly higher participation rates than for lower levels, but unemployment rates are high for this category.

60. **Non-farm employed workers are better educated.** Unsurprisingly, most university and vocational educated are concentrated in non-farm activities, accounting for 54 percent of all non-farm employed. Most of these groups have jobs in education, healthcare, local administrations and trade sector. The proportion of employed with secondary education in farming is 68 percent, while the share of those who have university degree or vocational training is only 18 percent. General secondary education is not sufficient to pull rural workers out of small scale and vulnerable agricultural activities that mostly do not require specific skills.

⁸ These extreme unemployment and participation rates are partly explained by inclusion of students still studying in schools and older generation population that mostly have less years of education.

Figure 24: Education is important for employment outcomes, 2003



Source: Estimates based on KIHS 2003

61. **Higher educational level provides a better economic position – but the effects of higher levels of education on poverty levels are still surprisingly low.** Education is an important determinant of income levels. As Table 15 demonstrates, employees with university degree have larger portion of their income coming from wage earnings. The poverty level of employed with university degree or vocational education in non-farm sector is 36 and 41 percent respectively, compared to 48 percent in average. In the farming sector university degree holders tend to work more, but it is not the case in non-farm activities, with less educated people working more. Overall, Table 15 still suggests surprisingly high levels of poverty for those with university education in rural areas, however. Ten percent of the employed with university education live in extreme poverty.

Table 15: Education raises earnings but university is still no guarantee for escaping poverty.

	Wage income <i>% to total income</i>	Poverty level <i>% of population</i>	Extreme poverty level <i>% of population</i>	Number of hours worked <i>hours per week</i>
Farm	37	60	25	30
University	45	44	11	32
Vocational	37	50	20	30
Secondary	38	64	26	30
Basic and lower	32	57	24	27
Non-farm	63	48	14	43
University	66	36	9	40
Vocational	61	41	9	42
Secondary	63	58	20	45
Basic and lower	65	46	9	42

Source Staff estimates based on KIHS 2003

3.3 Coping mechanisms in rural areas – access to assets, migration, and child labor.

Assets: more people hold land, but few have access to capital equipment or formal credit markets.

62. **Agricultural land is accessible for most rural households, but in the poorer south, households have smaller plots.** Earlier analysis showed a rapid increase in the number of households with access to land, from less than 50 percent in 1998 to more than 75 percent in 2001 (World Bank, 2003). According to 2003 data, virtually all – 96 percent – of households now have land holdings (Table 16). Most of these are small plots of less than 2 hectares. Consistent with poverty patterns, households in the Southern region have on average plots of smaller size than Northern households. More than 21 percent of North households own land with more than 2 hectares, while in South less than 10 percent of households own plots of this size.

Table 16: Most have access to land, but plot sizes are small, especially in the South.

Distribution of households by plot size and region.						
Region	Land area					Total
	0 ha	0<ha<2	2<ha<5	5<ha<12	12<=ha	
Total	4	81	12	2	0.5	100
North	6	73	18	3	0.6	100
South	3	87	8	1	0.5	100

Source: Staff estimates based on KIHS 2003

63. **Livestock holdings are becoming concentrated, however.** As the livestock sector has contracted, fewer households now hold cattle (Table 17). In 2003, half of rural households held cattle with an average herd size of 2.6 heads, while in 2001 only a quarter of rural households did not have cattle. Similar trends are noticeable with small ruminant holdings with only a third of rural households holding this type of livestock. Average herd size is relatively low: 12.5 heads per rural household that have any ruminant. The small size of land plots in South oblasts explains the fact that more households in South are engaged in raising livestock. In the North region a quarter of households are involved in livestock production, while in South – about 36 percent of all rural households.

Table 17: Distribution of cattle and small ruminants by household (%)

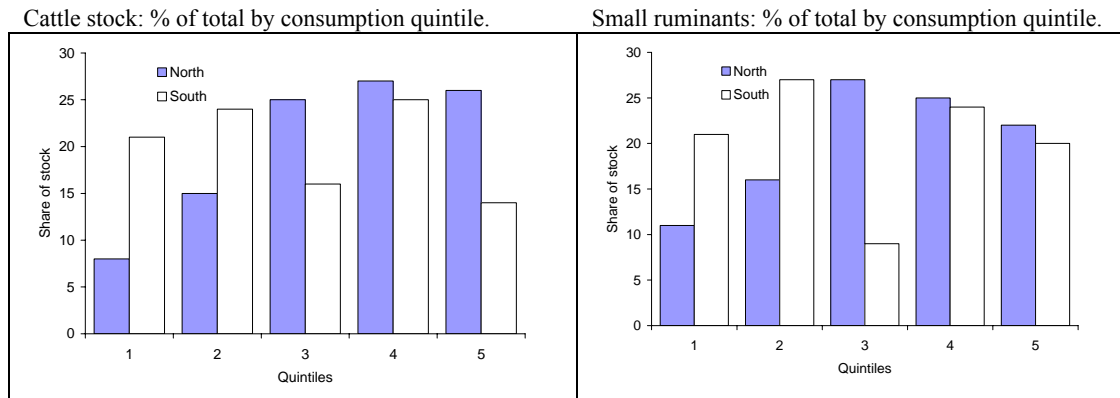
Region	Cattle herd size					Total
	0 head	1 head	2-6 head	7-11 head	> 11 head	
2001, total	25	53	17	4	0.9	100
2003, total	51	15	33	0.8	0.6	100
North	56	17	24	1.0	1.0	100
South	46	13	40	0.6	0.4	100

Region	Small ruminants herd size					Total
	0 head	1-9 head	10-24 head	25-59 head	> 59 head	
2001, total	65	5	7	13	10	100
2003, total	67	17	12	3.2	0.5	100
North	72	14	11	2.3	0.5	100
South	64	20	12	3.8	0.6	100

Source: World Bank, 2003 (based on 2001 household budget survey data), staff estimates based on KIHS 2003. Note that because of different sampling, the HBS and the KIHS are not entirely compatible.

64. **The concentration of livestock is taking place primarily in North.** A look at the concentration of livestock within consumption groups suggests a strong difference between the North and the South (Figure 25). In the North, livestock is owned mostly by richer households: the two top quintiles own 53 and 47 percent of the total stock of cattle and small ruminants. Livestock ownership is more evenly distributed in South. This fact is partly explained by availability of land for crop production and difference in poverty coping mechanisms of rural population in north and south regions.

Figure 25: Concentration of livestock by consumption quintiles



Source: Estimates based on KIHS, 2003.

65. As noted in existing studies, **the farm sector suffers from low access to capital equipment** (World Bank, 2003). Existing machinery tends to be both old and inefficient as well poorly suited to the scale and character of today's private farms. KIHS shows that only 2.7 percent of rural households⁹ owned a tractor or any other agricultural equipment, while 9 percent

⁹ All rural households, indifferent of the sector of main activity (crop or livestock production)

of households owned a horse (Table 18). The remarkably low capitalization points to the small-scale/subsistence farming nature and low commercialization of Kyrgyz agriculture.

Table 18: The farm sector is undercapitalized.

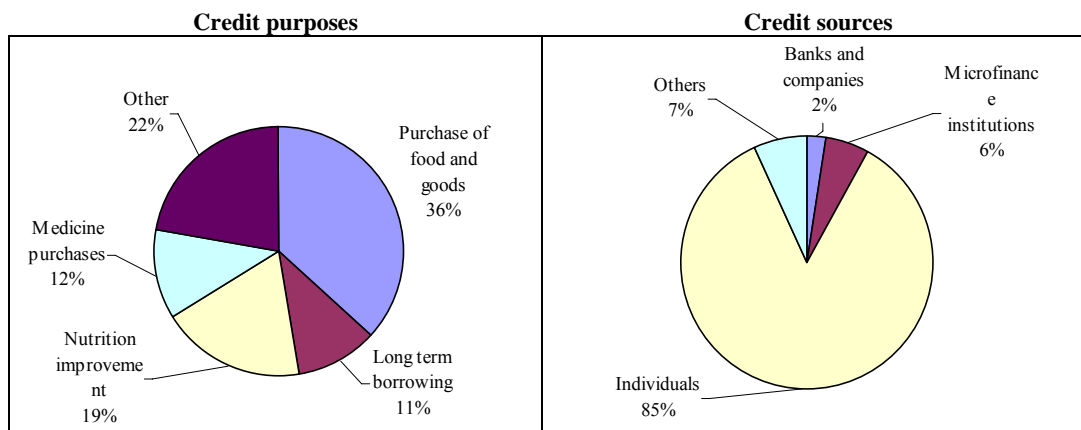
	Consumption quintile					Total
	1	2	3	4	5	
Tractors and other equipment	2.9	2.9	3.9	2.7	1.2	2.7
Horses	5.9	10.8	14.2	9.2	5.6	9.1

Source: Estimates based on KIHS 2003

66. **Only a quarter of rural households are involved in credit market.** Experience from Asia and elsewhere has shown that improved access to credit is a very effective tool for poverty alleviation. In the past few years, the Government and foreign donors have been building conditions to deliver financial resources to rural population in the Kyrgyz Republic. Though some progress was achieved particularly through the growth of credit unions and microfinance organizations, demand for affordable financing appears unsatisfied. As the 2003 household survey shows, only 27 percent of all rural households were engaged in some form of borrowing with average annual loan size of 5 thousand *soms*. Poorer households have less access to credit: around 23 percent of households in the first quintile group were borrowing funds compared to a third of households in the 5th quintile group.

67. **Informal credit sources play a dominant role in rural area and most borrowings are made to cover current expenditures.** Credit is overwhelmingly used for short-term consumption smoothing rather than investment (Figure 26). Two third of households-borrowers took loans to cover day-to-day expenses, such as purchase of food, goods and medicines. Borrowing for long-term purposes, such as construction, purchase of houses and education expenses, accounts for only 11 percent. Moreover, as many as 85 percent of households borrowed from individuals. Banks and finance companies were source of credit for only 2 percent of rural households, while microfinance institutions provided loans for only 6 percent of all households that made borrowings.

Figure 26: Rural borrowing is made for current expenses and primary source of credit are households



Source: Staff estimates based on KIHS 2003

Internal and external migration.

68. **Migration has become an important feature in the Kyrgyz economy**, bringing in important external resources and serving as a coping mechanism for poorer households. Rural areas, because of low income levels and lack of diverse job opportunities, are the major source of internal and external migrants in the Kyrgyz Republic. Both forms of migration, internal (predominantly from rural and secondary urban areas to Bishkek city and surrounding areas in the Chui oblasts) and external (mainly to Russia, Kazakhstan, and other neighboring countries), have an important impact on the labor market, poverty and economic growth. While data is scarce and unreliable, a recent World Bank study noted that difficulties to make ends meet were a major impetus to external migration (Box 6).

69. Official data suggest that internal migration reached a peak in 1994-1998, with some 100,000 migrants per year, but fell between 1999 and 2003, with some 50,000 people – 1 percent of the population - changing their place of residence each year. Only Bishkek city and the Chui oblast saw in-migration, and all other oblasts had negative balances. This shows clear direction of labor flows from mostly rural peripherals into the economically developed capital city and relatively land abundant Chui oblast (Figure 27). According to the official data, both Bishkek and the Chui oblast gained 34 thousand people as a result of migrants' inflow in the period 1999-2003. These data are based on the administrative records, however, and the number of internal migrants is likely to be considerably higher, as is the gravitation towards urban centers. New established settlements around capital city are mainly occupied with internal migrants with most of the residents not being appropriately registered¹⁰. Based on the KIHS 2003, around 9 percent of Bishkek population was not registered.

Box 6. External migration – a survey of return migrants

There is no systematic recording of the number of labor migrants and no comprehensive estimation system for workers' remittances in Kyrgyz Republic. Lacking such key data, some qualitative features of labor migrants have been explored. A study conducted by the World Bank in summer 2005 surveyed return migrants – external migrants who had returned home – in the Kyrgyz Republic. The survey covered around 1400 individuals representing all the oblast. Clearly, while return migrants are an obvious target group for these kinds of investigations, they also risk making up a biased sample: they do not represent current migrants, and they may share specific characteristics which made them return home, e.g. less success on foreign labor markets.

With this caveat in mind, the results show that

- Migrants predominantly went to work in substantially richer countries. Two thirds had worked in Russia, and another 22 percent in Kazakhstan: countries whose average income is more than eight and six times that of the Kyrgyz Republic.
- Unemployment and low income were a major impetus to migration. Some 24 percent of the surveyed migrants were unemployed before they left the country, and 19 percent were employed in agriculture. 55 percent of surveyed earned less than 50 US dollars per months before departing abroad.
- Migration was related to poverty. 25 percent of respondents indicated that 'it was difficult to provide the family with basic foods' and 32 percent indicated that they 'could afford food, but

¹⁰ As noted in the World Bank Poverty Assessment (2003), large internal migration inflows resulted in the emergence of new living areas in the periphery of Bishkek – the so-called 'novostroiki'. Today there are 26 such settlements with estimated 200 000 people, but the real number is higher due to lack of residence permission for a large portion of residents. The population living there is mostly poor.

had difficulties to pay for utility bills and buy clothes’.

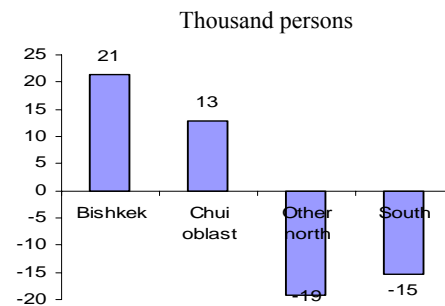
- Migrants were mainly employed in low-skill activities. Abroad, most of the migrants worked in construction (39 percent) and trade (38 percent). Only about 10 percent were employed in white collar activities.
- Even so, however, wage differences allowed migrants to earn considerably higher income: two third of them earned at a minimum 200 USD per month, while in the Kyrgyz Republic this wage was accessible to only 5 percent of respondents before leaving.

Source: World Bank (2005), *Labor Migration from the Kyrgyz Republic*, draft analysis of the returned migrants’ survey conducted under the regional study ‘Enhancing Gains from International Migration in Europe and Central Asia’

Table 19: Three episodes of internal migration

	1989- 1993	1994- 1998	1999- 2003
Number of migrants ('000)	220.3	495.2	145.3
Of which, % share			
Internal migrants	77.3	83.9	81.0
From other countries	22.7	16.1	19.0

Figure 27: Net internal migration balance 1999-2003



Source: Estimates based on data from national authorities.

70. **Internal migration is putting pressure on urban labor markets.** Since migrants tend to be younger than the population in general, migration creates an asymmetry in the rural/urban demographic structure, increases demand for public services, puts pressure on housing prices, and creates tensions in urban labor markets. The comparatively high unemployment rates in Chui and Bishkek City are witness to these pressures.

71. **External migration is becoming an important source of income growth.** Broad estimates suggest that there are some 500,000 Kyrgyz workers abroad (around 23 percent of the total labor force). Of these, some 300,000 are in Russia and around 50,000 in Kazakhstan, although the latter figure could be twice as high depending on season. The majority of migrants are from the rural south, including Osh, Jalal-Abad and Batken provinces. Workers’ remittances increased ten-fold from 30 million dollars in 2002 (2 percent of GDP) to 331 million dollars in 2005 (14 percent to GDP) (Table 20). These numbers do not reflect a ten-fold increase of external migrants, however, but more likely a combination of more migrants, improved statistical coverage and the introduction of new payment systems (like Western Union) for money transmission.

Table 20: Workers' remittances, 2002-05, million US dollars

	2002	2003	2004	2005
Workers' remittances, net	28	65	164	304
Inflows	30	70	179	331
Outflows	2	5	15	27
Inflows to GDP, %	1.9	3.7	8.1	13.6

Source: Estimates based on data from national authorities.

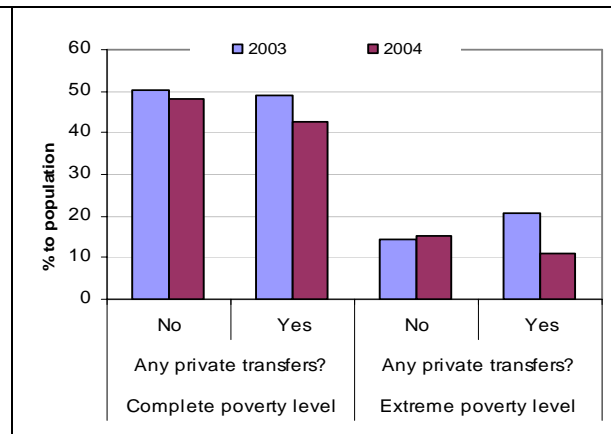
72. **Household data do not show increased private transfers.** Unfortunately, the KIHS does not have specific information about private transfers coming from abroad but will include also internal remittances. And in fact, urban households tend to have higher ratio of private transfers as an income source, measured as a percentage of private transfers to households' consumption (Table 21). As Figure 28 indicates, in 2004, households that did receive private transfers as a source of income were better off in terms of poverty outcomes.

73. **Human trafficking is a significant problem in Kyrgyz Republic.** After Southeast Asia, the ECA region is the second largest source of trafficked persons, with an estimated 175,000 victims per year, for the purpose of prostitution but also for labor work in agriculture, construction and services. While estimates of the extent of trafficking are bound to be imprecise, the Kyrgyz Republic is beyond doubt an important source country for trafficking, mainly emanating from poorer rural areas. These victims face serious physical and mental health risks much beyond those of other migrants. The Kyrgyz Government is taking steps, including cooperation with neighboring countries, to prevent trafficking, protect and help victims of trafficking, and prosecute traffickers (Box 7).

Table 21: Importance of private transfers for households' consumption

private transfers as % of consumption				
Consumption quintiles	Urban		Rural	
	2003	2004	2003	2004
1	10.3	9.1	7.2	4.8
2	6.5	9.0	4.5	4.3
3	7.0	8.4	4.8	4.2
4	6.3	5.5	2.9	4.3
5	8.6	6.0	3.9	3.5
Total	7.6	6.9	4.9	4.3

Figure 28: Having private transfers among income sources improved poverty status of households



Source: Estimates based on KIHS 2003 and 2004

Box 7: Human trafficking from, to and through the Kyrgyz Republic.

Kyrgyz persons are trafficked for the purpose of labor exploitation to Kazakhstan and Uzbekistan for agricultural labor; to Russia for labor in agriculture, industry, commerce, and construction; and to China for bonded labor. Kyrgyz women, girls and boys are trafficked for the purpose of sexual exploitation, mainly to the United Arab Emirates (U.A.E.). To a smaller extent, the Kyrgyz Republic is also transit country for from Uzbekistan and South Asia to Russia, Turkey, and Europe, and finally, it has been the final destination for Uzbek women trafficked for prostitution.

These victims face overwhelming risks to their health, especially so women and girls trafficked for sexual exploitation. They risk physical and psychological abuse, including rape, severe health risks including sexually transmitted diseases, HIV/AIDS, unwanted pregnancies and unsafe abortions, hepatitis, vulnerability to drug abuse, and legal risks. Should they return, they may represent a health risk to host countries, and they and their family are likely to suffer social stigma

The US Department of State's annual report on Human Trafficking concluded that the Kyrgyz government is making efforts to address the problem, including through cooperation with neighboring countries, to prevent trafficking, protect and help victims of trafficking, and prosecute traffickers. The greatest weaknesses in terms of action appear to be in the protection and help of actual victims of trafficking

Source: US DOS (2005), UNFPA (2002).

Child labor: an important phenomenon in Kyrgyz Republic.

74. **Child labor is a direct consequence of poverty.** Poor households send children to work instead of schools in order to cope with basic needs expenditures. But there are also other reasons why poor children work – still connected to low income but in a different way. Children in poorer areas, especially in rural areas, may work because they live too far from schools to be able to attend, because of the poor quality of education services including such basic amenities as heating of the premises, or because they cannot afford school fees. Child labor may be a logical response to poor families' need for survival, but carries with it a number of negative effects. Children at work are often exposed to physical and psychological abuse, are paid less for the same work as adults and are forced to work in hazardous and degenerating conditions. Moreover, children at work cannot devote themselves fully to education, and foregone education opportunities may mean foregone earnings possibilities in the future.

75. **Child labor in the Kyrgyz Republic is not exclusively a rural phenomenon.** However, in rural areas some of the determinants of child labor are more present than in urban areas, including lower household income levels and higher poverty incidence than in urban areas, lower quality and accessibility of education services, and important differences in labor force demand across seasons – in other words, the need for additional hands during harvesting time. A large share of children working in the streets of Bishkek and other cities are also believed to belong to migrant labor families, or have been sent by their (rural) families to town for work.

76. **Various sources confirm a high incidence of child labor in the Kyrgyz Republic.** The household survey is an inappropriate instrument to capture the phenomenon of child labor, and KIHS data in fact suggest a negligible participation of children in labor market.¹¹ Other studies

¹¹ Since the labor force survey does not cover children younger 15 years old, information on the extent of child labor was derived using basic information about each household member, and indirectly, – using children school attainment

and reports arrive at significantly higher numbers which confirm the general consensus, that child labor is an important problem in the Kyrgyz Republic. An ILO report from 2001 suggested that some 28 percent of children in the ages of 7-14 were engaged in various jobs (ILO, 2001). Government estimates suggest that between 2,000 and 15,000 neglected children live (and therefore work) on the streets.

77. **In rural areas, children mainly work on the fields while in urban areas, they work in the informal services sector.** A survey undertaken by the Trade Unions of the Agricultural Workers on child labor in the southern oblasts revealed that on average 3-4 children are involved in every hectare of cotton or rice field, while tobacco production exploits about 7-8 children per hectare (IOM, 2004). In the Jalalabat oblast alone, around 125 000 children were estimated to work in the agricultural sector. In the southern rural areas, children also work in unregulated and accident-prone gold mines. In the cities, children predominantly work in informal services such as trade (selling goods in the street) and transportation (loading), but are also involved in begging, drug-dealing, and prostitution. As mentioned above, the Kyrgyz Republic is known to be both a country of transit and of origin of child trafficking, predominantly involving children from poorer rural areas.

78. **The law prohibits child labor but there are weaknesses in implementation.** Education is free and compulsory up to the secondary level (completed by the age of 14), which effectively should exclude work before that age. The minimum age for employment is 16 years; however, children may work at the age of 14 with parental consent and provided that work does not interfere with school or health. However, difficulties in keeping up with residence registration pressures affects access to social services, including education, for various vulnerable groups including migrants and non-citizens. Children under 18 years are not allowed to work in hazardous occupations which include metal, oil and gas industries, mining and prospecting, the food industry, entertainment, and machine building (US Department of State, 2006, US Department of Labor, 2005). The largely informal nature of child labor in the Kyrgyz Republic, and the occupations in which children can be found - prostitution, mining, drugs –are witness to the weaknesses in implementing and executing the legal framework, however.

3.4 Conclusions.

79. The rural sector holds a critical role for the Kyrgyz population, especially the poor. But unlike in urban areas, where access to wage employment is key to survival, a majority of the rural population depends on the farming sector and its productivity. Because most of the poor are in the farming sector, rural poverty has fallen as agricultural growth has been positive in the past 4 years. A productive and fast growing agricultural sector is clearly one prerequisite for poverty alleviation in rural areas.

80. The agricultural sector has seen rapid growth since the mid-1990s, but productivity has fallen. Farming output increased because of the population's need to grow crops for survival. Thus, a large inflow of labor into the farming sector together with a switch into non-commercial crops implied a fall in productivity levels. With the emergence of more commercially minded

module. These data do not reflect hidden drop-outs from school, and suggest that only 2 percent of children aged 9-14 belonging to extremely poor households were working. A much higher portion – 22 percent – of children aged 15-17 were active in the labor market, and participation rates were higher in rural than in urban areas, reflecting the nature of agriculture activities that do not require advanced skills.

farmers, productivity has again increased. Whether the rural poor see the benefits of these productivity improvements is unclear. Poor agricultural workers have more hours available for work, but only a small share is able to secure a second job. Women's situation appears specifically precarious as the share of paid work has fallen significantly in the past decade.

81. While education generally raises worker earnings, its impact on poverty among workers, especially in the farming sector, is still surprisingly low. The share of university graduates in the farming sector who are extremely poor is much lower than for lower levels of education – but still reaches more than 10 percent.

82. Lack of off-farm opportunities as well as assets – whether for coping with shocks, for increasing long-term agricultural productivity, or for investing in off-farm ventures – leads poorer households to alternative strategies such as migration and child labor. Most households now have access to land. Most plots are very small, however, and run with virtually no capital equipment. Rural households are not using formal banking services, whether for savings or borrowing. Instead, alternative income is coming from sending migrants abroad and to some extent probably also from child labor, though household data are unable to verify this fact.

83. Overall, this chapter points to the crucial importance of developing off-farm activities and increasing productivity of farm activities to improve the situation of the working poor.

CHAPTER 4: URBAN LABOR MARKETS.

4.1 Introduction

84. **Why do we care about urban labor markets?** Most of Kyrgyz Republic's population lives in rural areas. As seen in the previous chapter, the rural sector and in particular agriculture plays a crucial role in the Kyrgyz economy and its influence has increased in the past fifteen years. The rural poverty incidence is nearly twice as in urban areas. Yet, precisely because of the promise of higher income opportunities, poor migrants flock to urban and peri-urban centers. In turn, population dynamics have put higher pressures on labor markets in urban areas, witnessed in higher unemployment rates and lower participation rates than in rural areas.

85. There are plenty more reasons to care about the urban poor in the labor market. First, the size of the urban population may in fact be underestimated in the Kyrgyz Republic because residence permits appear not to be keeping up with migration inflows, and because more generally, urban populations, in particular the poor, may not be well represented in household survey data (World Bank, 2006). In addition, urban areas form a much more heterogeneous group than rural areas. There are important differences between smaller and larger urban cities in terms of opportunities and living conditions, as well as between poor and rich areas within cities. Finally, the poor in urban areas tend to be more vulnerable to economic swings (rather than climatic swings), precisely because economic swings transmit more clearly to opportunities opened or closed in urban labor markets.

86. **The urban poor depend on access to labor markets, yet, they are often excluded from jobs.** Urban life is monetized, and urban residents –especially those without other assets than labor - must generate labor earnings in order to cover consumption expenses. Yet, the urban poor often face difficulties in accessing formal and well-paid employment. As shown, those with less education have a much higher propensity to find themselves in the informal sector. Because of the dependence on out-of-family work, access to services such as child and elderly care as well as transportation becomes more critical. At the same time, there is a pronounced difference between poor and rich in terms of access to these and other public services.

87. **The remainder of the chapter is organized as follows.** The first section looks at urbanization and poverty in the Kyrgyz Republic. The second section looks in more detail at urban labor market indicators. The final section addresses the differences between small and large cities and rural areas. Because urban areas are very heterogeneous, where possible, the analysis distinguishes between the two largest cities (Bishkek and Osh) and other urban areas.

4.2 Urbanization and poverty in the Kyrgyz Republic

Urban population and migration tendencies – towards Bishkek City.

88. **The Kyrgyz Republic has a relatively low share of urban population, but a high percentage is concentrated in Bishkek.** In the planning economy, policy decided where firms should be established, what they should be producing, and who should work there. As a result, transition countries tend to be “over-urbanized”, in that their level of urbanization is higher than would be expected given their average income levels (World Bank, 2006). As discussed previously, the Kyrgyz Republic has seen a tendency of re-ruralization of the population since the onset of transition – partly a reflection of the reduced importance of the industrial sector. In 2004, the share of population living in urban areas in the Kyrgyz Republic reached 35 percent (Table 22). While this was the second lowest level of urbanization in ECA after Tajikistan, Kyrgyz Republic is also the second poorest country in the ECA region, and so is not off the charts. However, the share of the urban population living in the largest city – Bishkek – is unusually high among ECA countries, at 44 percent.¹²

Table 22: Concentration of the urban population to Bishkek is unusually high by ECA standards.

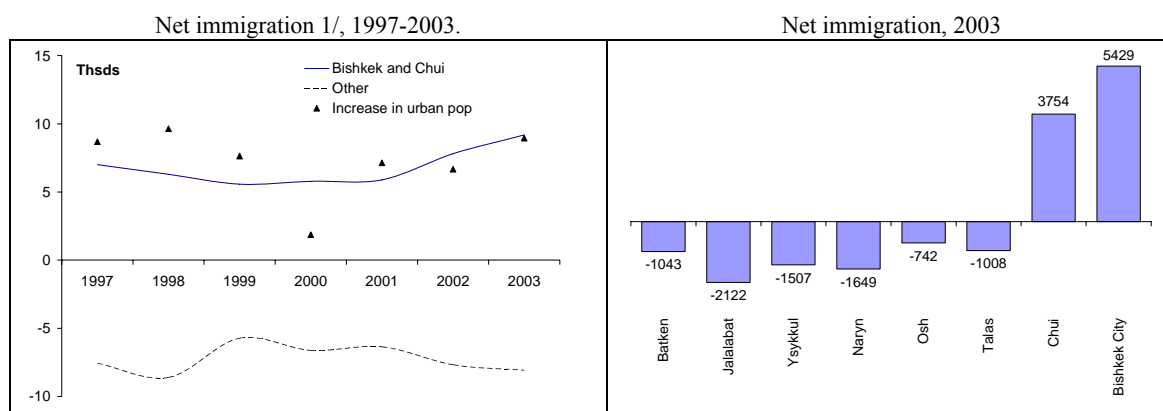
	Urbanization rate (%) 2004	Primacy rate (%) 2001 1/	GNI per capita (USD) 2004
ECA (excl. Kyrgyz Rep.)	57	27	3383
Average EU and Balkan	60	29	4733
CIS (excl. Kyrgyz Rep.)	54	26	1358
Kyrgyz Republic	35	44	400

1. For Kyrgyz Republic, 2004. Primacy rate refers to the share of the urban population living in the largest city. Source: WDI (2005); World Bank (2006); staff estimates based on KIHS 2004.

89. **In the Kyrgyz Republic, Bishkek and the surrounding Chui area account for all net in-migration.** A look at migration data suggests that the slow speed of urbanization may be hiding a high inflow of people into Bishkek in particular (and Chui to some extent), while many other urban areas are losing people on a net basis. As seen in Figure 29, only the Bishkek and Chui oblasts saw a net increase in people moving in from other regions during 1997-2003. The Chui oblast, though predominantly (79 percent) rural, receives spill-over migration from people who are heading for Bishkek but in the end are relegated to peri-urban areas outside the capital. In other words, though net urban population figures do not suggest important inflows but rather the reverse, the pressure on Bishkek City and its surroundings are high.

¹² Among ECA countries, there is no statistically significant relationship – neither positive nor negative – between GNI per capita and primacy rates, i.e. the share of urban population living in the largest city.

Figure 29. Internal migration goes to Bishkek and Chui.



Source: NSC data. 1. People who moved into the oblast from another oblast less people who moved out of the oblast to another oblast.

90. **More and higher paying jobs, especially in Bishkek, attract migrants to urban areas.** As seen in Table 23, according to the household survey, the number of migrants (aged over 15) living in urban areas is fifty percent higher than that of rural areas, and migrants make up 30 percent of the urban working age population, compared to just over 10 percent in rural areas. Moreover, some 30 percent of urban migrant residents (110,000) state job search or replacement as their main motive for moving, while only 9 percent (21,000) of rural migrants name this as their main reason for moving to the area.

Table 23: Migrants come to urban areas to look for jobs.

	Number of migrants (thousands)			% to total		
	Urban	Rural	Total	Urban	Rural	Total
Family reasons	87	73	160	24	31	27
Job replacement	9	6	15	2	3	3
Looking for job	101	15	116	28	6	19
Study	112	16	128	31	7	21
Marriage	37	110	147	10	46	24
Other reasons	15	19	34	4	8	6
Total	360	239	599	100	100	100
<i>In % to population of age</i>						
>15	28.8	11.1	17.6			

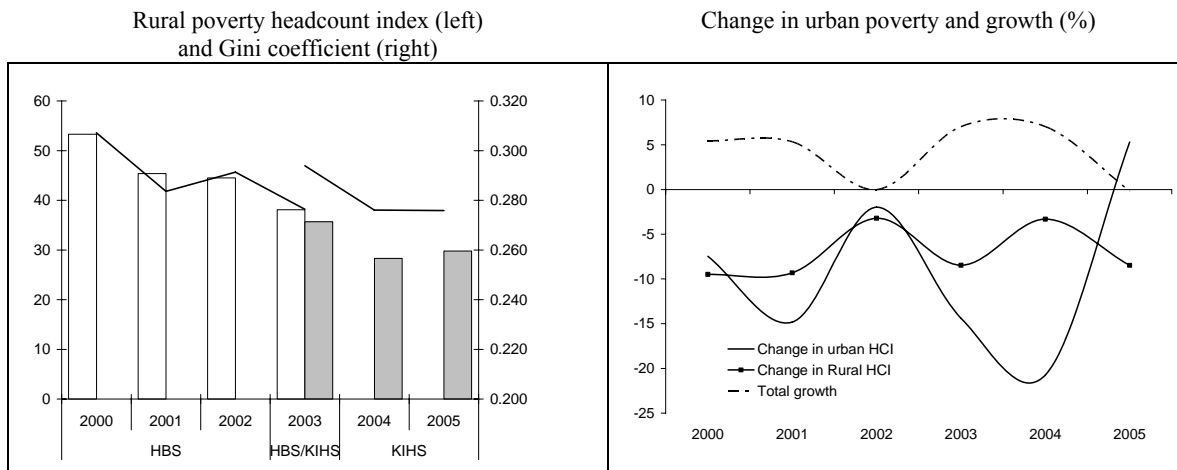
Source: Staff estimates based on KIHS 2003

Urban poverty has responded to economic growth and inequality has fallen.

91. **Up until 2005, urban poverty fell more than rural poverty.** Since 2000, urban poverty has dropped more rapidly than rural poverty, with the exception of 2005. Urban poverty fell by 15 percentage points between 2000 and 2003 compared to 12 percentage points for rural areas, and by a whole 8 percentage points between 2003 and 2004, compared to 1 percentage point for rural areas. However, this shifted in 2005, as urban poverty increased slightly while rural poverty continued to fall. (Figure 30). Between 2003 and 2004 alone, some 121,000 urban residents managed to move above the poverty line, compared to 52,000 rural residents. In 2005, as

economic growth and especially industry growth turned negative, urban poverty saw a small increase, however. Up until 2004, urban poverty reduction appears to reflect rather solid non-agricultural growth rates, in particular in the services sector, but also a higher sensitivity vis-à-vis growth rates. The higher sensitivity of urban poverty rates to growth points to the strong linkages between non-agricultural growth, employment opportunities, and poverty reduction. The set back in 2005, amidst political instability and zero economic growth, also shows the vulnerability of the urban population to output and job creation.

Figure 30: Urban poverty has responded stronger to growth than rural poverty in 2000-2004.



Source: Estimates based on KIHS and data from national authorities.

92. **Bishkek have much lower poverty rates than other urban areas.** The poverty situation and dynamics differ between Bishkek and other urban areas (Table 24). The capital has less than half the share of moderate and extreme poverty of other urban areas. Bishkek also saw a much more rapid reduction in moderate poverty between 2003 and 2005 than other urban areas.

Table 24: Poverty is lowest in Bishkek.

	2003	2005	Change (%)	Share of urban poor 2005
Total poverty (% of population)				
All Urban	35.7	29.8	-17	
Bishkek	22.5	10.8	-52	15.4
Extreme Poverty (% of population)				
All Urban	10.2	6.5	-36	
Bishkek	6.6	0.4	-94	2.8

Source: Estimates based on KIHS 2003

4.3 Overview of Urban Labor Market Indicators.

Employment opportunities are failing the urban poor and the urban youth.

93. **Among urban areas, Bishkek has the most favorable labor market conditions**, with the highest share of the working age population employed (58 percent), because of higher participation rates and relatively low unemployment rates (Table 25). The difference to the second largest city, Osh City, is particularly striking. Better economic opportunities and higher probabilities of employment explain the continued attraction of Bishkek City and its surrounding areas for migrants from rural and secondary urban areas. Yet, because of the concentration of population, 46 percent of all urban unemployed live in Bishkek City, in spite of low unemployment rates. Small urban settlements have lower employment rates than Bishkek, and the highest unemployment rates of all. Thus, labor market indicators are generally much more unfavorable in small cities than in rural areas.

Table 25: Employment rates are highest in Bishkek and lowest in Osh City.

	Total	Bishkek City	Osh City	Small towns
<i>Percentage rate</i>				
Employment rate	54	58	49	51
Labor force participation rate	62	65	57	60
Unemployment rate	13	12	14	15
<i>Percentage of total by location</i>				
Working age population	100	48	11	41
Inactive	100	44	12	44
Labor force	100	50	10	40
Employed	100	51	10	39
Unemployed	100	46	10	44

Source: Staff estimates based on KIHS, 2003

94. **The divergence in employment opportunities along income dimensions is worse in urban than in rural areas.** The poor have decidedly lower employment rates than the non-poor, largely because of higher unemployment rates (Table 26). The poor in Osh City are worst off of all – less than 40 percent of the extremely poor of working age in Osh City are employed. Employment rates are higher for the poor inhabitants of Bishkek and smaller towns, but still lower than those of the non-poor. The gap between poor and non-poor is highest in Bishkek City, however. In contrast, employment rates hardly vary across income groups in rural areas and are always higher than in any urban area for all income groups. The main reason behind the lower employment rates in urban areas are the significantly higher unemployment rates for the poor. Again, the income gap is highest in Bishkek City, where unemployment rates reach 18 percent for the poor and 10 percent for the non-poor.

Table 26: Unemployment affects the poor (or, poverty affects the unemployed).

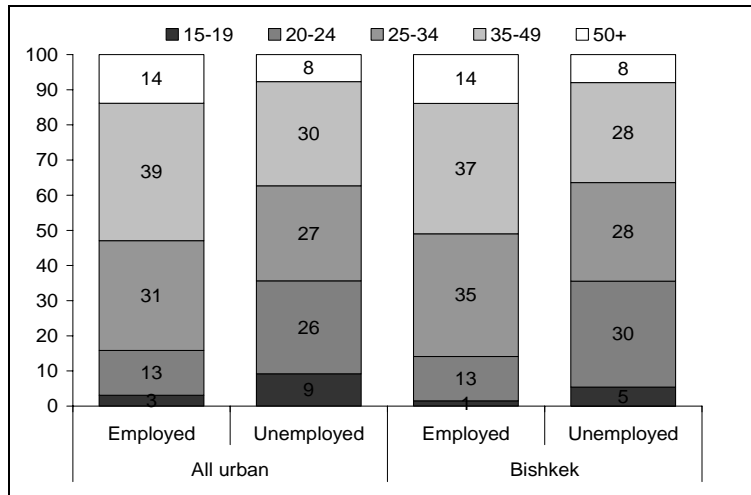
Employment rates by poverty status and location.				
	Bishkek City	Osh	Small towns	Rural
Employment rate				
Extremely poor	54	39	46	59*
Moderately poor	49	47	50	59*
All Poor	51	46	48	59
Non-poor	60	51	54	61
Unemployment rate				
Extremely poor	18	17	20	9*
Moderately poor	18	17	16	9*
All Poor	18	17	17	9
Non-poor	10	12	12	6
Labor force participation rate				
Extremely poor	65	47	57	65*
Moderately poor	60	56	59	65*
All Poor	62	55	59	65
Non-poor	67	58	61	65

Source: Staff estimates based on KIHS, 2003. *refers to all poor.

95. **Urban youth are barred from labor markets.** The young are penalized in the labor market and especially so in urban areas (Figure 31). The phenomenon is concentrated to the 20-24 age group and to a smaller extent the 15-19 age group; at higher ages, unemployment rates are below average. In Bishkek City, thirteen percent of the employed are made up of people between 20 and 24. But this age group alone makes up thirty percent of the unemployed. In contrast, people aged between 35 and 49 make up 37 percent of the employed but “only” 28 percent of the unemployed.

Figure 31: People aged 20-24 face difficulties in the job market.

Share of employed and unemployed, by age.



Source: Staff estimates based on KIHS 2003.

Unemployment and exclusion: child care and transports costs.

96. **As in rural areas, differences between richer and poorer households are clearly born out when comparing the “typical” profile of households in different income quintiles** (Table 27). The poorest urban households are larger than the richer ones, they have more children to feed, and relatively fewer people employed per household member; 60 percent of those employed living in the poorest quintiles households work in the informal sector, and 11 percent in farming. More of the poor households’ active household members are unemployed. Bishkek stands out as a richer area with more favorable labor market indicators overall, *except* a significantly higher share of informal sector employment. Compared to rural households (which on average also are poorer), urban households have higher ratios of employed-to-total-household-members, smaller share in informal sector work, and people work, on average, a full 40-hour week – in rural areas, the working week is on average 25 percent shorter.

Table 27: Labor indicators and composition of households, urban areas.

Source of Income	Consumption Quintile					Bishkek	Area	Total Urban	Memo:
	Poorest	2	3	4	Richest		Other urban		Total Rural
Average number of people									
Household members	5.3	5.0	4.0	3.3	2.5	3.0	3.6	3.3	4.7
Children	2.0	1.9	1.2	0.9	0.5	0.7	1.1	0.9	1.6
Pensioners	0.5	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.6
Working age members	2.8	2.7	2.2	2.0	1.6	1.8	2.1	1.9	2.5
Inactive	1.0	0.9	0.8	0.6	0.5	0.5	0.7	0.6	0.8
Unemployed	0.3	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.2
Employed	1.4	1.5	1.2	1.2	1.1	1.2	1.2	1.2	1.5
<i>% in farming</i>	11	8	8	4	5	2	10	6	61
<i>% in informal sector</i>	59	39	42	36	38	45	35	40	55
# of hours worked per week 1/	40	40	41	42	43	43	40	42	31
Household ratios (%)									
Dependents to WA members	88	86	79	66	54	66	70	68	85
Employed to total members	27	30	31	37	43	39	33	36	32
Unemployed to total active	18	13	10	10	6	6	12	9	11

1. Per employed person. Source: Staff estimates based on KIHS 2003.

97. **How do urban families cope with unemployment in the household?** Table 28 shows income levels by source of income for households which have no unemployed vs. those that have at least one person unemployed in the family. The data do not permit us to look at households’ internal responses, such as whether a household member who has been unemployed has been replaced by another previously inactive member (added worker strategy), e.g. a housewife entering the labor market, or children taken out of school to work. The table gives an idea of the importance of alternative income sources, however. Unsurprisingly, households with some unemployed have lower income levels – by twenty percent – than those with no unemployed. I.e. even if households have applied alternative strategies to compensate for job loss, they remain poorer, though this may be owing to a combination of less people earning income and lower wages for those employed in the household. Importantly, the income difference generated by wage income differences is not compensated for by other sources of income. Households with some unemployed receive less pension income, the same amount of (other) public transfers, and less private transfers, than those with no unemployed household members. In spite of recourse to

other sources of income households with unemployed end up being even worse off when other income sources are taken into account.

Table 28: Unemployed are not compensated by other mechanisms.

	Households with no unemployed vs. some unemployed				
	None unemployed	Some unemployed	Difference	None unemployed	Some unemployed
	<i>Soms per month</i>			<i>% of total</i>	
Income earned	2209	1756	453	71	67
Food and livestock sale	42	40	2	1	2
Pensions	305	223	81	10	8
Public transfers	28	28	0	1	1
Private transfers	258	246	12	8	9
Other income 1/	274	347	-73	9	13
TOTAL	3116	2640	476	100	100

Source: Estimates based on KIHS 2003.

98. **What keeps people outside the labor market in urban areas?** Unfortunately, the household survey is not sufficiently detailed to provide a complete understanding of why urban people, especially the poor, are not at work. Worker characteristics, most prominently low human capital, are certainly a key issue for the poor. But more than individual qualities are at play – women, who generally have the same educational background as men, are disproportionately barred from work. The gap between men and women is highest in urban areas, and among the poor; likewise, the unemployment gap between men and women is bigger in urban than in rural areas, and the gender gap is biggest in the 25-34 age bracket. Urban labor markets imply jobs outside the family, to a much larger extent than rural areas where farming dominates. As will be discussed in more detail in Chapter 5, the gender-poverty gap in urban areas suggests that lack of public or private affordable care for children and elderly is a major hindrance for female workers.

99. **Physical distance from jobs opportunities may also play a role.** Urban areas, while on average better off than rural areas, tend to be more heterogeneous. Living conditions differ in more pronounced ways between poor and rich neighborhoods. Partly because the former tend to be more disperse and because they have less political clout, poor areas are less served by physical infrastructure. At the same time, a person without access to running water in a city may be much worse off than a rural person whose water is in a well in the garden, and a similar argument goes for sewerage. As seen in Table 29 below, infrastructure services are more available in urban areas, but the gap between rich and poor is indeed much larger than in rural areas. Importantly, the availability of transportation is much lower for the poor than for the non-poor, as seen in the higher share of poor household's with far distance to public transports. The physical segregation of labor markets may thus be an important obstacle for people in poorer areas.

Table 29: Segregation between poor and non-poor urban areas is likely to hamper job search.

	Percentage of all households with access by quintile							Income gap 1/		
	Urban income quintiles					All	All	Urban	Rural	
	Poorest	2	3	4	Richest	Urban	Rural			
Pipeline gas	18	33	42	57	66	54	4	48	10	
Telephone	14	27	39	53	63	50	12	48	19	
Sewerage	47	43	56	74	82	70	8	35	24	
Hot water	16	17	28	39	50	39	1	35	3	
Far to public transport 2/	16	18	13	7	4	8	26	-13	-11	
	Percentage of household consumption									
Transports costs	5	6	6	6	7	7	4	2	-1	

1. Difference (in percentage points) in access between richest and poorest quintile. 2. Distance to public transport station: >15 min to reach

4.4 Conclusions

100. Urban labor markets matter from a poverty perspective. Overall urbanization rates are low but are masking a high concentration of population to Bishkek city, where job-search driven immigration from rural areas puts undue pressure on labor markets. The differences between the poor and the non-poor in terms of accessing labor markets are much more pronounced in urban areas, because there is no or at least less recourse to subsistence farming as a form of employment and income generation. Instead, accessing jobs outside the family is essential for household income. This is evidenced in the high sensitivity of urban poverty to economic growth – the key transmission mechanism is the labor market access.

101. This also means that urban segregation – implying, among other things, less access to public services – has a negative impact on the poor. Poor urban women have the lowest employment rates of all, because they are obliged to take care of children and elderly family members. Unlike in rural areas, these tasks cannot in general be combined with e.g. work on the farm plot. The poor tend also to live in peripheral areas with less dynamic job markets, and because of less availability of transports, cannot move to where jobs are offered. In all, the urban income segregation calls for policy interventions which go beyond the individual characteristics of workers (e.g. education levels) and lend a more important role for public services in urban planning.

CHAPTER 5: GENDER ISSUES IN THE KG LABOR MARKET

5.1 Introduction

102. **Gender gaps still exist in the Kyrgyz Republic.** International experience shows that gender inequalities tend to hamper economic growth and poverty alleviation. The Kyrgyz constitution guarantees equal rights to women, and female education and employment levels are high by international standards, especially compared to low income countries outside ECA (Table 30). Yet, as shown in Chapter 2, women face more difficulties in the labor market than men. Women have in particular lower participation rates, but also higher unemployment rates, suffer from longer duration of unemployment, and a higher share of inactive women are in fact discouraged workers. When employed, their wages are lower. Women are underrepresented in public policy-making, and one of the worst forms of child labor – prostitution – affects girls to a larger extent than boys.

Table 30: Key gender indicators in Kyrgyz Republic, ECA and Low Income Countries.

	Kyrgyz Republic		ECA	LIC
	Female	Male	Female	Female
Life expectancy (years)	72	64	73	60
Adult mortality rates (per 1,000)	162	336	134	246
Share of labor force	44	56	45	35
Unemployment rates (%)	10.5	9.4	10.7	n.a.
Literacy rates (%)	98	99	99	50
Gross tertiary school enrolment (%)	43	36	52	7
Parliament seats (% of total)	3	97	13	15

Latest available data 2002-2005. *Source:* World Development Indicators, 2005, WHR, 2006, KIHS 2003.

103. **The breakdown of social safety nets and the erosion of social service provision during transition have had important effects on women in the labor market.** First, they have added significant additional responsibilities to many women in the form of care for children and elderly in the family. This has affected women's ability to participate in the labor market. Second, social services sectors have traditionally employed women, meaning that the contraction of these sectors have increased female unemployment. Finally, because women live longer but retire earlier than men, they make up a larger portion of pensioners, whose benefits have also been affected during economic reforms of the social sectors. On the other hand, the economic transition has opened up new opportunities for women especially in the bazaar, credit, and modern service sectors. More generally, the evidence for the ECA region suggests that economic

transition and the decline of heavy industry and extraction industry has affected men to a larger extent than women (World Bank, 2005).

104. **This chapter explores the functioning of the labor markets in the Kyrgyz Republic, with an emphasis on how outcomes differ for men and women.** It explores patterns and determinants of labor force participation, levels and distribution of unemployment, and the sectoral/occupational distribution of employment. In all cases, care is taken to distinguish between public employment, private formal employment and private informal employment, as well as between employment in rural and urban areas. Special emphasis is placed on an exploration of male-female earnings differentials and their possible causes. Finally, a concluding section summarizes the most important and policy-relevant findings. As elsewhere, the analysis is based on data from the labor force module of the 2003 KIHS.

5.2 Gender gaps in labor force participation and unemployment

Lower labor force participation but higher unemployment rates, especially for poor women.

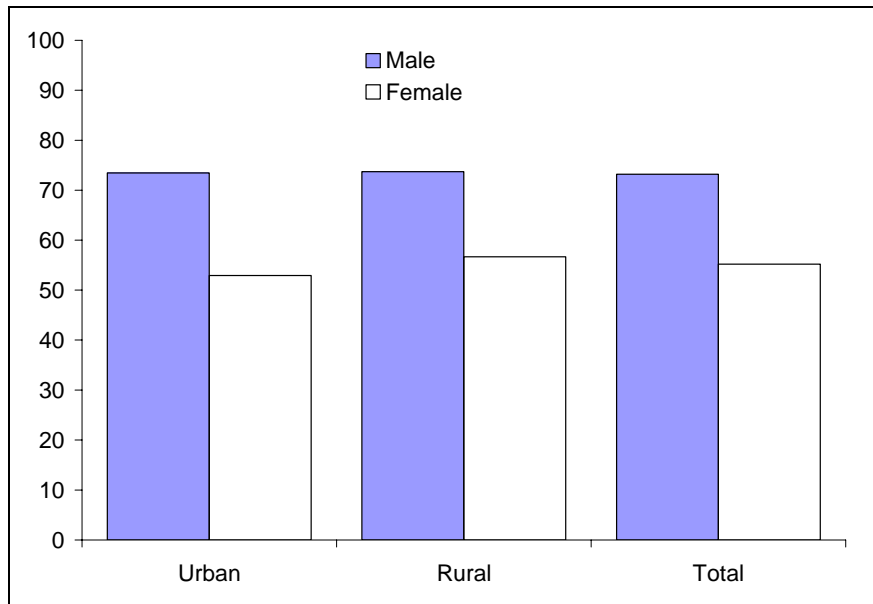
105. **Female access to the labor market, and more specifically salaried employments outside the home, is important from both an economic and equality perspective.** Inactive or unemployed women remain an untapped resource for production. Apart from adding income to the household, labor market activity gives women access to the “public sphere” of society and some independence from the “private sphere” of the family. In a country like Kyrgyz Republic, where education levels among women are high, working women also have an opportunity to valorize their (and society’s) investment in education.

106. **Female labor force participation rates may have fallen in the Kyrgyz Republic since the transition to a market economy.** ILO EAPAP data – which is estimated to ensure comparability between countries and across time and so may not be as reliable as country source data - show the female labor force participation rate falling from 58 percent in 1995 to 55.1 percent in 2005. Our calculations based on KIHS data show a female labor force participation rate of 55.2 percent. Thus, there seems to be a decrease in women’s labor force participation rate over time but comparability of these estimates is an issue.

107. **In the Kyrgyz Republic and other CIS countries, there is an ongoing debate about the reasons for observed declines in female labor force participation.** One explanation is the breakdown of social safety nets and the erosion of social services provision (especially child care services) during transition, which has added significant responsibilities to many women in the form of child and elder care. A contrasting explanation is that the decline reflects voluntary choice by women to exit the labor force and is a natural consequence of the move from a socialist to a market economy. These two explanations are of course not mutually exclusive.

108. **Using the 2003 household survey data, the global level of labor force participation rates is higher for males than females in Kyrgyz Republic** (Figure 32). At the national level, 74 percent men and 55 percent of women are active in the labor market. In both rural and urban areas, men have significantly higher labor force participation rates. Women are slightly more active in rural areas (57 percent) than in urban (53 percent), while the participation rate for men is almost identical in the two areas.

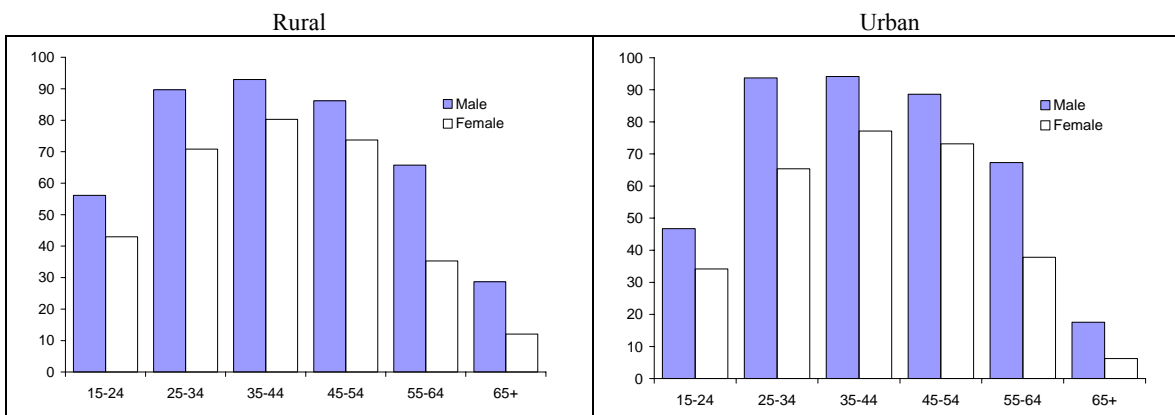
Figure 32: Labor force participation: national, urban and rural, 2003



Source: Estimates based on KIHS 2003.

109. **Women are less active in the labor market than men, at all ages in both rural and urban areas.** For both men and women, the decline in participation rates after age 55 is precipitous; however, the drop is sharper for women, driven largely by relatively young retirement ages (Figure 33). In 2003, women retired at age 56 and men at age 61; these thresholds changed to ages 58 and 63 in 2007, however. In both urban and rural areas, the gender differences in participation rates are largest for workers in the 25-34 age bracket, signifying, among other things, women’s larger responsibilities for childcare. Thus, while 94 percent of men aged 25-34 are active in the labor market, only 65 percent of women of the same age are.

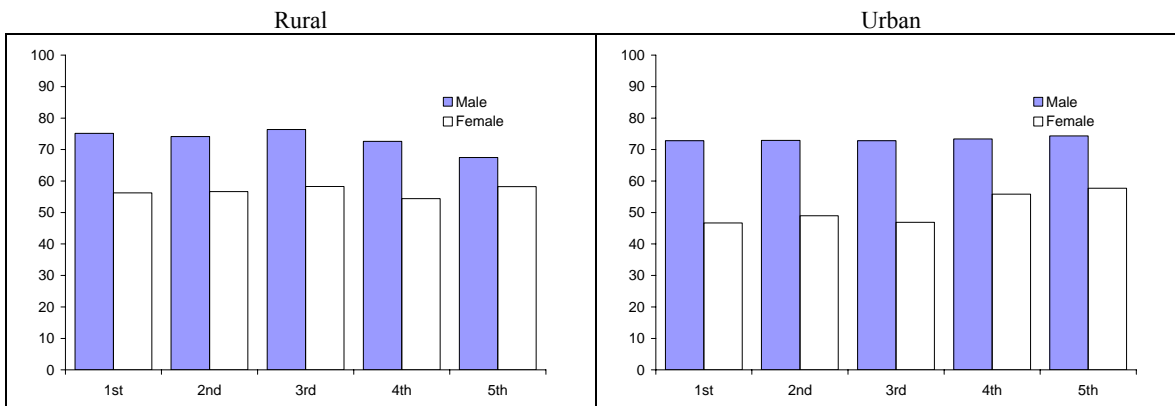
Figure 33: Participation rates by age, gender, and location.



Source: Estimates based on KIHS 2003.

110. **Poor women in urban areas have the lowest participation rates, and gender gaps are largest among the poor in both rural and urban areas.** In rural areas, participation rates for women vary surprisingly little with income level, while men belonging to richer quintiles tend to be less active in the labor market than their poorer counterparts (Figure 34). As a result, the gender gap in labor market participation is highest for the poorest groups. In urban areas, men’s participation rates remain constant as income levels rise, but women’s participation rates increase by 11 percentage points between the poorest and the richest quintiles. Only 47 percent of women in the poorest urban quintile are active in the labor market, compared to 73 percent of men. The rise in female participation as household income increases may indicate increased ability to pay for child and elder care services.

Figure 34: Labor force participation rates by income quintile in rural and urban areas

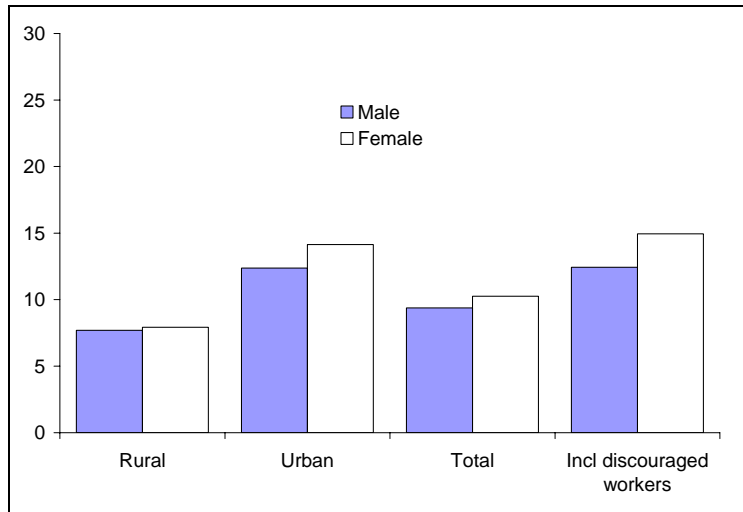


Source: Estimates based on KIHS 2003.

111. **Unemployment rates are higher for women than for men in urban areas.** The overall rate of unemployment is higher in urban areas than in rural areas. However, as shown in Figure 35, unemployment rates for men and women are very similar in rural areas (7.7 vs. 7.9 percent), while in urban areas, unemployment rates are slightly higher for women than men (14.1 versus 12.4 percent).

112. **The unemployment/gender gap is higher when discouraged workers are included among the unemployed.** While the differences between male and female unemployment rates are small, the lack of success for women in finding jobs is more remarkable given their significantly lower participation rates. Indeed, the share of inactive people who are discouraged workers, i.e. have given up hope of finding a job, is larger for women than for men. Thus, if discouraged workers are included in the labor force, national unemployment rates for women increase further to 15 percent, compared to 12 percent for men (Figure 35).

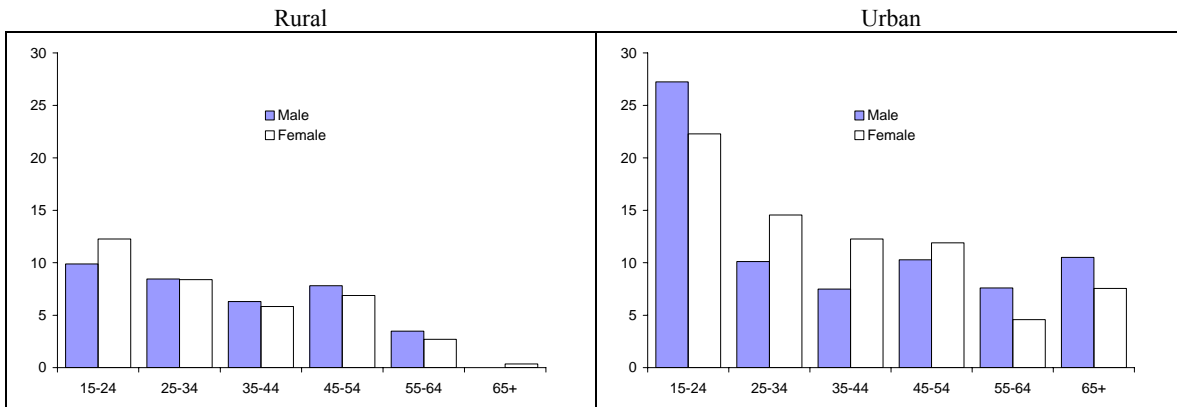
Figure 35: Unemployment rates by gender and location, including discouraged workers.



Source: Estimates based on KIHS 2003.

113. **As in many other countries, youth unemployment rates are significantly higher than average unemployment rates.** The age profile of unemployment is different for urban and rural women, however (Figure 36). In rural areas, higher unemployment rates for young women account for the entire gender gap in unemployment. In urban areas, however, young males have higher unemployment rates, while women in prime working age – 25-54 – have higher unemployment rates. These differences may be explained by differences in participation rates – as seen above, more women are inactive in young age (because of higher university enrolment rates, childbearing, etc.) and in old age (among other things, because of lower retirement age).

Figure 36: Unemployment rates by gender, age group, and location.

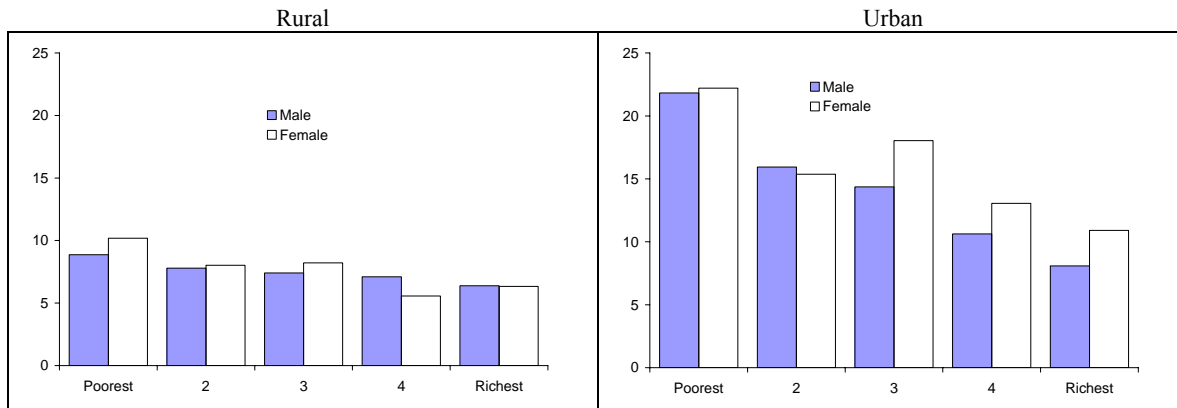


Source: Estimates based on KIHS 2003.

114. **Poorer individuals are more likely to be unemployed, whether they live in urban or rural areas, and whether they are men or women.** Clearly, however, unemployment is a much greater issue for the urban poor than for the rural poor, as are differences between poor and non-poor. Unemployment rates are highest for women belonging to the poorest quintile in urban areas.

In urban areas the unemployment rate for female in first quintile is the double that for the richest quintile (22 percent versus 11 percent); the gap for men between the poorest and richest quintiles is even larger, however (Figure 37).

Figure 37: Unemployment rates by income quintile, gender and location.



Source: Estimates based on KIHS 2003.

Female labor force participation – hampered by lack of public services.

115. **Household responsibilities are an important barrier to women’s participation in the labor market.** In the household survey questionnaire, the two most common reasons given by both men and women for not being economically active are that people are enrolled full-time in schools or retired. But the third most important reason for women was “keeping house, taking care of children, sick persons, elderly, etc.” – some 25 percent of all inactive women cited this as their main reason for not looking for a job. For men, this reason was of negligible importance (Table 31)

116. **What personal characteristics of female and male workers influence the decision or ability to participate in labor markets – and to what extent?** To investigate this question and control for their influence on one another, probit regressions on labor force participation were estimated, for men and women separately to distinguish differences in the impact of different variables. (See Table Annex 1 for results). The estimations included several socio-economic and personal characteristics which might influence the decision or ability to participate in the labor market. The analysis highlights the importance of child care arrangements and schooling for women’s participation in labor markets.

117. **Age.** Younger people are in school or live at home provided for by their parents and are therefore less likely to participate in the labor market than older workers. As seen in the figures above, the age effect wears off after the age of 45, however. In the estimations, participation increases with age for both men and women, but the gradient is steeper for women. The increment to participation is declining over time, however. \

118. **Household head.** Main breadwinning responsibilities often lie with the household head, which would suggest higher participation for household heads, other things equal. However, the household head is not always the main breadwinner. Households where some members and perhaps also the household head are working as migrants are a case in point – is the wife designated as household head or not? In the Kyrgyz Republic, being a household head increases

the probability of male participation but does not affect female participation. This suggests that there is a discrepancy between the designation of household head and de facto breadwinning responsibilities. Another potential factor is the longevity of women compared to men, implying that more widows live in single-person households than men.

Table 31: Reasons for not being active in the labor market (% of total responses)

Reasons for not participating in labor force (% of total inactive)	Female	Male	Total
Retirement	31.1	29.4	30.5
Attending full time educational institutions	28.4	45.6	34.5
House keeping, taking care of children, sick persons, elderly, etc.	24.8	1.5	16.4
Lost hope of finding employment	3.4	5.2	4.0
Do not know where to seek employment	3.1	3.9	3.4
Waiting for the season beginning	1.0	2.7	1.6
Waiting for the employer's response	0.1	0.1	0.1
Due to state of health	1.3	2.0	1.6
No need to work	0.3	0.7	0.5
Other	6.6	9.0	7.4

Source: Estimates based on KIHS 2003

119. **Marital status.** Marriage is likely to result in a higher polarization of women's and men's household duties. Irrespective of the presence of children, married women may be expected to have their spouses work outside the home; women, in turn, provide unpaid family labor in the form of household work. And indeed, in the Kyrgyz Republic, being married increases the probability of male participation in the labor market significantly but decreases the probability of female participation even more.

120. **Children in the household.** In the absence of child care, the presence of children—especially of pre-school age—is likely to affect women and men differently in the same sense as marital status. Generally, the task of caring for children (and elderly) will fall on women, in particular the wife, but also older sisters or grandmothers. The econometric analysis shows that having young children not yet in school decreases female labor force participation; for males, on the other hand, having young children slightly increases the labor force participation rate. The presence of older children does not affect either male or female participation rates.

121. **Education.** Education is generally a strong determinant of earnings potential and therefore also of labor market participation. In the case of the Kyrgyz Republic, there are important differences in the impact of schooling on men's and women's labor force participation. Schooling generally increases the probability that men and women will enter the labor force, but the impact is far more important for women at both ends of the schooling spectrum. Having even incomplete primary school studies (compared to having no education at all) increases the probability that women will be active by 25 percent, while for men, there is no statistically significant difference. Women with university studies are 33 more likely to enter the labor force than women with no studies. The effect is only half as important for men. Thus, schooling seems

to play a particularly important role for low skill and high skill women's entry into the labor force (with education as a proxy for skill level). At intermediate education levels, the size of the impact for men and women is very similar.

122. **Location (oblasts).** Labor market conditions in Kyrgyz Republic differ significantly across regions. High in-migration puts pressures on labor markets in Bishkek City and Chui. These areas stand in contrast to rural areas which largely consist of remote and badly connected mountain villages. Oblasts also have different sectoral profiles which influence women's – and all workers' - job opportunities more generally, e.g. the presence of the mining sector. The estimates show interesting geographical differences in labor force participation. Women outside the oblast of Bishkek are more likely to be in the labor force than female Bishkek inhabitants; men, on the other hand, are generally more likely to be in the labor force if they live in the Bishkek oblast.

5.3 Sectoral and occupational distribution of employment

Occupational and sectoral segregation by gender: exists, but not abnormally high.

123. **Segregation in the labor market – often an important cause of earnings differentials – can occur in sectors or in occupations.** On the one hand, women can be confined to certain economic sectors, perhaps with lower salary levels overall. On the other hand, women may be confined to certain types of lower-paying occupations within these sectors.

124. **Women hold a relatively higher share of employment in the services sector, and a relatively lower share in the construction sector.** In terms of sector of work, gender segregation is not blatant in the Kyrgyz Republic, but some important differences exist. Table 32 shows the distribution of total employment by sex, in rural and urban areas. As seen, women have a relatively higher share in manufacturing and services, while men have a by far higher share in the construction sector. Within services, women have a higher relative representation in trade, hotels and restaurants, and, in particular, the education and health sectors, compared to men. On the other hand, women have a smaller share in transport, real estate, and public administration. Judging by average wage levels—and with the noticeable exception of manufacturing and hotels and restaurants—women are overrepresented in sectors with lower wage-levels. In particular, within public sector employment, women are concentrated in the low wage sectors of education and health, while men have positions in the relatively well-paying public administration.

125. **The higher share of women in social sectors like education and health is reflected in a higher share of public employment in both rural and urban areas.** Within the private sector, however, women have a higher share of informality in rural areas only – most likely as a result of a higher incidence of unpaid family work.

Table 32: Economic activity by gender in rural and urban areas, 2003

Economic activity	Urban			Rural			Wage (% of average)
	Male	Female	Total	Male	Female	Total	
Agriculture & Fishing	7.1	6.6	6.9	61.7	61.5	61.6	
Agriculture, hunting	7.1	6.6	6.8	61.7	61.5	61.6	40
Fishing	0.03	0.04	0.04	0.02	0.03	0.03	48
Industry	21.1	23.1	22.1	6.0	5.8	5.9	
Mining and quarrying	2.6	0.7	1.6	0.4	0.0	0.2	108
Manufacturing	14.7	20.8	17.8	3.8	5.4	4.6	168
Electricity, gas and	3.8	1.6	2.7	1.8	0.4	1.2	184
Construction	13.5	1.6	7.4	6.8	0.8	4.0	99
Services	58.2	68.7	63.6	25.6	31.8	28.5	
Wholesale and retail	19.3	19.6	19.4	6.4	8.3	7.3	85
Hotels and Restaurant	2.1	6.6	4.4	0.6	1.2	0.9	130
Transport, storage and communication	12.5	2.6	7.4	5.1	1.2	3.3	155
Financial intermediary	0.7	1.2	1.0	0.3	0.3	0.3	335
Real estate, renting	3.7	2.8	3.3	0.7	0.4	0.6	113
Public administration	9.6	5.0	7.2	4.9	1.8	3.4	140
Education	4.3	15.2	9.9	4.6	11.4	7.8	60
Health and social work	2.5	10.6	6.6	1.7	6.1	3.8	50
Housing, social and personal services	3.5	5.0	4.3	1.5	1.2	1.3	75
Extra-territorial org	0.1	0.2	0.1	0.0	0.0	0.0	n.a.
Total	100.0	100.0	100.0	100.0	100.0	100.0	100
PUBLIC SECTOR	15.1	29.1		11.0	18.9		
PRIVATE SECTOR	84.9	70.9		89.0	81.1		
Formal	45.5	32.5		38.7	23.8		
Informal	39.4	38.4		50.3	57.4		

Source: Estimates based on KIHS, 2003, and data from national authorities.

126. **Occupational segregation may be a more important indicator of segregation than sector of employment, however.** Sector of employment is only one measure of the sex segregation of employment. A more common measure captures whether men and women are employed in different occupations across sectors. Occupational gender segregation has been at the heart of debates about gender inequality in labor markets. High levels of segregation have been considered to be a significant factor in the discrepancy between the wages of women and men and to impose constraints on women's careers (Fox and Fox, 1987; Hughes, 1990; Reskin and Roos, 1990). A significant body of research has documented a negative relationship between the percentage female in an occupation and that occupation's wage.¹³

127. **Women and men work in different occupations.** Table 33 shows the percentage of female and male workers, respectively, in the top three female- and male-dominated occupations in urban and rural areas.¹⁴ In rural areas, agricultural work is the most common male-dominated

¹³ McPherson and Hirsch (1995), for example, document that in the United States that a majority of women work in a limited number of occupations characterized by a proportionately high number of female workers; moreover, workers in these female-dominated (FD) occupation earn less, on average, than workers in traditionally male or integrated occupations.

¹⁴ We follow the definition of Sorenson (1989,1990), in that a share greater than 60 percent female (male) is considered a female (male) dominated occupation.

(MD) occupation, employing two thirds of men in rural areas; the most common female-dominated (FD) occupation—teaching—occupies only about 22 percent of female workers in rural areas. In urban areas, extraction and building trade jobs account for 23 percent of all male workers, while 22 percent of women work in personal services (such as housekeeper, travel attendant) and 18 percent in craft and related trade jobs.

Table 33: Female vs. male dominated occupations in rural and urban areas (2 digit occupational codes)

% of total female urban employment in female dominated occupations		% of total female rural employment in female dominated occupations	
Personal and protective services workers	22	Teaching professionals	22
Craft and related trades workers	18	Personal and protective services workers	16
Teaching professionals	15	Life science and health associate professionals	15
Other	45	Other	47
% of total male urban employment in male dominated occupations		% of total male rural employment in male dominated occupations	
Extraction and building trade workers	23	Market-oriented skilled agricultural and fishery workers	65
Drivers and mobile plant operators	20	Extraction and building trade workers	9
Models, salespersons and demonstrators	17	Models, salespersons and demonstrators	5
Other	40	Other	21

Source: Estimates based on KIHS 2003.

128. **Urban areas have significantly higher occupational segregation than rural areas, but occupational segregation is not high compared to other countries.** The most common measure of occupational segregation is the Duncan Index (also known as the dissimilarity index).¹⁵ It can be interpreted as the sum of the minimum proportion of women plus the minimum proportion of men who would have to change their occupation in order for the female proportion to be identical in all occupations. The higher the index, the more severe is therefore the occupational segregation. The Duncan index (calculated for 2-digit occupational codes) in urban areas in the Kyrgyz Republic is 0.445; in other words, almost 45% of women and men would have to change their occupation in order to have an identical sex distribution across all occupations (Table 34). In rural areas the Duncan index is a much lower 0.178, a witness to the high concentration in agricultural occupations. In urban areas, segregation is similar in public and private sectors, whether formal or informal. In rural areas, however, segregation is considerably higher in the public sector than in the private formal or informal sector. The Duncan index for public sector employment is quite similar in rural and urban areas.

129. By way of comparison, estimates from the early 1990s of the Duncan index at the 2-digit level range from 0.56 to 0.61 for OECD countries, 0.59 to 0.77 for Middle East and North African countries, and 0.29 to 0.60 for Asian countries (Anker, 1998).¹⁶ Although the numbers

¹⁵The standard formula to compute the dissimilarity index (D) is the following:

$$D = \frac{1}{2} \sum_i |F_i / F - M_i / M|,$$

where F_i/F and M_i/M represent the proportion of female and male in each occupation.

¹⁶ China is an outlier here, with a Duncan index of 0.29—far lower than the next lowest score of Korea’s 0.40. Note that these estimates are for the early 1990s and are thus not strictly comparable. They are, however, the most recent estimates for a relatively large number of countries.

may not be strictly comparable, they do suggest that occupational segregation is not abnormally high in the Kyrgyz Republic. In addition, the lower occupational segregation bears is related to the low level of diversification of the Kyrgyz economy and the large share of population employed in fairly similar low-skill occupations.

Table 34: Estimated values of the Duncan Index: National, Urban and Rural, 2003

	Total	Urban	Rural
<i>Kyrgyz Republic</i>	<i>0.266</i>	<i>0.445</i>	<i>0.178</i>
Public	0.413	0.436	0.431
Private formal	0.320	0.451	0.217
Private informal	0.221	0.450	0.138
<i>International comparators</i>			
OECD countries range	0.56-0.61		
MENA countries range	0.59-0.77		
ASIAN countries range	0.29-0.60		

Source: For KG, estimates based on KIHS 2003. For international comparators: Anker (1998).

5.4 Female-Male earnings differentials

Earning inequality: highest in the urban public sector.

130. **At the core of the concern for occupational segregation lies the risk of different earnings opportunities for men and women.** Table 35 details male and female hourly earnings in public employment, private formal employment, and private informal employment for urban and rural areas. In rural areas, hourly earnings are highest in the public sector for both men and women. In urban areas, on the other hand, earnings are highest for both men and women in private sector employment. But it is important to note that wages, whether for men or for women, are always higher in urban areas, and that the difference is much more pronounced for the private sector.

131. **Earnings inequality is highest in the public sector.** A first observation is that urban males in the private formal sector have the highest earnings of all groups in the Kyrgyz Republic. Overall, women earn less than men per hour, by some 30 percent in urban areas and 25 percent in rural areas. The biggest gaps between men and women occur in the urban public sector and the rural private informal sector. In most developing countries, male-female earnings gaps are smaller in public employment than in private employment, making the Kyrgyz Republic a different case. Again, as seen above, women who are public sector workers remain concentrated in education and health sectors, which are low-paying sectors.

Table 35: Average income for female and male in public, private formal and informal sector in urban and rural areas.

URBAN	Total	Public	Private formal	Private informal
Male (soms per hour)	41	36	47	37
Female (soms per hour)	29	24	35	27
Earnings ratio	0.70	0.67	0.75	0.73
RURAL	Total	Public	Private formal	Private informal
Male (soms per hour)	15	25	16	12
Female (soms per hour)	11	19	12	8
Earnings ratio	0.74	0.77	0.74	0.67
RURAL-URBAN EARNINGS RATIO	Total	Public	Private formal	Private informal
Male	0.37	0.70	0.34	0.34
Female	0.39	0.80	0.34	0.31

Source: Estimates based on KIHS 2003

Earnings differentials in private and public sector.

132. **What explains the sizeable earning inequalities between men and women?** Following Oaxaca (1973)¹⁷, the difference in earnings could be due to two separate factors: (i) differences between men and women in human capital endowment and (ii) differences between men and women in their return to the same human capital characteristics. From a policy perspective, insights from such a decomposition can allow for a more tailored response. Differences explainable by differences in characteristics could suggest that public policy focus on upgrading women’s human capital. However, when earnings gaps remain largely unexplained by observable characteristics, discrimination may be a problem—although other factors may also be at play.¹⁸

133. The results from a Oaxaca decomposition are summarized in Table 36¹⁹. The model has been estimated for urban areas only and for females and males separately with the logarithm of hourly earnings as the dependent variable and the following explanatory variables: (i) level of education (from high to no education), (ii) occupation and economic activity from the standard ILO classification, (iii) location (oblast), (iv) whether he/she is head of the household, and (v) marital status. By including occupations as an explanatory variable, we control for the effects of occupational choice or segregation on earnings.

134. **In the public sector, the differences in earnings appear mostly attributable to differences in human capital endowments.** The estimations suggest important differences between public and private sector conditions. In the public sector, most of the difference in mean hourly earnings – 67 percent of the total – is explained by differences in endowments and the interaction between endowments and returns to endowments. Thus, while earnings gaps are large in the public sector in urban areas (as seen above, women’s hourly earnings, on average, are only

¹⁷ Oaxaca (1973) investigated the chronic earnings gap between male and female workers in the United States and provided a quantitative assessment of the sources of male-female wage differentials.

¹⁸ The unexplained component is frequently (and incorrectly) labelled as discrimination; it is more correct to call it the “unexplained component” of wage gaps. Discrimination is one of several factors—including unobserved heterogeneity—which might influence the unexplained component.

¹⁹ See Annex 2 for a discussion of the regressions and complete estimation results.

67 percent of men's), the majority of the gap is explainable by differential endowments. This result consistent with the important occupational segregation observed within the public sector jobs, with women predominantly employed in lower-skill occupations in health and education.

135. **In the private formal sector the situation is reversed: differences in endowment cannot explain the earnings differentials.** Almost 80 percent of the average earnings gap of 0.281 in the private formal sector remains unexplained when endowments and other characteristics have been taken into account. In the private informal sector, just under half (43 percent) of the earnings gap remains unexplained.

Table 36: Hourly earning differential decomposition in urban areas.

Public sector		Private formal sector		Private informal sector	
Earnings gap	of which unexplained	Earnings gap	of which unexplained	Earnings gap	of which unexplained
0.42	33%	0.28	79%	0.25	43%

Source: Estimates based on KIHS 2003. Note: Earnings gaps are expressed in logarithms

136. **A different picture thus emerges in the comparison between private and public sectors.** In the public sector, gaps in hourly earnings between men and women are explained by human capital endowments and other observable factors. In the private sector—and to a greater degree in the private formal sector than in the private informal sector—the unexplained portion of the hourly earnings gap is large. While this is not conclusive proof of discrimination against women (since omitted variables and unobserved heterogeneity may play a role), it is suggestive that discrimination may be a serious problem in private firms in the Kyrgyz Republic.

Earnings gaps and female-dominated occupations

137. **Segregation of women into low-paying occupations may be an important source of male-female earnings gaps in The Kyrgyz Republic.** As discussed above, occupational segregation matters because women are frequently segregated into low-paying occupations in which opportunities for advancement are low. Table 37 provides an overview of the average hourly wages (or hourly earnings, in the case of self-employment) in the three most important male- and female-dominated sectors in urban and rural areas in the Kyrgyz Republic. In urban areas, the top three female-dominated occupations have hourly earnings lower than any of the three most important male-dominated occupations. In rural areas, average hourly earnings in two of the three male-dominated occupations exceed average hourly earnings in the three most important female-dominated occupations.²⁰

²⁰ A notable exception is average wages for skilled agricultural and fishery workers, a male-dominated occupation with a very low average wage.

Table 37: Average hourly earnings in female- and male-dominated occupations in urban and rural areas

Urban			
Top 3 female-dominated occupations	Average hourly earnings (in Som)	Top 3 male-dominated occupations	Average hourly earnings (in Som)
Teaching professionals	31.4	Drivers and mobile plant operators	45.6
Craft and related trades workers	26.6	Models, salespersons and demonstrators	44.3
Personal and protective services workers	24.9	Extraction and building trade workers	35.8

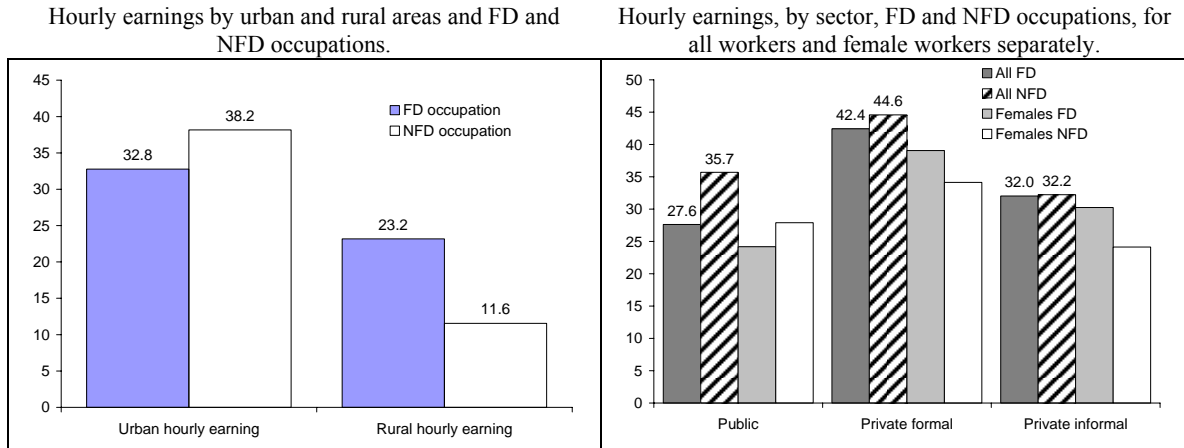
Rural			
Top 3 female-dominated occupations	Average hourly earnings (in Som)	Top 3 male-dominated occupations	Average hourly earnings (in Som)
Teaching professionals	26.5	Market-oriented skilled agricultural and fishery workers	8.3
Personal and protective services workers	16.6	Extraction and building trade workers	27.4
Life science and health associate professionals	12.8	Models, salespersons and demonstrators	23.9

Source: Estimates based on KIHS 2003

138. **Female-dominated occupations have lower hourly earnings in urban areas and higher hourly earnings in rural areas.** In the rural areas only 19 percent of the total population is employed in FD occupations (because of the importance of the male-dominated agricultural sector for both sexes), compared to 41 percent in urban areas, which are more diversified. For the same reason, average hourly earnings are higher in FD occupations in rural areas (Figure 38). Average hourly earnings in FD occupations are lower than in non-female dominated (NFD) occupations in urban areas, however.

139. Disaggregating urban employment into public, private formal and private informal sectors, FD occupations have lower hourly earnings in all three sectors, although the difference in hourly earnings between FD and NFD occupations is quite small in the private sector. If we limit the analysis to female workers, only women working in FD occupations in the public sector have lower wages than women in NFD occupations. In the private formal and informal sector women in FD occupations earn higher wages than women in NFD occupations.

Figure 38: Hourly earnings (soms) in FD and NFD occupations.



Source: Estimates based on KIHS 2003

140. **Are women in FD occupations better off than women with equivalent characteristics in NFD occupations?** Do the above results imply that women working in the private sector are better off working in FD occupations? Not necessarily, since there is no guarantee that women working in NFD occupations are similar in characteristics to those working in FD occupations and that women, in general, can easily move from one type of occupation (NFD) to another (FD). More precisely, the question is whether women working in NFD occupations earn less than *equivalent women* working in FD occupations. We apply the propensity score matching method to investigate whether the average hourly earnings of women is higher in FD occupations or in NFD occupations once we control for specific individual characteristics of the workers and the propensity to work in a FD or NFD occupation.²¹ If the average hourly earnings of women in FD occupations are higher than the average earnings of women in NFD occupations, then there is no reason to promote women entering NFD occupations; their decision to work in FD occupations would be eminently logical and income-maximizing.

141. **In the private sector, women would not improve their earnings by shifting into NFD occupations.** Table 38 contains the results of the propensity score matching estimation. Women working in FD occupations in the private sector—both formal and informal—have significantly higher hourly earnings than women who have similar characteristics and (a priori) the same probability of working in FD occupations, but who are actually working in NFD occupations. In the private formal sector, women in FD occupations earn 46 percent more (39 soms compared to 27 soms per hour) than similar women in NFD occupations (the “matched” hourly earnings). In the private informal sector, women in FD occupations again earn more than similar women in NFD occupations, although the wage premium actually falls when workers are matched. In the public sector the situation is fundamentally different. Women working in FD occupations earn less than their counterparts in NFD occupations, and matching in fact generates a slightly larger wage gap than a simple comparison of average wages.

142. **Thus, our research suggests that FD occupations in the private sector are preferable market outcomes for many women.** In the case of the private formal sector, FD occupations seem vastly preferable to employment in NFD occupations. In this case, policies designed to alter

²¹ See annex 3 for a more detailed discussion.

women’s occupational choices will not reduce the gender wage differential – quite the reverse. On the other hand, women working in FD occupations in the public sector do suffer a wage penalty vis-à-vis women working in NFD occupations and policies and programs to promote the choice of non-traditional careers for women in the public sector would contribute to a narrowing the gender wage gap.

Table 38: Results of propensity score matching

	FD occupation	NFD occupation	Difference (%)
Private formal sector			
Hourly earnings-unmatched	39.1	34.2	14.4
Hourly earnings—matched*	39.1	26.7	46.4
Private informal sector			
Hourly earnings-unmatched	30.3	24.1	25.5
Hourly earnings—matched*	30.3	25.1	20.6
Public sector			
Hourly earnings-unmatched	24.2	27.9	-13.3
Hourly earnings—matched*	24.2	28.6	-15.5

Source: staff estimates based on KIHS 2003. *also known in the literature as average treatment effect on the treated--ATT

5.5 Conclusions

143. This chapter provides a detailed picture of gender issues in Kyrgyz labor markets. Although participation rates for women are quite high, they lag significantly behind those of men, in spite of similar educational achievements of men and women in the labor force. The significant differences in participation rates – between men and women of similar ages and between poorer and richer women – suggest that the lack of child care and elder care services is a major impediment to women’s participation in the labor market.

144. In the private sector, there seem to be no gain in terms of women’s earnings in moving women from traditionally female occupations to traditionally male occupations. This is an unusual result and most probably results from the comparatively low level of occupational segregation which characterizes labor markets in The Kyrgyz Republic, especially in rural areas. There are wage gains to be had, however, in moving women into non-female-dominated occupations in the public sector.

145. The data point to a sizeable earnings gap between men and women. Especially in the private sector, a large part of this difference could be due to some form of discrimination although other unobservable phenomena may also be at play. In the public sector, however, differences in men’s and women’s human capital characteristics explain a significant share of wage gaps. This suggests that in order to promote women moving into the non-female-dominated occupations in the public sector, additional training or education may be needed.

146. The unexplained share of earnings gaps calls for more focused research. To quantitatively document wage discrimination, panel data will be essential, but is an expensive and long-run option. In the meantime, qualitative work employing focus groups of employers and employees, as well as in-depth interviews, can investigate whether the gap in hourly earnings detected in this analysis can be explained in part by omitted variables such as firm-specific or general experience; qualitative work can also help directly detect discriminatory practices in wage setting. If additional qualitative work confirms or strongly suggests the presence of discrimination, a policy discussion on possible remedies is warranted. These policy options might range from enforcement of existing non-discrimination legislation to informational campaigns targeting both employers and female employees.

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Annex 1. Additional tables from KIHS 2003.

Table A 1: Employment by sector, thousands and percent.

	Thousands			Percent		
	Rural	Urban	Total	Rural	Urban	Total
Agriculture	787	48	835	63.2	7.0	43.2
Agriculture, hunting and forestry	787	47	834	63.2	6.9	43.2
Fishing industry	0.2	0.3	1	0.0	0.0	0.0
Industry	58	130	188	4.6	19.0	9.7
Mining	2	11	13	0.1	1.6	0.6
Manufacturing	42	99	140	3.3	14.4	7.3
Utilities (gas, electricity, water)	14	21	35	1.2	3.0	1.8
Construction	47	55	102	3.8	8.0	5.3
Services	353	453	806	28.4	66.0	41.7
Trade	99	159	258	8.0	23.1	13.4
Hotels and restaurants	8	26	34	0.7	3.8	1.8
Transports and communications	40	57	98	3.2	8.4	5.1
Finance	2	8	10	0.2	1.1	0.5
Real estate	7	22	28	0.5	3.2	1.5
Public sector	44	47	91	14.4	21.8	17.0
<i>Public administration</i>	95	61	156	3.5	6.9	4.7
<i>Education</i>	40	41	81	7.7	8.9	8.1
<i>Healthcare and social services</i>	11	28	39	3.2	6.0	4.2
Utilities, social and personal services	6	4	10	0.9	4.0	2.0
Housing services	0	1	1	0.5	0.6	0.5
Activity of extraterritorial organizations	787	48	835	0.0	0.1	0.0
TOTAL	1244	686	1930	100	100	100

Table A 2. Employment by socio-economic status, thousands and percent.

	Thousands		Percent	
	Rural	Urban	Rural	Urban
TOTAL	1244	686	100	100
<i>Employees</i>	405	496	33	72
Enterprise, institution, organization	285	346	23	50
Hired by separate citizens (household)	120	151	10	22
<i>Other</i>	839	190	67	28
Employers	13	13	1	2
Self-employed	410	148	33	22
Member of producers co-op (Artel)	16	2	1	0
Unpaid family worker	244	8	20	1
Personal subsidiary plot	156	19	13	3

Source:

Annex 2. Probit regression on labor force participation separate for males and females.

To investigate the variables affecting labor force participation, we estimate a probit model in which the dependent variable assumes value 1 if the person is in the labor force (i.e. working or actively looking for work) and 0 otherwise. The exogenous socio-economic and personal characteristics assumed to influence labor force participation are: (i) age (ii) age squared (iii) whether the person is head of household (iv) marital status (v) no. of children not yet in school and (vi) no. of children already in school (vii) educational level and (viii) location (dummies for oblasts). We estimate the model separately for sub-samples of men and women in order to allow the coefficients on all explanatory variables to differ between the two sub-samples; we then compare the marginal effects of each explanatory variable for the two sub-samples.

Table A3 reports differences relative to a person who is unmarried, who is not the household head, has no children at all, with no education levels, and living in Bishkek City. In probit regressions the regression coefficients are not directly interpretable. Thus, we report the marginal effects in the table below.

Table A 3. Estimation results.

Variable	Mean value of variable		Marginal effect	
	Females	Males	Females	Males
Worker characteristics				
Age	37	35	0.052	0.032
Age2	1671	1485	-0.001	0.000
Head	0.18	0.50	not significant	0.050
Married	0.51	0.57	-0.091	0.056
Household				
Kids in school	1.44	1.44	not significant	not significant
Kids not in school	0.55	0.53	-0.049	0.010*
Education				
Higher	0.12	0.12	0.330	0.175
Secondary u	0.64	0.65	0.217	0.186
Primary*	0.20	0.21	0.116*	0.100
Inc primary	0.02	0.01	0.251	not significant
In school	0.18	0.19	-0.309	-0.394
Oblast				
Issykkul	0.09	0.09	0.100	-0.027*
Jalalabat	0.17	0.18	0.074	-0.046
Naryn*	0.05	0.05	0.032*	-0.051
Batken	0.08	0.08	0.055	-0.029*
Osh	0.24	0.24	0.064	0.036
Talas	0.04	0.04	0.106	not significant
Chui	0.16	0.15	0.070	-0.062

* significance level btw 1-5 %

Participation increases with age for both men and women, but the gradient is steeper for women. Each additional year increases the participation rate for women by 5.2 percent while for men the effect is 3.2 percent. The negative coefficient on age-squared indicates that this increment to participation is declining over time.

Being a household head increases the probability of male participation by 5 percent, but does not affect female participation. This is surprising; one would expect female household heads to be more likely to work than non-female household heads, but the data do not bear this out. This may be due to the designation of household head which does not always imply main breadwinner.

Being married – as expected – increases the probability of male participation (by almost 6 percent) but decreases the probability of female participation (by more than 9 percent).

Children traditionally are seen as an indicator of an increased value of non-market time and thus negatively related to the work decision for females (Bowen & Finnegan, 1969), especially if children are not yet in school; this hypothesis is borne out by the estimated coefficients in our model. Having young children not yet in school decreases female labor force participation by 5 percent for males, on the other hand, having young children slightly increases the labor force participation rate. The presence of older children does not affect male or female participation rates.

A very important result is the differential impact of schooling on men's and women's labor force participation. In the probit regression results above, schooling generally increases the probability that both men and women will enter the labor force, but the impact is far more important for women—at both ends of the schooling spectrum. Having incomplete primary school studies (versus having no studies at all) increases the probability that women will work by 25%, while men's the impact on men's participation is much smaller (and statistically insignificant). Women with university studies are 33% more likely to enter the labor force than women with no studies, while men with university studies are only 18% more likely than males with no schooling. Thus, schooling seems to play a particularly important role for low skill and high skill women's entry into the labor force (with education as a proxy for skill level). At intermediate education levels, the size of the impact for men and women is very similar.

Finally, there are interesting geographical differences in labor force participation. Women outside the oblast of Bishkek are more likely to be in the labor force (ranging from 3 percent more likely in the case of Naryn oblast to 11 percent more likely in the case of Talas oblast. Men, on the other hand, are generally more likely to be in the labor force in Bishkek oblast. The decrease in participation rates in other oblasts ranges from 3 percent in the Batken oblast to 6 percent in Chui oblast. Only in the Osh oblast are men more likely to participate than in Bishkek.

In sum, the probit analysis highlights the importance of child care arrangements and education as key factors that permit women in the Kyrgyz Republic to participate in the labor force.

Annex 3. Oaxaca decomposition of earnings differentials.

This annex presents the method of decomposing inequality into its component parts that was first pioneered by Oaxaca (1973). Oaxaca's approach decomposes the wage differential into the two components: that due to differences between men and women in human capital characteristics and that due to differences in returns to the same characteristics. This latter component is frequently (and incorrectly) labeled as discrimination; it is more correctly labeled the "unexplained component" of wage gaps; discrimination is one of several factors—including unobserved heterogeneity—which might explain the unexplained component.

We use an adaptation of the Oaxaca methodology that decomposes the wage gap into three component parts. Hourly earnings for the two groups (female and male) are described by the linear model:

$$Y_1 = X_1 b_1 + e_1$$

$$Y_2 = X_2 b_2 + e_2$$

The mean outcome difference between the two groups can be decomposed as:

$$R = x_1' b_1 - x_2' b_2 = (x_1 - x_2)' b_2 + x_2' (b_1 - b_2) + (x_1 - x_2)' (b_1 - b_2) = E + C + CE$$

where x_1 and x_2 are the vectors of means of the regressors (including the constants) for the two groups. In other words, R is decomposed into one part that is due to differences in endowments (E), one part that is due to differences in coefficients (including the intercept) (C), and a third part that is due to interaction between coefficients and endowments (CE). In this model the explained difference in hourly earnings is given by the sum of endowment coefficient (E) and the interaction term (CE), while the unexplained difference is given by (C).

We estimate the model for female and male separately where the dependent variable is the logarithm of hourly earnings and the explanatory variables are the following: level of education (from high to no education), the occupation and economic activity from the standard ILO classification, oblast dummies, head of the family status, and marital status. By including occupations as an explanatory variable, we control for the effects of occupational choice or segregation on earnings.

The decomposition table below (Table A4) shows how much of the hourly earning differential in public, private formal and informal sector in urban areas is due to individual characteristics (endowments) and how much is unexplained. Complete estimation results are provided in Tables A5 and A6.

Table A 4. Oaxaca decomposition of earnings differentials.

	Coefficient	P>|z|	[95% Conf. Interval]	
Public sector				
Difference	0.42	0	0.38	0.47
<i>Three-fold decomposition</i>				
Endowments (E)	0.07	0.118	-0.02	0.16
Coefficients (U)	0.14	0.001*	0.06	0.22
Interaction (CE)	0.21	0*	0.10	0.32
Private formal sector				
Difference	0.28	0	0.24	0.32
<i>Three-fold decomposition</i>				
Endowments (E)	0.02	0.563	-0.05	0.09
Coefficients (U)	0.22	0*	0.16	0.28
Interaction (CE)	0.04	0.313	-0.04	0.12
Private informal sector				
Difference	0.25	0	0.20	0.29
<i>Three-fold decomposition</i>				
Endowments (E)	0.09	0.285	-0.07	0.24
Coefficients (U)	0.11	0.002*	0.04	0.18
Interaction (CE)	0.06	0.518	-0.11	0.22

Source: Staff estimates based on KIHS 2003. * Significant at < 1 percent level.

The mean hourly earning differential in urban areas in the public sector is 0.420;²² if we decompose the hourly earnings gap into explained (E+CE) and unexplained earning differentials (C), the explained portion of earning differential (endowments plus interaction term) explains 67 percent of the existing earnings gap. The portion of the gap attributable to differential returns to endowments (unexplained, C) is small. Thus, while earnings gaps are large in the public sector in urban areas (women on hourly earnings, on average, are only 67% of men's—see Table 9 in the main text), the vast majority of the gap is explainable by differential endowments; no case can be made for the potential role of discrimination.

In the private formal sector the situation is reversed: the majority of the earnings differentials is unexplained. If we decompose the hourly earning gap of 0.281 in the private formal sector into explained (E+CE) and unexplained (C) components, we see that 79% of the hourly difference in hourly earnings is unexplained. In the private informal sector, 43% of the earnings gap is unexplained.

²² Note that earnings gaps are expressed as the difference in the natural logarithm of male and female earnings.

Table A 5. Wage equation: males in urban areas

Explanatory variable	Coefficient	Std. Err.	t-statistic	P>|t|	[95% Conf	. Interval]
age	0.013	0.004	3.24	0.001	0.005	0.02
age2	0	0	-5.29	0	0	0
higheredu	0.479	0.181	2.64	0.008	0.124	0.834
secondary	0.245	0.18	1.37	0.172	-0.106	0.597
primary	-0.045	0.18	-0.25	0.802	-0.398	0.308
incprimary	-0.081	0.199	-0.41	0.684	-0.472	0.309
married	0.243	0.028	8.78	0	0.189	0.297
head	0.221	0.025	8.85	0	0.172	0.27
fishing	-1.148	0.284	-4.05	0	-1.704	-0.592
mining	0.557	0.083	6.72	0	0.395	0.719
manufact	0.513	0.068	7.58	0	0.38	0.646
elect	0.512	0.07	7.31	0	0.375	0.649
constr	0.468	0.071	6.59	0	0.329	0.607
wholesale	0.665	0.068	9.73	0	0.531	0.8
hotel	0.519	0.107	4.85	0	0.309	0.729
transport	0.617	0.07	8.79	0	0.479	0.754
finan	0.371	0.115	3.22	0.001	0.145	0.596
estate	0.335	0.077	4.32	0	0.183	0.487
admin	0.223	0.068	3.29	0.001	0.09	0.355
acteducation	-0.03	0.071	-0.42	0.676	-0.17	0.11
health	-0.015	0.076	-0.2	0.841	-0.164	0.134
socialserv	0.305	0.078	3.89	0	0.151	0.458
privatehh	-0.046	0.245	-0.19	0.85	-0.527	0.434
extrater	-0.536	0.171	-3.14	0.002	-0.87	-0.201
legislator	0.631	0.056	11.33	0	0.522	0.74
professional	0.48	0.046	10.55	0	0.391	0.57
tehnician	0.411	0.045	9.09	0	0.323	0.5
clerk	0.435	0.062	6.96	0	0.312	0.557
servicework	0.239	0.042	5.74	0	0.158	0.321
skilledagric	0.307	0.076	4.06	0	0.159	0.455
tradework	0.251	0.037	6.77	0	0.179	0.324
machoperat	0.245	0.042	5.79	0	0.162	0.328
constant	7.034	0.202	34.74	0	6.637	7.43
Number of obs	9657					
Population size	3200766					
F statistic	74.01					
R-squared	0.237					

Table A 6. Wage equation: females in urban areas.

Explanatory variable						
	Coefficient	Std. Err.	t-statistic	P>|t|	[95% Conf	. Interval]
age	0.023	0.003	7.18	0	0.016	0.029
age2	0	0	-7.75	0	0	0
higheredu	0.503	0.085	5.89	0	0.336	0.671
secondary	0.191	0.078	2.43	0.015	0.037	0.345
primary	-0.029	0.078	-0.37	0.71	-0.183	0.124
incprimary	0.06	0.093	0.65	0.516	-0.122	0.242
married	-0.056	0.027	-2.09	0.037	-0.108	-0.003
head	0.069	0.03	2.3	0.021	0.01	0.128
fishing	-0.13	0.078	-1.66	0.096	-0.284	0.023
mining	0.68	0.228	2.99	0.003	0.234	1.126
manufact	0.267	0.079	3.36	0.001	0.111	0.422
elect	0.261	0.123	2.12	0.034	0.02	0.501
constr	0.339	0.096	3.52	0	0.15	0.527
wholesale	0.353	0.081	4.36	0	0.195	0.512
hotel	0.212	0.084	2.52	0.012	0.047	0.378
transport	0.313	0.089	3.52	0	0.139	0.487
finan	0.334	0.128	2.61	0.009	0.083	0.585
estate	-0.067	0.095	-0.7	0.482	-0.252	0.119
admin	0.103	0.081	1.27	0.203	-0.055	0.261
acteducation	-0.256	0.078	-3.29	0.001	-0.409	-0.103
health	-0.332	0.078	-4.27	0	-0.484	-0.179
socialserv	0.34	0.089	3.82	0	0.166	0.514
privatehh	-0.062	0.127	-0.49	0.623	-0.31	0.186
extrater	-0.402	0.121	-3.33	0.001	-0.639	-0.165
legislator	0.484	0.08	6.08	0	0.328	0.64
professional	0.354	0.047	7.5	0	0.262	0.447
tehnician	0.298	0.038	7.8	0	0.223	0.373
clerk	0.221	0.049	4.54	0	0.126	0.316
servicework	0.158	0.034	4.61	0	0.091	0.225
skilledagric	-0.027	0.081	-0.33	0.741	-0.185	0.132
tradework	0.17	0.042	4.01	0	0.087	0.253
machoperat	0.069	0.069	1.01	0.315	-0.065	0.203
_constant	7.031	0.125	56.23	0	6.786	7.276
Number of obs	9996					
Population size	3200766					
F-statistic	176.38					
R-squared	0.1741					

Annex 4. Propensity score matching estimations.

How can we address the issue of earnings differences across female and non-female dominated occupations, i.e. the question of whether women with similar characteristics across FD and NFD occupations differ in their earnings? One approach is to estimate a double selection model (labor force participation and occupational choice) like that estimated by Pitts (2003). Using data from the United States, she determines that—after controlling for factors that influence the decision to enter the labor force and choose a given occupation—women in FD earn more than they would have earned in MD occupations.

Given the difficult identification issues in estimating a double selection model, we choose a different approach, propensity score matching. In the evaluation literature, data often do not come from randomized trials but from (non-randomized) observational studies. Rosenbaum and Rubin (1983) proposed propensity score matching as a method to reduce the bias in the estimation of treatment effects, and this methodology has become increasingly popular in the evaluation of economic policy interventions. Since in observational studies assignment of subjects to the treatment and control groups is not random, the estimation of the effect of treatment may be biased by the existence of confounding factors. Propensity score matching is a way to “correct” the estimation of treatment effects by matching individuals in treatment (participant) and control (non-participant) groups based on their a priori probability of having participated. This propensity score (of participation) is estimated by a logit or probit regression (Table A8 below). The extent to which this bias is reduced depends crucially on the richness and quality of the control variables used to estimate the propensity score.

We are interested in investigating whether the average hourly earnings of women in FD occupations is lower than women who—although working in NFD occupations—have a similar a priori probability of working in FD occupations. Thus, we attempt to ensure that the comparison of wages is between women in FD occupations and women in NFD who are substantially similar. If, after doing this matching procedure, we find that the average hourly earnings of women in FD occupations are higher than the average earnings of similar women in NFD occupations, there is no reason to promote women entering NFD occupations; their decision to work in FD occupations would be eminently logical and income-maximizing.²³

Table A7 contains the results of the propensity score matching estimation. We find that when controlling for characteristics, women working in FD occupations in the private sector—both formal and informal—have significantly higher hourly earnings than women who have similar characteristics and (a priori) the same probability of working in FD occupations, but who are actually working in NFD occupations.

- In the private formal sector, women in FD occupations earn 46.4 percent more (39.08 soms per hour versus 26.69 soms per hour) than similar women in NFD occupations. This is significantly larger than the observed gap of 14.4 percent (39.08 versus 34.15 som) for unmatched female workers.
- In the private informal sector, women in FD occupations again earn more than similar women in NFD occupations; in this case, the wage premium to working in FD occupations falls slightly when the matching exercise is undertaken.

²³ This assumes away any non-wage elements in the decision calculus—a restrictive and probably not very realistic assumption.

The situation in the public sector is fundamentally different. Women working in FD occupations earn less than their counterparts in NFD occupations, and matching generates a slightly larger wage gap than a naïve comparison of mean wages (15.5 percent versus 13.3 percent).

Table A 7. Results of propensity score matching: women’s earnings in female-dominated and non-female-dominated occupations (in Som)

	FD occupation	NFD occupation	Difference
Private formal sector			
Hourly earnings-unmatched	39.1	34.2	4.9
Hourly earnings—matched*	39.1	26.7	12.4
Private informal sector			
Hourly earnings-unmatched	30.3	24.1	6.1
Hourly earnings—matched*	30.3	25.1	5.2
Public sector			
Hourly earnings-unmatched	24.2	27.9	-3.7
Hourly earnings—matched*	24.2	28.6	-4.4

Source: staff estimates based on KIHS 2003. *also know in the literature as average treatment effect on the treated--ATT

Table A 8. Econometric results from the estimation of the propensity score equation: logit estimation of the probability of working in a female-dominated occupation.:

a. Public sector

	Coef.	Std. Err.	z	P>|z|	95% Conf. Interval
Age	0.032	0.023	1.39	0.163	-0.013 0.077
age2	0.000	0.000	-1.63	0.103	-0.001 0.000
Higheredu	0.271	0.072	3.77	0	0.130 0.412
Married	-0.114	0.077	-1.48	0.138	-0.264 0.037
Constant	0.643	0.435	1.48	0.139	-0.209 1.495
Number observations	2170				
LR chi2(6) =	19.26				
Prob > chi2 =	0.0007				
Pseudo R2	0.0123				
Log likelihood	-771.735				

b. Private formal sector

	Coef.	Std. Err.	z	P>|z|	95% Conf	Interval
Age	-0.015	0.018	-0.86	0.392	-0.049	0.019
age2	0.000	0.000	0.37	0.714	0.000	0.001
Higheredu	5.691	0.326	17.46	0	5.052	6.330
Secondary	5.291	0.320	16.53	0	4.664	5.919
Primary	5.052	0.334	15.15	0	4.399	5.706
Married	-0.174	0.061	-2.87	0.004	-0.293	-0.055
Constant	-5.138	.	.	.	.	.
Numb obs.	2040					
LR chi2(6) =	59.98					
Prob > chi2 =	0					
Pseudo R2	0.0221					
Log likelihood	-1327.03					

c. Private informal sector

	Coef.	Std. Err.	z	P>|z|	95% Conf	Interval
Age	0.012	0.013	0.87	0.384	-0.015	0.038
age2	0.000	0.000	-1.9	0.057	-0.001	0.000
Higheredu	6.385	0.538	11.88	0	5.331	7.439
Secondary	6.032	0.531	11.35	0	4.991	7.074
Primary	5.536	0.536	10.33	0	4.486	6.587
Ineprimary	4.703	.	.	.	.	.
Married	-0.414	0.056	-7.35	0	-0.524	-0.303
Constant	-6.140	0.563	-10.9	0	-7.245	-5.036
Numb obs.	2366					
LR chi2(6) =	145.45					
Prob > chi2 =	0					
Pseudo R2	0.0472					
Log likelihood	-1468.15					

Source: staff estimates based on KIHS 2003