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Armenia Promoting Productive Employment

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US\$1=1,539 AMD

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FISCAL YEAR

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ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
Armstat	Armenian Statistical Service
BEEPS	Business Environment and Enterprise Performance Survey
EBRD	European Bank for Reconstruction and Development
EU	European Union
GDP	Gross Domestic Product
IBRD	International Bank for Reconstruction and Development
ILCS	Integrated Living Conditions Survey
ILO	International Labor Organization
NEET	Neither in Education, Employment, or Training
NSS	National Sample Surveys
OECD	Organization for Economic Cooperation and Development
PES	Public Employment Services
U/V ratio	Unemployment/Vacancies ratio

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TABLE OF CONTENTS

Acknowledgments.....	iv
Executive Summary.....	1
I. Main Challenges	2
II. Profile of Unemployment	12
III. Nature of Employment.....	17
IV. Wage Structure.....	25
V. Labor Market Outcomes and Poverty	30
VI. Conclusions and Policy Implications.....	38
Annex.....	40
References.....	44

TABLES

Table 1. Main labor force indicators, 2010.....	6
Table 2. Low paid employment, 2010	24
Table 3. Summary of wage distribution by sector, 2010	26
Table 4. Labor force status and poverty, 2010.....	30
Table 5. Worker characteristics and poverty, 2010	33
Table 6. Job characteristics and poverty, 2010	34

FIGURES

Figure 1. Employment rate in Armenia is lower than in most European countries.....	4
Figure 2. Majority among the unemployed are new labor market entrants	5
Figure 3. Unemployment is of long duration.....	6
Figure 4. Few young people who are not in education or employment are actively seeking work	7
Figure 5. A large proportion of workers are employed in low-productivity agriculture	8
Figure 6. Innovative firms are constrained by skill shortages	9
Figure 7. Workforce skills are only one among numerous obstacles to job creation in Armenia.....	10
Figure 8. Employment growth is lagging behind population and GDP growth	11
Figure 9. Youth represent a large group among the unemployed, especially in rural areas....	13
Figure 10. Many of the unemployed have no technical skills, but many have technical or tertiary education	14
Figure 11. The type of education completed has little effect on employment chances	15
Figure 12. Relatively few of the unemployed turn to the Public Employment Services to search for a job.....	16

Figure 13. Armenian workers are well educated	17
Figure 14. Armenian industries ranked by graduate intensity	18
Figure 15. Young workers are moving away from agriculture to more productive industries	19
Figure 16. Informal employment is common even among workers with tertiary education...	21
Figure 17. Overskilling among highly educated workers is common in the informal sector..	22
Figure 18. Informal employment as a stepping stone to regular employment.....	23
Figure 19. Wage inequality is relatively high in Armenia.....	26
Figure 20. On average, tertiary educated workers earn 30 percent more than secondary educated workers	27
Figure 21. Premium to university education is the highest at the top of the pay scale.....	28
Figure 22. Low wages in skill intensive social services	28
Figure 23. Urban unemployed face a particularly high risk of poverty.....	31
Figure 24. Informal workers are most likely to be poor	32
Figure 25. High work intensity of the household greatly reduces the risk of poverty.....	35
Figure 26. A high share of households with low work intensity	36
Figure 27. The risk of poverty falls sharply with the increase in household's earnings capacity	37
Figure 28. Households with low earning capacity increase work intensity.....	37

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Executive Summary

1. This paper examines labor market outcomes in Armenia and their impact on poverty. The outcomes are of considerable concern: relatively few persons of working age are employed, and many of those who are employed have low-productivity jobs. The problem is not only high unemployment, but also low labor force participation. The main factor behind the low employment/population ratio is weak labor demand and the scarcity of productive job opportunities. Few new jobs are being created despite relatively strong economic growth. The severe underutilization of labor translates into poverty. Households where few persons are employed or households with low earnings are often poor. Skills play an important role in determining labor market outcomes. Highly educated workers face a lower risk of unemployment, earn higher wages, and thus, are less likely to be poor. The key to improving labor market outcomes and to reducing poverty in Armenia is to foster job creation in the modern sector of the economy through encouraging investment and firm creation and growth. This strategy will work if workers are equipped with the skills required in modern firms. And there is room to improve matching of workers with jobs through strengthening Public Employment Services.

2. The empirical analysis presented in the paper focuses on the current structure of the labor market in Armenia using primarily the 2010 Integrated Living Conditions Survey (ILCS). The survey was carried out by the Armenian Statistical Service (Armstat) and is used to produce official income and labor market statistics. As a household based survey, ILCS provides information on the supply side of the labor market. Consequently, the empirical analysis presented covers mainly supply side issues; however, the paper emphasizes the role of demand side factors in determining employment outcomes in Armenia.

3. This paper begins in Section I by discussing the main labor market challenges in Armenia, before focusing on unemployment in Section II. Section III analyzes the nature of employment and jobs, while Section IV examines wage determination and structure. Section V then evaluates the relationship between individuals' and households' labor market status and poverty. Finally, Section VI concludes with policy implications of the analysis.

I. Main Challenges

4. Unemployment and low-productivity are the two main labor market issues in Armenia. First, few persons of working age are employed. Second, among those who are employed, many hold low-productivity jobs. The main cause of the underutilization of labor resources is the slow pace of job creation in the formal sector of the economy. This low rate of job creation persists despite economic growth. This is because economic growth has been achieved mainly through productivity gains. As a consequence, growth has not produced an increase in employment and a fall in unemployment. The rest of this section elaborates on these issues.

5. By European standards, the employment/working age population ratio is extremely low in Armenia. Out of 100 persons of working age (15-64), only 53 are employed in Armenia, which is less than in any other EU country. The economic and social cost of the low employment rate is very high. The GDP is lower than the potential one, and accordingly, people have lower incomes. In the best performing EU countries, such as Netherlands, Denmark or Austria, the employment rate exceeds 70 percent. On average the employment rate sits around 60 percent.

6. In order to reach the 60 percent employment rate Armenia would need to create an additional 166,000 jobs. This would lead to a 14 percent increase in employment, and to some decrease in unemployment.¹ Furthermore, the increase in employment could contribute to an increase in GDP (of approximately 8 percent, assuming the labor's share of national income is 60 percent).² Thus, the effect of increasing the employment rate from 53 to 60 percent could be substantial. Armenia would be a richer country and poverty would be less prevalent.

7. Reaching the modest 60 percent employment rate is a realistic medium-term target. To reach this target, Armenia needs to support job creation by fostering investment, facilitating the creation of new firms, and supporting their growth. This requires, among other actions, improvements in the investment climate.³ Box 1 shows the need for Armenia to proceed with business environment reforms in order to catch up with most advanced transition economies of Central and Eastern Europe.

¹ The magnitude of the decrease in unemployment would depend on the degree to which the skills possessed by the unemployed match the skill requirements of the newly created jobs. As a rule, newly created jobs require skills that are different (usually higher) than those required in the jobs that were destroyed. Thus, because of the skill mismatch, an increase in the number of jobs does not necessarily translate into a commensurate decrease in unemployment.

² This estimate is used purely for illustrative purposes, and is based on the ceteris paribus assumption; in particular, it assumes that the productivity of newly created jobs is the same as that of existing jobs. As such, it is likely to provide a lower-bound estimate of the income gain because newly created jobs tend to be more productive than existing ones.

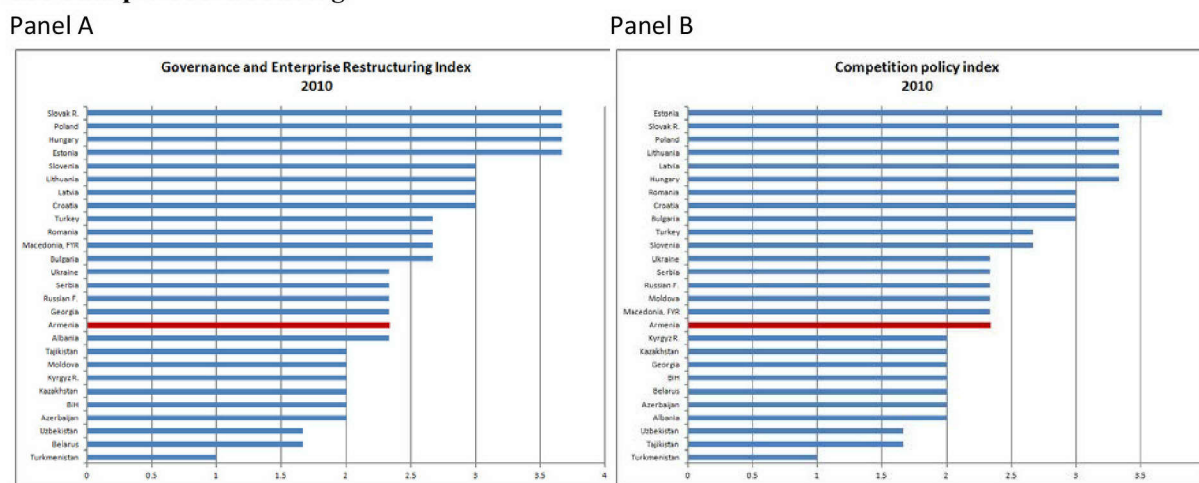
³ See "Chapter VI: Enterprise restructuring, investment climate and job creation", in *Social Snapshot and Poverty in Armenia*, Statistical Analytical Report, National Statistical Service of RA and The World Bank, Yerevan 2006.

Box 1. Improvements in business environment are necessary to foster job creation in Armenia

Why is labor demand so weak in Armenia? A number of factors influence labor demand, with the quality of business environment standing out. Importantly, the business environment is shaped by policies, unlike some other factors that are beyond policymakers’ control (e.g. geography, global economic conditions, the perception of business opportunities and investors’ confidence). Existing evidence indicates that there is substantial space to improve the business environment in Armenia, and thus to encourage firm formation and growth, and consequently to support a faster pace of job creation.

Figure A shows that Armenia has made less progress in developing the policies and institutions of a market economy compared to some of the leading transition economies. Governance is weaker, enterprise restructuring is less advanced, and the environment is less competitive. The areas within the business environment where Armenia is particularly weak by international standards are listed in Table A, which shows Armenia’s ranking compared with that of the two most business friendly countries in the region (Estonia and Georgia). Paying taxes, getting electricity and trading across borders are particularly onerous in Armenia.

Figure A. Armenia lags behind the most advanced transition economies in terms of governance and enterprise restructuring



Source: EBRD Transition Indicators available at <http://www.ebrd.com/pages/research/economics/data/macro.shtml>; Bank staff calculations.

Table A. Top five obstacles to doing business in Armenia, 2011.

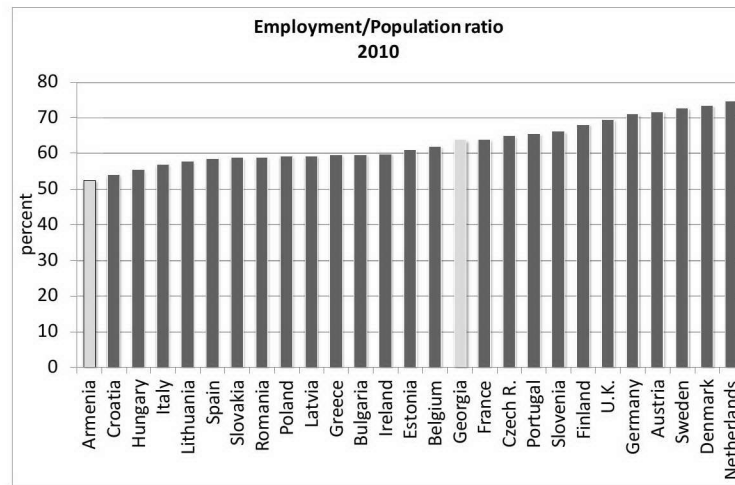
Doing business rank

Area	Armenia	Estonia	Georgia
Paying taxes	159	42	62
Getting electricity	148	48	91
Trading across borders	103	4	34
Dealing with construction permits	148	37	6
Protecting investors	93	60	21
Overall rank	61	18	17

Source: World Bank Doing Business database; <http://www.doingbusiness.org>.

The above data indicate that the costs of doing business are relatively high, despite significant progress in recent years. These high costs impede investment and firm growth, which translates into lower demand for labor. Accordingly, further lowering the costs of doing business is an essential component of policies to increase employment and reduce unemployment.

Figure 1. Employment rate in Armenia is lower than in most European countries



Source: ILCS 2010; Bank staff calculations.

8. **The low employment rate is mainly a result of high unemployment.** With the unemployment rate approaching 20 percent, unemployment in Armenia is very high by European standards. The augmented unemployment rate, which takes into account persons of working age who are available for work, but are not actively looking for jobs, approaches 30 percent.⁴ The vast majority of persons who are available for work are “discouraged workers,” persons who ceased looking for work because they no longer believe they can find a job. The augmented unemployment rate is thus a measure of the size of the unutilized labor pool, and for Armenia, represents a significant economic loss in terms of forgone output, and a considerable social cost in terms of elevated poverty levels. As we will show later, both the unemployed and discouraged workers face a particularly high risk of poverty (see Section V).

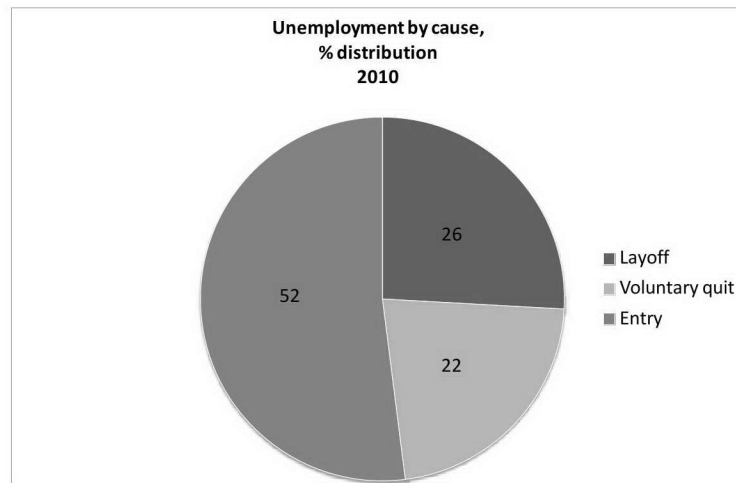
9. **Unemployment is particularly high among youth.** The unemployment rate among persons aged 20-24 is 38 percent, and the augmented unemployment rate is 49 percent (Table 1). According to international experience, the youth unemployment rate is about twice as high as the total unemployment rate, and Armenia is no exception. The high youth unemployment rate reflects the difficulty of the school-to-work transition and the likelihood that young workers change jobs more frequently than older workers. In actuality, young workers tend to experience shorter unemployment spells, and the incidence of long-term unemployment among youth is lower than among older workers (Table 1). Still, where one out of two young people would like to work but does not, suggests a highly depressed labor market.

10. **High youth unemployment is a symptom of a broader problem: difficult entry into the labor market.** Contrary to common perception, in most cases, unemployment in Armenia is not caused by a job loss due to a lay-off. The majority of the unemployed are new labor market entrants, or persons without previous work experience, mostly youth. New labor market entrants represent over one-half of the unemployed, while job losers are only

⁴ The augmented unemployment rate is 29.4 percent for the population aged 15-64.

slightly more than one-quarter, the rest are people who voluntarily quit their jobs (Figure 2). Hence, the key to reducing unemployment in Armenia is facilitating labor market entry, particularly by easing the school-to-work transition. The often-advocated policy of protecting existing jobs would not be an effective tool since such protectionism does not address the underlying cause of unemployment in Armenia. After all, it could make labor

Figure 2. Majority among the unemployed are new labor market entrants

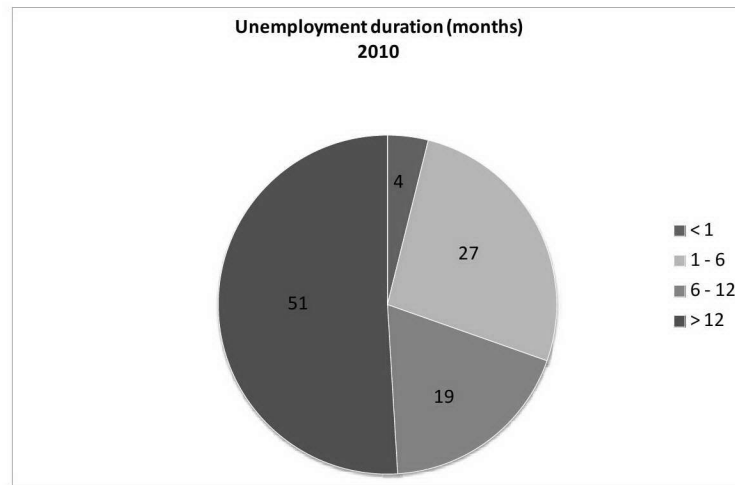


Source: ILCS 2010; Bank staff calculations.

market entry more difficult, further aggravating the unemployment problem by strengthening the position of insiders at the cost of weakening the position of outsiders (OECD 2004).

11. Lack of job opportunities leads to a long duration of unemployment. Every second unemployed person in Armenia is jobless for more than a year (Figure 3). This means outflows from unemployment to jobs are low. Meanwhile, inflows to unemployment are low too, as indicated by the small share of short-term unemployment (four percent). Thus, unemployment is high in Armenia primarily because those who become unemployed have difficulty escaping. The problem is not large inflows into unemployment, but small outflows from unemployment to jobs. This again implies that the key to reducing unemployment is facilitating movement from unemployment to work, rather than increasing employment protection.

Figure 3. Unemployment is of long duration



Source: ILCS 2010; Bank staff calculations.

12. Low labor force participation is an additional factor that contributes to the low employment rate. Only about two-thirds of persons of working age are employed or looking for work (Table 1). This is partly due to the discouraged worker effect mentioned above. Many workers would like to work, but withdraw from the labor force because of the perceived lack of job opportunities. As many as 35 percent of all persons aged 15-64 who are out of the labor force are available for work and would like to work. Hence, high unemployment and low labor force participation coincide due to weak labor demand.

Table 1. Main labor force indicators, 2010

<i>Percentages</i>				
	Employment rate	Unemployment rate	Share of long-term unemployed	Labor force participation rate
All workers	52.6	19.7 ^{a)}	51.0	65.5
Urban	44.0	28.0	51.4	61.2
Rural	68.9	6.7	48.1	73.9
Men	65.2	17.5	42.0	79.0
Women	42.7	22.3	59.2	54.9
15 – 19	8.8	44.4	27.2	15.8
20 – 24	34.8	37.5	40.8	55.6
25 – 54	63.2	17.3	53.6	76.4
55 – 64	59.7	13.5	65.4	69.0

a) According to official data (NSS 2011b), the unemployment rate was 19.0 in 2010. The discrepancy is caused by slight differences in definitions.

Note: Persons aged 15-64

Long-term unemployed = unemployed for more than 12 months.

Employment rate = Employment/Population of working age

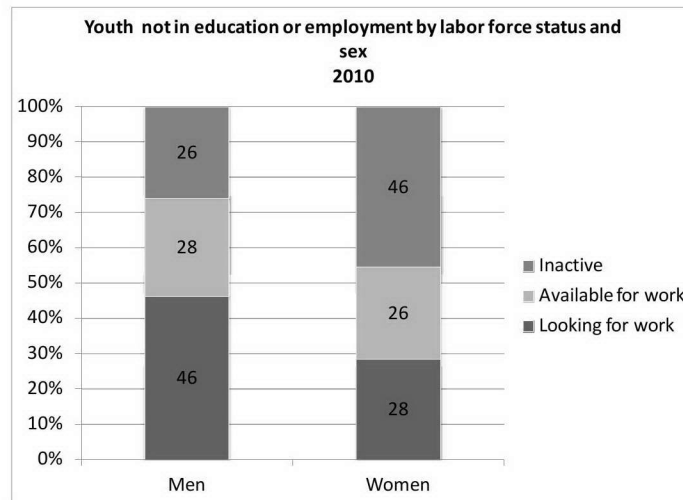
Source: ILCS 2010; Bank staff calculations.

13. The labor force participation rate is low in Armenia mainly due to the low economic activity of women. Only 55 percent of women of working age are economically active in Armenia (Table 1). For comparison, female economic activity in most EU countries is within the range of 65-70 percent, although often exceeds 70 percent (as in Denmark, Netherlands or

the UK). The activation of women is key to improving the utilization of labor in Armenia. Moreover, higher female employment is an important way to increase the standard of living.

14. Labor force participation is also low among youth. Naturally, many young people are economically inactive because they are enrolled in education. However, the proportion of youth (persons aged 15-24) who are not in education, employment or training (known as NEET) is extremely high in Armenia, compared to other European countries. As many as 39 percent of Armenian youth are neither in education nor in employment, which is two to three times more than in most EU countries (European Commission 2010), where the share of NEET rarely exceeds 15 percent.⁵ The share of economically inactive youth in Armenia is even higher (by 8 percentage points) than in neighboring Georgia, where youth unemployment is considered a problem. Importantly, the majority of Armenian NEETs are economically inactive: only one in three is actively looking for a job. The remaining two-thirds do little or nothing to enter the labor market. While the large proportion of young women classified as inactive NEETs may be due to parenting responsibilities, no such explanation exists for the significant proportion of men classified as NEETs (Figure 4).

Figure 4. Few young people who are not in education or employment are actively seeking work



Source: ILCS 2010; Bank staff calculations.

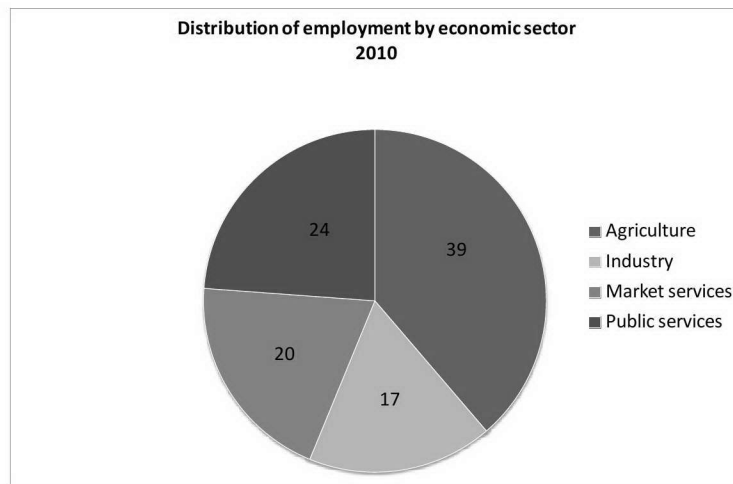
15. Low-productivity employment is also a challenge for the labor market in Armenia. Many existing jobs do not pay enough to lift people out of poverty. Nearly 40 percent of workers are employed in agriculture (Figure 5), while agriculture accounts for only 17 percent of GDP. This discrepancy between input and output implies that most agricultural jobs are of low-productivity. The share of the non-agricultural sector increased by less than one percentage point in the last five years. The modern, high productivity sector is still small. However, there is a potential for its expansion, as evidenced by strong growth of the ICT sector over the past few years.

⁵ Given that youth represent a relatively high share of the Armenian population (higher than in most Central European countries), the high proportion of NEET translates into a high *absolute* number of young people who are neither studying, nor working.

16. Informality is another correlate of low-productivity employment. According to official Armstat data, informal employment accounts for nearly 20 percent of total non-agricultural employment (ADB and NSS 2011). However, the estimates of the size of informality are sensitive to the criteria used to identify informal employment. The criterion used by Armstat is the lack of a written employment contract. If, instead, one uses the criterion of the eligibility to statutory annual and sick leaves (in the case of dependent workers), then informal employment represents as much as 43 percent of total non-agricultural employment in Armenia.⁶ On average, informal jobs pay less than formal jobs. The difference is small in the case of dependent workers (4 percent), but is large in the case of the self-employed: those with registered businesses earn over 90 percent more than those with unregistered ones.

17. Moreover, the proportion of low-paid jobs (outside agriculture) is high in Armenia by European standards. According to a standard definition, low-paid jobs are those, which pay less than two-thirds of the median wage. By this criterion, one in four jobs in Armenia is low-paid, which is significantly more than in most European countries, where the incidence of low-pay is within the 15-20 percent range (OECD 2010). Given that low-paid employment is often associated with poverty (see Section V), growth in labor productivity is essential for poverty reduction. Productivity gains have the biggest impact on poverty when achieved through the reallocation of labor from less to more productive uses. Such reallocation, associated closely with industrial restructuring, requires -- first and foremost -- a favorable investment climate.

Figure 5. A large proportion of workers are employed in low-productivity agriculture



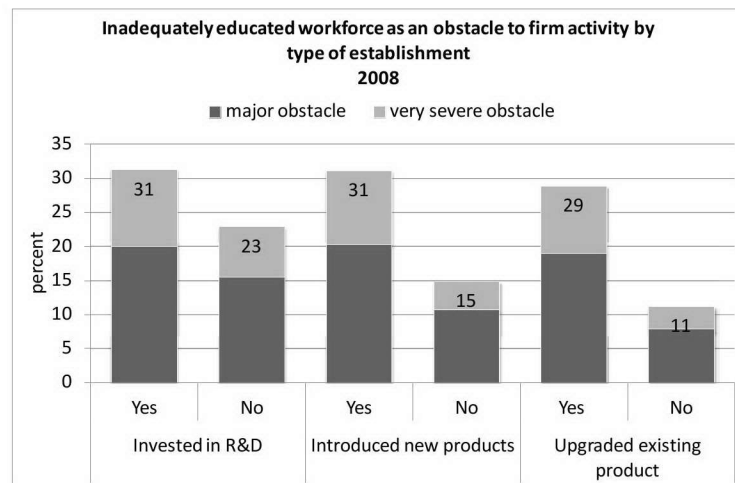
Source: ILCS 2010; Bank staff calculations.

18. Employers see workforce skills as a constraint to the creation of new, more productive jobs. Very few of the unemployed have less than a secondary education and one

⁶ Throughout this paper we define informal dependent workers as those who are not eligible for statutory annual and sick leaves. From the individual welfare perspective this criterion is more relevant than that of an employment contract. Unfortunately, information on the payment of social security contributions by the employer is not available. The self-employed are defined as informal if their business is not registered.

unemployed in four in urban areas has a tertiary education diploma. However, many Armenian firms complain that an inadequately educated workforce is a major obstacle to their operation and growth. Importantly, it is innovative and modern firms that suffer from skill shortages the most. Roughly, one innovative firm in three reports skill shortages as a major constraint (Figure 6).⁷ Traditional firms are affected by skill shortages to a lesser - but still non-negligible - extent. This raises the question of the quality of education and its relevance to labor market needs. Skill shortages coupled with high joblessness among highly educated workers point to a mismatch between skills required by employers and those possessed by the jobless.

Figure 6. Innovative firms are constrained by skill shortages



Source: EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS) 2008; Bank staff calculations.

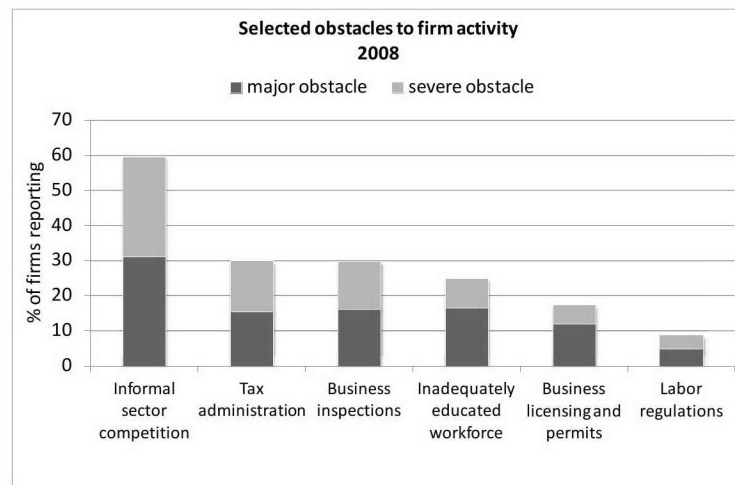
19. While workforce skills are an important obstacle to job creation, employers view several constraints as more pressing for job creation in Armenia. Employers claim that unfair competition by informal firms is the most detrimental impediment to job creation, as informal firms do not pay taxes and thus have a cost advantage (Figure 7). Employers also view red tape (tax administration) and bureaucratic harassment (frequent business inspections often associated with informal payments) as major obstacles, more important than skill shortages. In contrast, less than 10 percent of firms report labor regulations as an important obstacle to firm growth and hiring new workers.⁸ These results suggest that improvements in the business environment could have a significant impact on accelerating the pace of job creation and could address the root cause of high unemployment in Armenia. Particularly, efforts should concentrate on leveling the playing field by reducing the costs of doing

⁷ Firms are referred to as “innovative” or “modern” if, in the last three years, they invested in research and development, introduced a new product, or upgraded an existing product.

⁸ International comparisons reinforce the point that labor regulations are not a major obstacle for Armenian firms. According to the World Bank doing business indicators, hiring and firing costs are low in Armenia. Also, according to the Global Competitiveness Report (World Economic Forum 2011), hiring and firing practices in Armenia tend to be flexibly determined by employers rather than impeded by regulations. Based on the subjective assessment of hiring and firing flexibility by employers, Armenia is ranked 18th among 142 countries (for example, Georgia is ranked 10th, Estonia 28th and Hungary 50th).

business in the formal sector and therefore weakening incentives for informality. This primarily requires improving business regulations, reducing bureaucracy, limiting numerous business inspections and associated extortion. The results presented in Figures 5 and 6 also imply that investment in high quality education is necessary to supply firms with the skills needed to modernize and grow.

Figure 7. Workforce skills are only one among numerous obstacles to job creation in Armenia

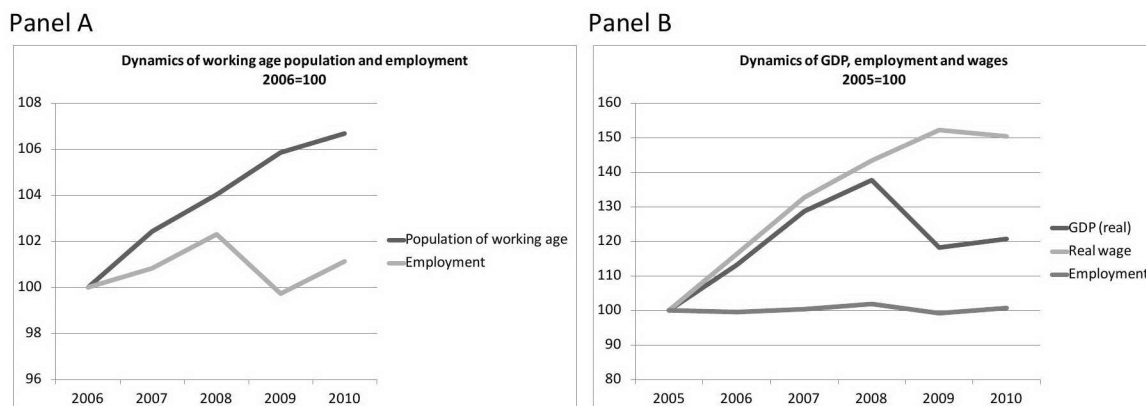


Source: EBRD-World Bank Business Environment and Enterprise Performance Survey (BEEPS) 2008; Bank staff calculations.

20. More jobs need to be created to absorb the growing labor surplus. Figure 8, Panel A shows that employment growth is lagging behind the growth in the working age population. This implies growing unemployment and a decline in the already low employment rate. Accelerating the pace of job creation is thus one of the main social challenges facing policymakers in Armenia.

21. Economic growth by itself will not suffice in solving the unemployment problem. High unemployment in Armenia has a structural, rather than a cyclical, character. Figure 8, Panel B shows that employment in Armenia is hardly responsive to output growth. The strong economic growth in recent years (with the exception of the 2009 crisis) has not produced many new jobs. Instead, gains in labor productivity have translated into higher wages. Real wages have been growing faster than labor productivity, implying an increase in the unit labor cost, which may contribute to the limited demand for labor.

Figure 8. Employment growth is lagging behind population and GDP growth



Source: ArmStat; Bank staff calculations.

22. In the longer run, improvements in labor productivity have a positive effect on social welfare. However, the short run effect may be ambiguous. First, labor productivity improvements may be associated with lack of employment growth, especially if coupled with fast wage growth. Second, improvements may have a weak effect on poverty if productivity gains are concentrated in sectors employing highly paid workers. In such a case, productivity growth translates into higher earnings inequality, as rich workers get richer, while poor workers gain little. Hence, for productivity growth to have a positive impact on poverty, improvements need to be associated with industrial restructuring and reallocation of labor from less productive towards more productive uses, or with productivity improvements in low productivity sectors, such as agriculture. Furthermore, it is important that in the longer term, wage growth does not exceed labor productivity growth. Otherwise, competitiveness of the Armenian economy could suffer due to a growth in the unit labor cost, which in turn, can have a detrimental effect on job creation.

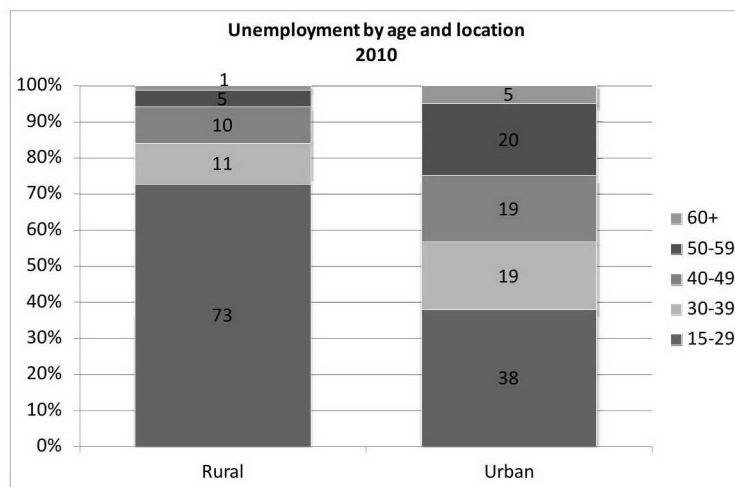
II. Profile of Unemployment

23. **Unemployment in Armenia is predominantly an urban phenomenon.** Many of the unemployed are young and relatively well educated. Persons with secondary general education are the single largest group among the unemployed, but there is also a relatively large group of unemployed with tertiary education. However, the risk of unemployment is the highest among workers with basic vocational training. The unemployed rarely register with the public employment agency, and seldom use the services provided. However, the bulk of those registered are genuinely unemployed.

24. **Open unemployment is a huge problem in urban areas in Armenia.** In contrast, in rural areas the problem is underemployment or low-productivity employment (see Section III). The unemployment rate in urban areas is extremely high at 28 percent, compared to less than 7 percent in rural areas. The apparent lack of job opportunities in urban areas is an impediment to labor mobility and industrial restructuring. People have little incentive to move from rural areas, where they at least can find some work, to urban areas, where work is hardly available. Faster job creation in urban areas is a necessary condition for a successful restructuring and modernization of the Armenian economy; in particular, for the movement of labor from low-productivity agriculture to higher-productivity activities located in urban areas.

25. **The age profile of the unemployed in urban and rural areas varies dramatically.** In rural areas, young workers are largely jobless. In urban areas, young workers represent a large, but not dominant, group among the unemployed. Specifically, in rural areas young workers (15-29) account for almost 75 percent of all the unemployed, while in urban areas they account for less than 40 percent (Figure 9). In urban areas, prime-age workers are the largest group among the unemployed. Urban unemployment reflects both the difficulty with finding the first job, and the difficulty of finding a new job after job loss. In contrast, rural unemployment is a problem of entering the labor market, as rural youth cannot find non-agricultural jobs in their neighborhood and have nowhere to go.

Figure 9. Youth represent a large group among the unemployed, especially in rural areas

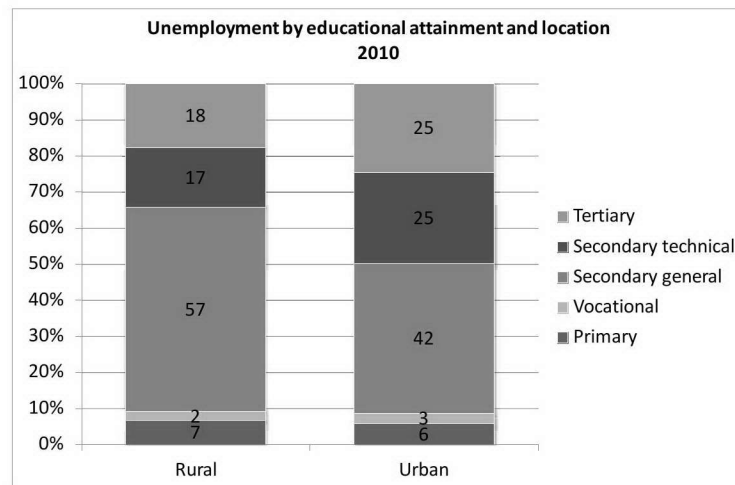


Source: ILCS 2010; Bank staff calculations.

26. Persons with a secondary general education, but no technical skills are the single largest group among the unemployed. In urban areas, this group represents over 40 percent of all unemployed, and in rural areas close to 60 percent (Figure 10). However, many of the unemployed, especially in the urban areas, have technical, occupation-specific skills. In urban areas, one unemployed in four has a secondary technical education and one in four has a tertiary education. In rural areas, the proportion of persons with tertiary or secondary technical education among the unemployed is smaller (jointly 35 percent), but still considerable. Hence, unemployment in Armenia has two components. One includes people with no or little technical, job-specific skills. The second encompasses people who possess technical skills and are highly educated, but are still unemployed. The employment challenges faced by these two major groups are likely to be different. For the unemployed who lack technical skills, the challenge is to acquire critical employability skills (both occupation-specific “hard” skills, and “soft” behavioral skills). For the unemployed who have technical, occupation-specific skills, the challenge is to find jobs matching their qualifications. An additional dimension of the problem may be that some of the unemployed have diplomas, but lack the skills required by employers, and the provision of training by employers is limited.⁹

⁹ Medium and large firms provided formal training to 16,400 employees in 2010 out of a total 529,100 employees. Assuming that small firms rarely provide formal training, the lower-bound estimate of the incidence of firm-provided training is 3.1 percent.

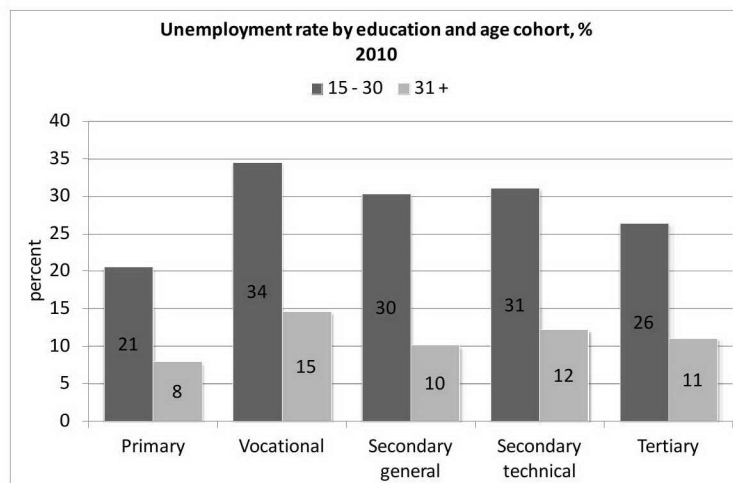
Figure 10. Many of the unemployed have no technical skills, but many have technical or tertiary education



Source: ILCS 2010; Bank staff calculations.

27. The type of education has little effect on employment chances. The unemployment rate among persons with secondary technical education is virtually the same as among persons with secondary general education. Young people with tertiary education are somewhat less likely to be unemployed than their counterparts with secondary education, but the difference is relatively small and disappears among the older age cohort (Figure 11). For example, the unemployment rate among young workers with secondary education is about 30 percent and 26 percent among their counterparts with a tertiary education. Unemployment sits around 11 percent for the older age cohort regardless of the type of diploma (with the exception of workers with basic vocational training who face a significantly higher unemployment rate, but are a small group among the unemployed). Thus, if viewed from the perspective of possible employment, the incentives to invest in tertiary education are limited.

Figure 11. The type of education completed has little effect on employment chances



Source: ILCS 2010; Bank staff calculations.

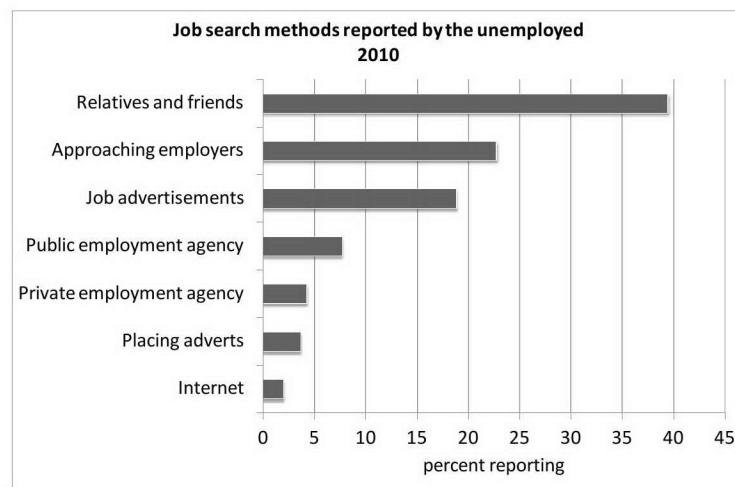
28. Few unemployed use public employment services (PES). Less than 10 percent of the unemployed register with the public employment office.¹⁰ Still less use the job brokerage services provided by the public employment offices when looking for a job (Figure 12). The dominant job search method, reported by 40 percent of the unemployed, is the assistance of relatives and friends, as is typical in most countries. Other common job search methods include directly approaching employers and checking job advertisements.

29. Of those registered as unemployed, the majority are genuine jobseekers. As many as 80 percent of the registered unemployed actively seek work and are available for work, which is a high proportion¹¹ However, 10 percent of the registered unemployed are neither looking nor available for work, that is they do not meet the criteria of unemployment. The remaining 8 percent are discouraged workers: those who are available for work, but who are not actively looking for a job.

¹⁰ This figure is according to the ILO/LFS criteria for “unemployed,” however, is inconsistent with the data on registered unemployment. The number of persons registered with the PES according to the LFS is significantly smaller than that according to the PES. There are two possible and complementary explanations. First, the LFS data may underestimate the number of people registered as unemployed because persons who registered at some point, but do not use employment services, may provide a negative answer to the question on registration. Second, the PES data may overestimate the stock of registered unemployed because persons who no longer are unemployed are not regularly removed from the register.

¹¹ In many countries a large proportion of the registered unemployed do not meet the standard criteria of unemployment.

Figure 12. Relatively few of the unemployed turn to the Public Employment Services to search for a job



Source: ILCS 2010; Bank staff calculations.

30. Few unemployed register with the public employment office due to the perceived minimal benefits from registration. First, few unemployed are eligible for unemployment and social assistance benefits. Second, as Figure 12 indicates, the unemployed do not view the job search assistance provided by the public employment offices as leading to job placement. Public employment offices have yet to develop a reputation – both among the unemployed and employers - as an agency providing effective job matching services. This first requires that they have good access to information on job vacancies, which currently is not always the case.

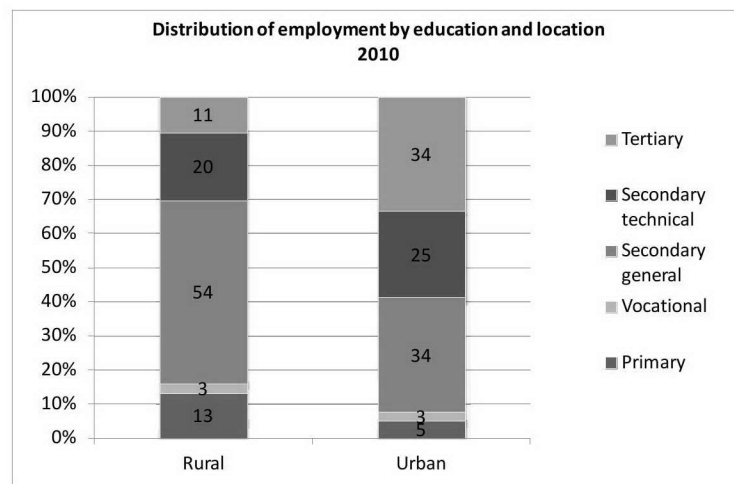
31. The effectiveness of job matching services provided by PES is limited because of the high unemployment/vacancies ratio. The number of registered unemployed per one vacancy reported to PES (U/V ratio) averages around 10 - 12 in Armenia (NSS 2011a). If the U/V ratio is high, then the job placement rate (the percentage of the unemployed placed to jobs) is bound to be low. As of 2010, only about 12 percent of registered unemployed were placed in jobs (NSS 2011a). The key to improving the effectiveness of PES is to increase the number of vacancies reported. This requires improving the vacancy penetration ratio, i.e. the proportion of all vacancies reported to PES. Although difficult to estimate, the vacancy penetration ratio is an important indicator of the effectiveness of PES, and reflects its capacity to reach out to the employers. In order to be able to effectively reach out to employers, PES needs to develop a reputation for providing high quality services. Enhancing its reputation is one of the main challenges faced by PES in Armenia. Meeting this challenge requires substantial investments in capacity building.

III. Nature of Employment

32. **Access to productive job opportunities is key to poverty reduction.** Workers who have good jobs are seldom poor. This section argues that many jobs in Armenia are of low productivity, despite the fact that workers who hold them often have high educational attainment. As a result, workers are overskilled, often having qualifications beyond those required for the jobs they perform. Low productivity is closely tied to widespread informality.

33. **Armenian workers are well educated.** Only a small proportion of workers have less than secondary education and these workers are concentrated in rural areas. In urban areas, one worker in three has a tertiary education, and one worker in four has a secondary technical education (Figure 13). A large group of workers also have a secondary general education, accounting for 54 percent of rural and 34 percent of urban employment.

Figure 13. Armenian workers are well educated



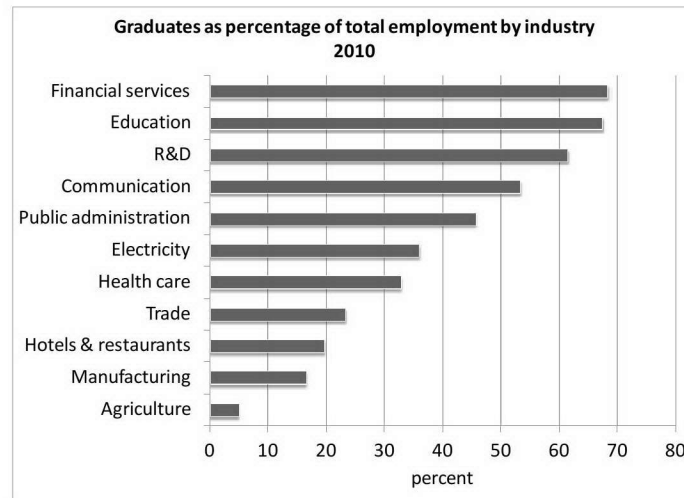
Source: ILCS 2010; Bank staff calculations.

34. **The majority of workers with a tertiary education are employed in the public sector.** The education system and public administration are the biggest employers of university-educated workers. Altogether, the government sector (public administration, education and health care) provides employment to 45 percent of tertiary-educated workers. By comparison, only 4.5 percent of workers with a university degree are employed in the manufacturing sector and 4.4 percent in the information and communication sector. Thus, university graduates primarily contribute to the provision of public services, rather than to the production of market goods and services.

35. **The public sector has more university graduates than the private sector.** While about 50 percent of all employees have a tertiary education in the public sector, only 13 percent of employees in the private sector hold a university degree. The most graduate intensive

industries in the private sector are financial intermediation (banking), where close to 70 percent of employees is university educated, and the information and communication industry, where the proportion exceeds 50 percent (Figure 14). In contrast, graduate density is modest in Armenian manufacturing: only 17 percent of employees have tertiary education. Hence, within the private sector the demand for graduates comes from the service, rather than from the industry sector.

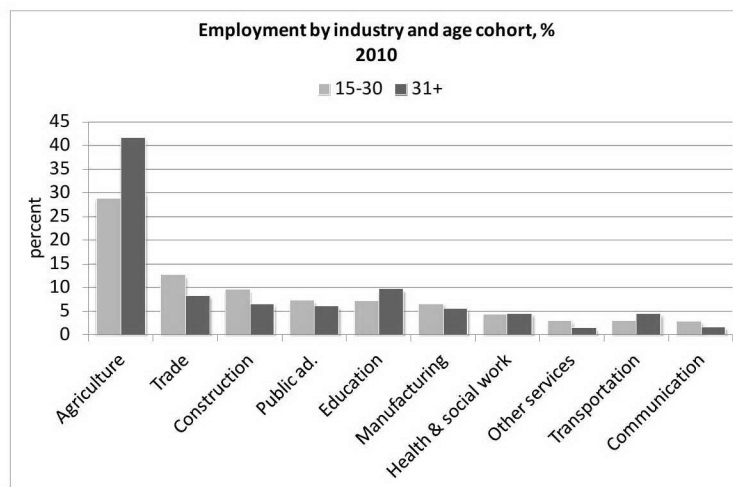
Figure 14. Armenian industries ranked by graduate intensity



Source: ILCS 2010; Bank staff calculations.

36. The employment structure in Armenia remains quite traditional, but young workers are moving into modern industries. Agriculture is the largest sector (39 percent of total employment), while industry and market services account jointly for 37 percent of total employment (public services account for the remaining 24 percent). However, the employment structure is changing. Young workers are less likely to work in agriculture and more likely to be employed in trade, construction, manufacturing, and information and communication industries than older workers (Figure 15). This industrial restructuring process in Armenia has a positive impact on poverty as labor moves from low-productivity agriculture to more productive jobs in the industry and service sectors.

Figure 15. Young workers are moving away from agriculture to more productive industries



Source: ILCS 2010; Bank staff calculations.

37. Informal employment is high in Armenia. Informal employment represents as much as 64 percent of total employment, and from 20 to over 40 percent of non-agricultural employment (depending on the criteria used to define informality, see footnote 4). From the welfare perspective, widespread informal employment has a number of negative effects, especially when caused by a lack of employment opportunities in the formal sector (that is, when it reflects “exclusion” rather than “exit”). These negative effects include low coverage of social protection benefits, lack of employment protection and associated job insecurity, often lower earnings, and finally underutilization of skills. On the other hand, the informal sector provides employment of last resort, and as such limits unemployment and thus can have a positive effect on poverty. Below we examine some of the characteristics of informality in Armenia.

38. Informal jobs are less secure than formal jobs. In the formal sector, virtually all employees have indefinite duration employment contracts in Armenia. Surprisingly, the indefinite duration employment contracts prevail in the informal sector as well.¹² However, contingent employment contracts (temporary or seasonal) are quite prevalent, and many informal workers have only a casual job without a contract. Altogether, 26 percent of informal workers have contingent jobs. By definition, such jobs last shorter than permanent jobs and are less secure.

39. Informal workers earn less than formal workers. While the difference is rather small in the case of dependent workers, it is dramatic in the case of the self-employed. On average, dependent workers in the formal sector earn about 5 percent more than their counterparts in

¹² Admittedly, the meaning of indefinite duration of employment contract in the case of informal workers, who by definition are not eligible for core employee benefits (sick leave and annual leave), is not clear. This issue requires further investigation.

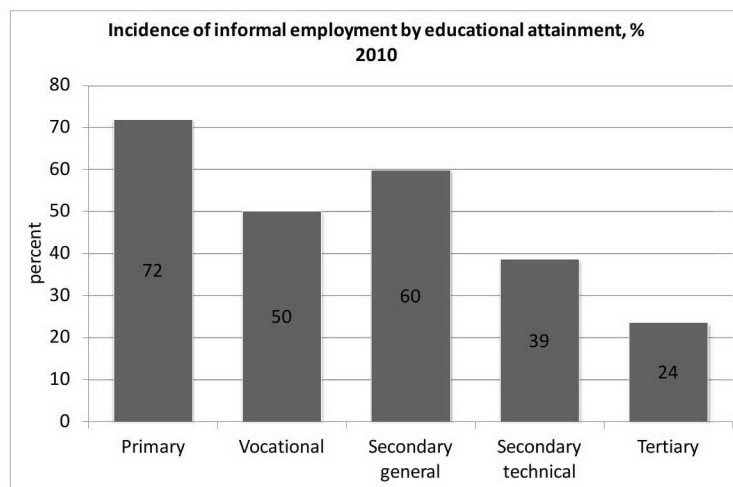
the informal sector.¹³ In contrast, the self-employed in the formal sector (i.e. those with registered businesses) earn, on average, almost twice as much as the self-employed in the informal sector. Such a large earnings differential most likely reflects skills levels, as registered self-employed tend to have higher skills and engage in considerably higher productivity activities than the unregistered (e.g. a freelance lawyer vs. a street vendor). In both cases the difference in total compensation is significantly larger than just the difference in earnings, because formal workers are eligible for benefits to which informal workers are not eligible since they do not pay social security contributions.

40. Low-pay among informal workers is higher compared with formal employees. Table 2 shows that the incidence of low-pay in the informal sector (26 percent) is almost 3 percentage points higher than in the formal sector. In other words, the proportion of low-productivity jobs in the informal sector is somewhat higher than in the formal sector. The difference, although modest, is important because, as we will show later, low-paid workers are often poor.

41. While informal employment is most common among less skilled workers, it is also quite common among university graduates. Figure 16 shows that the informality rate falls with the increase in the skill level. The informality rate among workers with secondary general education is 60 percent, about 40 percent among workers with secondary technical education and 24 percent among workers with tertiary education. The latter figure, although the lowest in the series, is still high in absolute terms, as one out of four university graduates is employed informally. In comparison, in Kazakhstan, the informality rate among workers with a tertiary education is 7.5 percent, half that among workers with secondary technical education, and four times lower than that among workers with secondary general education. Accordingly, the informality rate among graduates in Armenia is high not only in absolute terms, but also in relative terms.

¹³ The formal sector wage premium is still smaller and estimated to be only 3 percent when one controls for worker characteristics (sex, age, educational attainment). See Section IV on wages below.

Figure 16. Informal employment is common even among workers with tertiary education



Note: Employment outside agriculture.

Source: ILCS 2010; Bank staff calculations.

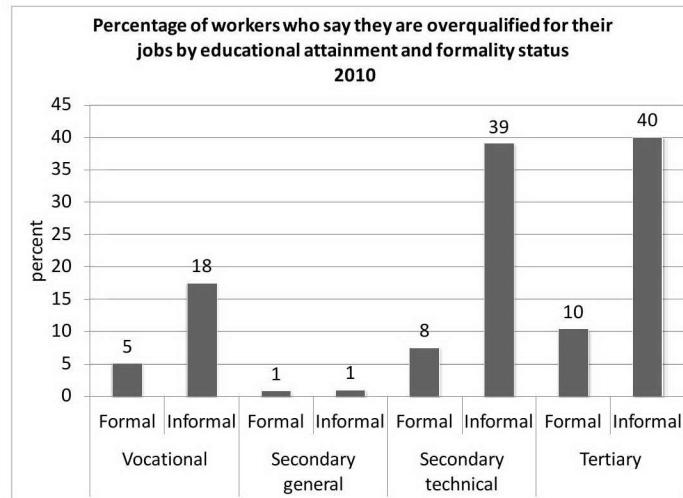
42. A large number of Armenian workers claim to have skills higher than those required in their jobs. In other words, their skills are not fully utilized. Such a phenomenon is known as over-qualification or overskilling. The extent of overskilling varies considerably by educational levels. More educated Armenian workers consider themselves overqualified for their jobs more frequently than less educated workers. For example, the proportion of workers with secondary general education who feel overqualified is negligible. At the same time, the proportion of workers with a tertiary education who fill overqualified exceeds 20 percent. Thus, one university graduate in five has a job in which his/her skills are not fully utilized. Almost 36 percent of workers with a secondary technical education consider themselves over qualified for their current position. These numbers suggest a shortage of skill intensive jobs. The productive potential of Armenian workers is underutilized because of an underdeveloped modern, high value added sector of the economy.

43. Overskilling is more pervasive in the informal than in the formal sector. Figure 17 demonstrates that the percentage of workers who feel overqualified for their jobs is considerably higher for all education types, except for general secondary education in the informal sector. But, workers who possess technical, occupation-specific skills are much more likely to use these skills in a formal job over an informal job. In the informal sector, about 40 percent of overqualified workers have a university degree, compared with 10 percent in the formal sector. A similar pattern exists in the case of workers with secondary technical education.

44. Informal jobs appear to be less skill-intensive than formal jobs in Armenia. This suggests that informal jobs are also of lower productivity than formal jobs. Their skill content is lower and so is the value-added produced. The widespread perception of informal jobs as low skilled also suggests that workers are employed in the sector due to lack of

alternative job opportunities in the formal sector, rather than because they are innately rewarding. In other words, “exclusion” rather than “exit” drives informal employment, especially among high skilled workers. Workers see informal jobs as low-quality, bad jobs even though they do not necessarily pay less than formal jobs.

Figure 17. Overskilling among highly educated workers is common in the informal sector

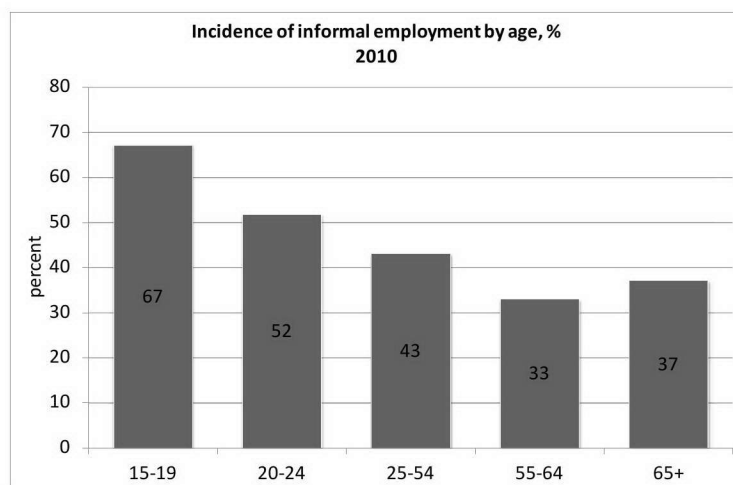


Source: ILCS 2010; Bank staff calculations.

45. The informal sector is often a stepping-stone for youth into formal employment.

Figure 18 shows the incidence of informality falling with age, except for older workers. The informality rate among youth (15-24) is much higher than among prime age workers (25-54). This is a common pattern in many countries. When entry into the formal labor market is difficult, the informal sector provides young workers with an opportunity to obtain initial work experience. As such, informal employment facilitates the entry of young workers into the formal labor market and plays a positive role. The unemployment rate among youth is therefore lower than it otherwise would be without informal employment. This does not imply that informality in Armenia should be maintained. The size of the informal sector is excessive, and as shown in Section I, widespread informality has a detrimental effect on the functioning of the product market and the welfare of workers (see Section V). Accordingly, the way to improve youth employment chances is through enhancing job opportunities in the formal sector by removing obstacles to firm entry and growth. Youth unemployment will be reduced only if more new firms are created, and the existing firms create new jobs.

Figure 18. Informal employment as a stepping stone to regular employment



Note: Employment outside agriculture.

Source: ILCS 2010; Bank staff calculations.

46. The high incidence of low-pay is a reflection of low productivity jobs in Armenia. In Section I we showed that the prevalence of low-paid employment (defined in relative terms) in Armenia is substantially higher than in most European countries. A large number of jobs in Armenia are therefore less productive and pay less than the average job. As already mentioned, the high incidence of low-pay translates into poverty among employed workers. Section V will illustrate that the number of working poor is considerably high.

47. The most striking feature of employment in Armenia is the high incidence of low-pay among well educated workers. Table 2 shows the profile of low-paid workers and low-paid jobs. Fifteen percent of university graduates are low-paid, while 32 percent of workers with secondary technical education receive low-pay. This is in contrast to the pattern in most European countries, where low-paid employment is heavily concentrated among low-skilled workers. However, a similar pattern is observed in the neighboring Georgia. This peculiarity is because many highly educated workers are employed in low wage public sector industries, such as health care and education (see next Section). The incidence of low-pay in the health care sector reaches a staggering 51 percent and 37 percent in the education sector. For comparison, in manufacturing, which is a low-skill intensive industry in Armenia, the incidence of low-pay is much lower at 23 percent. Thus, the industry of employment, and not necessarily the skill level, determines one's earnings. This issue is examined in more detail in the next section.

Table 2. Low paid employment, 2010

Percent		
	Incidence of low-pay	Share in low-paid employment
Location		
Urban	24.1	77.3
Rural	27.0	22.7
Sex		
Men	14.7	36.2
Women	40.5	63.8
Age		
15-19	48.1	1.4
20-24	26.9	10.1
25-54	23.0	66.8
55-64	29.2	19.2
65+	30.8	2.5
Education		
Primary	39.5	7.7
Vocational	32.1	3.3
Secondary general	27.3	35.7
Secondary technical	31.5	32.7
Tertiary	14.8	20.7
<i>Formality (non agricultural)</i>		
Formal	23.6	55.7
Informal	26.2	44.3
Activity (selected)		
Manufacturing	23.3	8.7
Trade	23.3	13.5
Transport	19.0	5.1
Education	36.7	21.8
Health and social services	50.8	14.7

Note: Low pay = monthly earnings less than 67% of the median.
Source: ILCS 2010; Bank staff calculations.

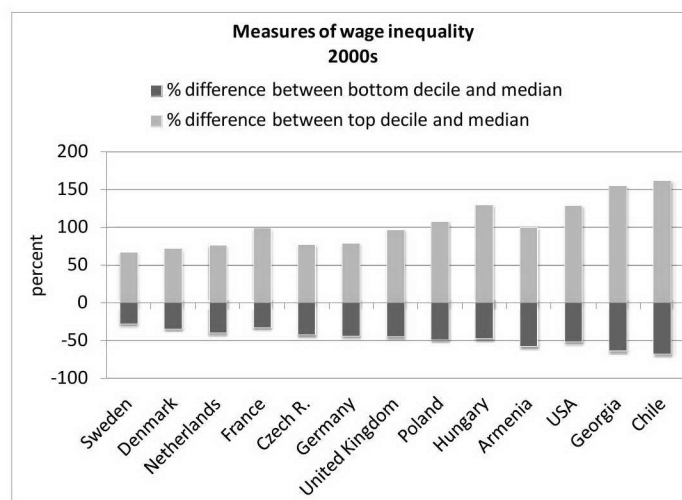
IV. Wage Structure

48. **Besides employment, wages determine household incomes and thus, poverty.** This section examines the wage distribution in Armenia, and the determinants of the wage structure. We find that wage inequality is relatively high in Armenia, but still within the range observed in Europe. Education is an important factor influencing one's wage, but so is industry's affiliation. Finally, men earn significantly more than women with similar characteristics.

49. **Wage inequality is relatively high in Armenia.** A commonly used measure of wage dispersion is the decile ratio, which is the ratio of the top decile wage compared to the bottom decile wage, or the high wage to the low wage. In Armenia, the decile ratio is 4.7, meaning top paid workers earn 4.7 times as much as low-paid workers. This is higher than in Poland and Hungary, which are the two EU new member states characterized by high wage inequality, and where the decile ratios amount to 4.1 and 4.4, respectively. In low wage inequality European countries, such as Denmark or the Netherlands, the decile ratio is less than three, and in the moderate inequality EU countries, such as Germany or the UK, the ratio ranges between three and four. Against the European backdrop, wage inequality is high in Armenia. However, in a broader international perspective, wage inequality in Armenia is more modest. In the neighboring Georgia the decile ratio reaches 7, and is 7.8 in Chile, indicating extremely high wage inequality. Thus, the judgment as to whether wage inequality in Armenia is high depends on the benchmark being applied.

50. **Inequality in Armenia is driven by low rather than high wages.** The relative wage status of low-paid workers is particularly poor in Armenia. In other words, workers at the bottom of the wage distribution earn much less than workers in the middle (Figure 19). In Armenia, the bottom decile worker is paid 57 percent less than the median worker. For comparison, in the UK the bottom decile worker earns 45 percent less and in Denmark only 34 percent less than the median worker. Even in the US, which has high inequality, the relative position of the bottom decile worker is better than in Armenia. In contrast, the relative wage status of highly paid workers is in the middle of the international range. The top decile worker in Armenia earns twice as much as the median worker, which is similar to the UK or France, and less than in Poland and Hungary (countries with lower overall wage inequality). The pattern of wage distribution in Armenia has a detrimental effect on poverty. From a poverty perspective, collapsing bottom wages (as in Armenia) are worse than flying top wages (as in Hungary). The low relative wages of workers at the bottom of the wage distribution contribute to the existence of a large group of working poor in Armenia (see the next section).

Figure 19. Wage inequality is relatively high in Armenia



Note: Countries are ranked by the decile ratio, i.e. the ratio of the top decile to the bottom decile of wages.

Source: ILCS 2010 for Armenia, HBS 2010 for Georgia, ILO Global Wage Report 2008/09 for remaining countries.

51. Wage distribution in the public sector is more unequal than in the private sector in Armenia. Generally, wages in the private sector are more dispersed than in the public sector. The public sector typically applies a wage grid and is influenced by trade unions. This is apparently not the case in Armenia. The decile ratio in the public sector is 4.7 compared with 4.0 in the private sector (Table 3). In the public sector, the bottom decile workers are particularly affected, earning only 44 percent of the sector’s median wage, while in the private sector bottom decile workers earn 50 percent of the median (Table 3). Moreover, the bottom decile public sector worker earns less than his/her private sector counterpart not only in relative but also in absolute terms (about 14 percent). One potential explanation is the large number of low-paying jobs in some segments of the public sector, especially in the education and health industries (see Figure 22 below).

52. Wages in the informal sector are less dispersed than in the formal sector. The decile ratio in the formal sector is 4.9 compared with 4.3 in the informal sector (Table 3). Informal sector jobs may be more homogeneous than formal sector jobs in terms of skill requirements and productivity. If jobs within a sector are similar (e.g. all require low skills) then they also pay similar wages, which produces a compressed wage distribution.

Table 3. Summary of wage distribution by sector, 2010

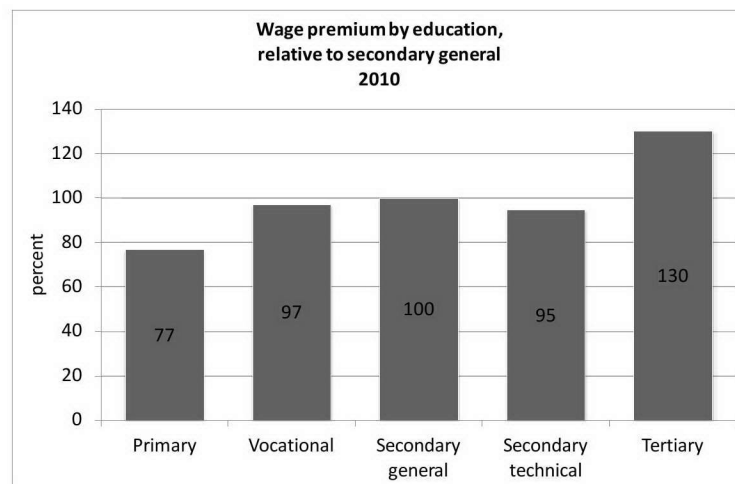
	National economy	Sector			
		Public	Private	Formal	Informal
P10	42.9	44.1	50.0	44.0	50.0
P90	2.0	2.1	2.0	2.1	2.2
Decile ratio	4.7	4.7	4.0	4.9	4.3

Source: ILCS 2010; Bank staff calculations

53. Wage dispersion is driven by differences in worker and job characteristics. In Armenia, as elsewhere, the two most important determinants of wages are education and industry affiliation. All else equal, better-educated workers earn more than the less educated. And some industries pay much better than others. Additionally, gender is an important factor, as women earn much less than men in similar jobs. Obviously, there are other factors that influence wages, but their impact is less pronounced.

54. The best way to increase one’s expected wage is to invest in tertiary education. On average, Armenian workers with a tertiary education earn 30 percent more than those with secondary general education (Figure 20). This is a significant although moderate differential. In some transition economies, the wage premium to tertiary education is considerably higher (World Bank 2012). For example, in Poland, university educated workers earn on average 60 to 70 percent more than workers with secondary general education. The relatively modest premium to tertiary education in Armenia suggests that the supply of workers with tertiary education is high relative to the demand.

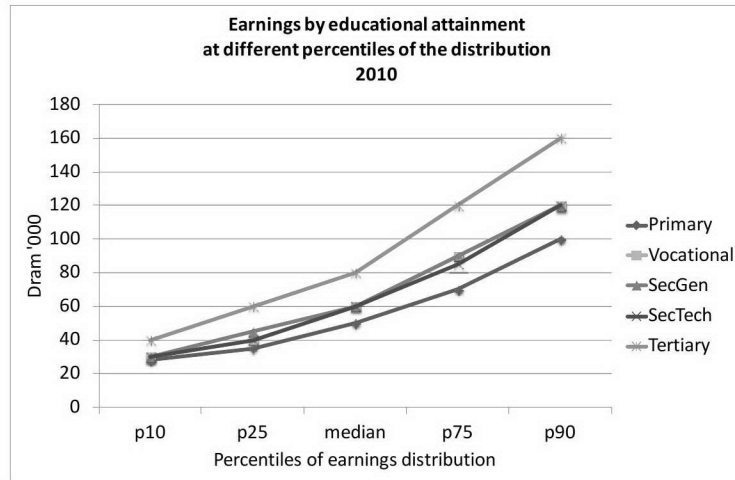
Figure 20. On average, tertiary educated workers earn 30 percent more than secondary educated workers



Source: ILCS 2010 for Armenia, HBS 2010 for Georgia, ILO Global Wage Report 2008/09 for remaining countries.

55. The premium to tertiary education is particularly high at the top of the pay scale. The wage differential between the top paid (upper decile) worker with tertiary education, and the top paid worker with secondary education is much larger than between their low-paid (bottom decile) counterparts (Figure 21). However, it is the absolute differences in wages that increase when one moves along the wage distribution, whereas the relative differences remain roughly constant.

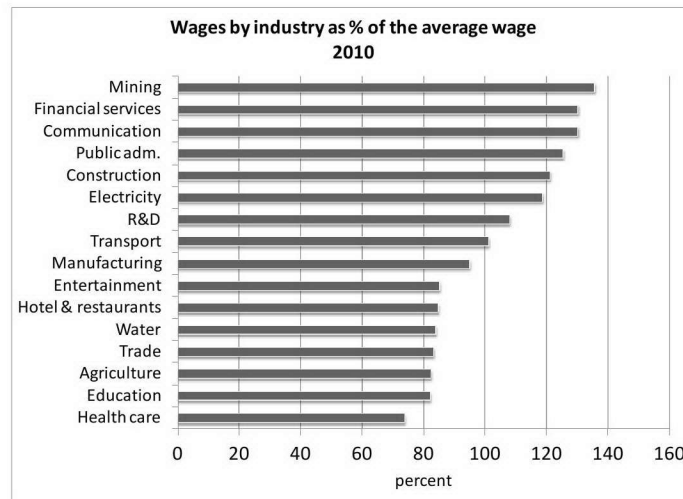
Figure 21. Premium to university education is the highest at the top of the pay scale



Source: ILCS 2010 for Armenia, HBS 2010 for Georgia, ILO Global Wage Report 2008/09 for remaining countries.

56. Industry affiliation affects wages independently of education. Wages differ considerably by industry in Armenia, and this variation does not necessarily reflect the skill intensity required (Figure 22). Compare financial services or the communication industry to the education or health care industry. While all have a high density of university graduates, wages in the former group of industries are much higher than in the latter. For example, the average wage in the communication and information industry is nearly 60 percent higher than in the education industry. Accordingly, the choice of occupation and the industry of employment matters as much for one’s wage as the choice of education level.

Figure 22. Low wages in skill intensive social services



Source: ILCS 2010 for Armenia, HBS 2010 for Georgia, ILO Global Wage Report 2008/09 for remaining countries.

57. Regression analysis provides additional insights into wage determination in Armenia. The main merit of the regression analysis is that one can determine the

independent effect of an explanatory variable, holding all other variables constant. We examined the effect of the following explanatory variables: years of schooling, overqualification, sex, ownership (public vs. private), formality, and location (urban vs. rural), and contract type (permanent vs. temporary). We also controlled for industry affiliation. The regression results are as follows (full results are reported in the Annex).

- a. The rate of **return to schooling** is about 8 percent in Armenia. This means that each additional year of schooling raises one's wage by 8 percent. This is quite typical of the more advanced transition economies, where the rate of return to schooling is clustered in the 6 to 9 percent range (World Bank 2012). Investment in education pays off in Armenia.
- b. Workers who claim they are **overqualified** for their jobs earn 17 percent less than similar workers who say their skills match the job requirements. This is an objective validation of the subjective perception of overskilling. Overqualification carries with it a tangible cost in terms of lower wages.
- c. All else being equal, **men** earn 46 percent more than **women**. This is a clear sign of discrimination against women. The female wage gap in Armenia is substantially higher than in EU countries. For example, in Slovakia or Poland it is about 20 percent.
- d. **Public sector** workers earn wages about 5 percent lower than similar private sector workers.
- e. **Formal sector** workers earn wages about 4 percent higher than similar informal sector workers.
- f. **Urban** workers earn about 3 to 4 percent more than rural workers with similar jobs.
- g. Workers with **temporary contracts** earn 17 percent less than similar workers with permanent contracts.

V. Labor Market Outcomes and Poverty

58. Labor market outcomes have a crucial impact on the risk of poverty faced by both individuals and households in Armenia. The incidence of poverty is particularly high among the urban unemployed, but also among low-paid workers. Informal jobs often do not prevent poverty. As a result, Armenia has a large number of working poor. The high work intensity of the household is critical for avoiding poverty, however a large proportion of households in Armenia are characterized by low work intensity. Furthermore, many households have low earning potential – another critical factor influencing the risk of poverty. On a positive side, households with low earning potential tend to be more work intensive, thus maintaining their income.

59. Expectedly, unemployment substantially elevates the risk of poverty. What is more surprising is that discouraged workers – those who ceased searching for jobs - are almost as likely to be poor as the unemployed in Armenia. Discouraged workers are significantly more likely to be poor than the inactive, although formally both groups are classified as out of the labor force. Put differently, discouraged workers are more similar, in terms of their income status, to the unemployed than to the inactive. Almost 30 percent of the unemployed and 27 percent of the discouraged are poor, compared with 16 percent of the employed (Table 4). The poverty rate among the inactive is 20 percent, significantly lower than among the unemployed and the discouraged. These results suggest that the augmented unemployment rate, which factors in the phenomenon of discouragement, could be a more valid indicator of labor market outcomes from the poverty perspective.

60. The risk of poverty faced by the employed, although much lower than that faced by the jobless, is still non-negligible. As a result, the employed are the dominant group among the poor in Armenia. Close to 40 percent of all poor are working poor (Table 4). The unemployed and the discouraged jointly account for 27 percent of the poor (the rest being the inactive). Accordingly, efforts to reduce poverty in Armenia should go beyond helping the jobless, and should extend to supporting the creation of productive, better paying jobs. Without accelerating the pace of job creation in the high value-added sectors of the economy, narrowly targeted policies to reduce poverty will have a limited impact.

Table 4. Labor force status and poverty, 2010

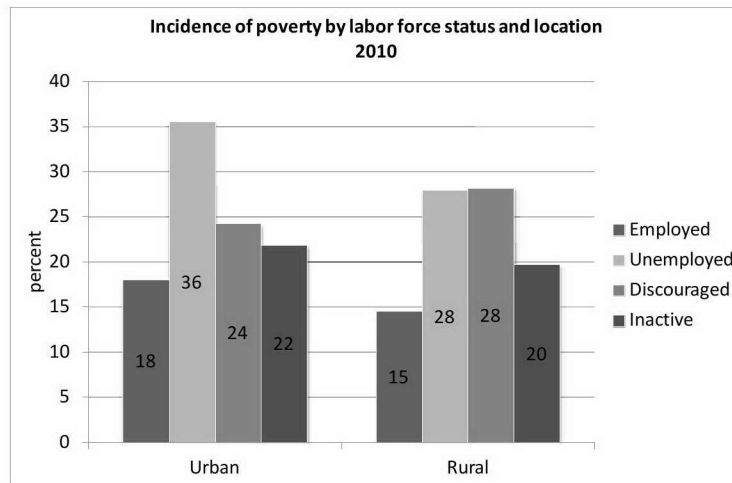
<i>Percent</i>		
Labor force status	Incidence of poverty	Share in poverty
Employed	16.2	38.8
Unemployed	28.9	16.2
Discouraged	27.2	11.1
Inactive	20.3	33.9

Note: Persons are categorized as poor if they are in the bottom quintile of consumption (per equivalent adult) distribution.

Source: ILCS 2010; Bank staff calculations.

61. **The incidence of poverty is particularly high among urban unemployed.** As many as 36 percent of the urban unemployed are poor, compared with 28 percent of the rural unemployed (Figure 23). Surprisingly, discouraged workers are more likely to be poor in rural areas than in urban areas. Both in urban and rural areas, the unemployed are roughly twice as likely to be poor as the employed.

Figure 23. Urban unemployed face a particularly high risk of poverty

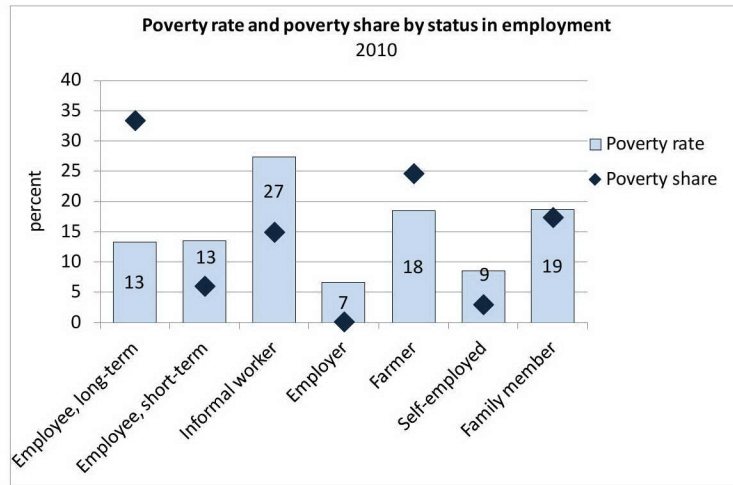


Source: ILCS 2010; Bank staff calculations.

62. **Of the employed, the poverty rate is especially high among informal workers.** It is also high for farmers and contributing family members. The poverty rate is the lowest among the self-employed, although this is a relatively small group of workers in Armenia. The incidence of poverty among informal workers is 27 percent, twice as high as among formal workers (Figure 24).¹⁴ Thus, informality is an important factor behind the high percentage of working poor in Armenia.

¹⁴ Figure 24 presents the status in employment as defined by the workers themselves (the subjective criterion). This specifically refers to informal workers. In contrast, Table 6 presents the poverty rate for informal workers outside agriculture with informality determined on the basis of the objective criterion (eligibility to core benefits).

Figure 24. Informal workers are most likely to be poor



Source: ILCS 2010; Bank staff calculations.

63. In addition to informality, a number of worker and job characteristics increase the likelihood of poverty. These include low educational attainment and lack of technical skills, having a contingent (as opposed to regular) job, and – expectedly – having a low-paid job. Other characteristics, such as sex and urban/rural location, play a lesser or negligible role. For example, men are somewhat more likely to be poor than women, but the difference is not significant (Table 5).

64. A strong relationship exists between educational attainment and the probability of being poor. Not surprisingly, workers with tertiary education are the least likely to be poor, while workers with primary education are the most likely. However, workers with a secondary general education are much more likely to be poor than workers with a secondary technical education; the probability of poverty being 21 and 13 percent, respectively (Table 5). Workers with secondary education who have technical, occupation-specific skills face a significantly lower risk of poverty than those with no technical skills. The market value of general secondary education is rather low in Armenia—a characteristic it shares with most other FSU countries where general education was given more prominence than vocational and technical education (World Bank 2012).

Table 5. Worker characteristics and poverty, 2010

<i>Percent</i>		
Worker characteristics	Incidence of poverty	Share in poverty
<i>Sex</i>		
Men	16.5	55.2
Women	15.9	44.8
<i>Age</i>		
15-19	22.0	2.4
20-24	14.9	7.7
25-54	16.7	70.0
55-64	15.2	14.8
65+	13.4	5.1
<i>Education</i>		
Primary	24.7	13.3
Vocational	15.0	2.5
Secondary general	20.8	55.2
Secondary technical	13.2	18.6
Tertiary	7.5	10.5

Note: Persons are categorized as poor if they are in the bottom quintile of consumption (per equivalent adult) distribution.

Source: ILCS 2010; Bank staff calculations.

65. In-work poverty is associated with low-productivity employment. As previously mentioned, informal workers are more likely to be poor than formal ones. Furthermore, workers holding contingent jobs (such as fixed-term or temporary jobs) are more likely to be poor than those with permanent jobs. For example, the poverty rate among workers with fixed-term contracts is as much as 10 percentage points higher than among those with permanent contracts (Table 6).

66. In-work poverty is often a consequence of having a low-paid job. The poverty rate among low-paid workers is 21 percent. When one moves from a low-paid job to a middle-paying job, the risk of poverty falls by 7 percentage points (Table 6). While the high incidence of poverty among low-paid workers is not surprising, it is not inexorable. Low-paid workers tend to be poor when they are primary earners, but not necessarily when they are secondary earners (e.g. spouses or young workers living with their parents). However, in Armenia nearly 40 percent of all low-paid workers are household heads, or primary earners. The high share of primary earners in low-paid employment amplifies the effect that low-productivity jobs have on poverty.

Table 6. Job characteristics and poverty, 2010

Percent

Job characteristics	Poverty incidence	Share in poverty
<i>Location</i>		
Urban	19.7	64.2
Rural	20.2	35.8
<i>Formality (outside agriculture)</i>		
Formal	11.9	26.4
Informal	18.6	73.6
<i>Sector</i>		
Agriculture	19.3	46.1
Industry	18.5	19.9
Market services	14.8	18.2
Public services	10.4	15.3
<i>Job type</i>		
Permanent	14.5	72.1
Fixed term	24.2	6.8
Seasonal	22.4	18.6
Causal	29.2	2.5
<i>Full- vs. part-time</i>		
Full-time	15.6	58.8
Part-time	19.4	31.9
<i>Wage category</i>		
Low	21.5	37.1
Middle	14.4	54.9
High	5.6	8.1

Low wage \leq .67 median wage

Middle wage \leq 1.5 median wage

High wage $>$ 1.5 median wage

Note: Persons are categorized as poor if they are in the bottom quintile of consumption (per equivalent adult) distribution.

Source: ILCS 2010; Bank staff calculations.

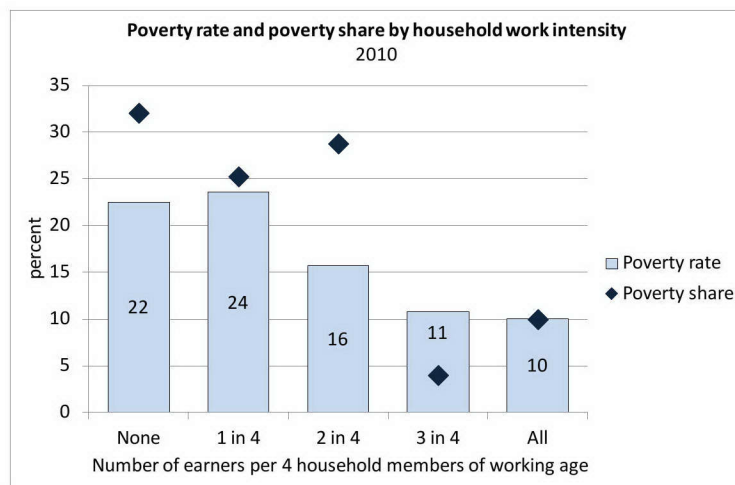
67. Finally, employment in agriculture often does not generate earnings sufficient to lift the household out of poverty. One in five agricultural workers is poor (Table 6). However, the poverty rate among workers employed in industry is only marginally lower (18.5 percent). This is astonishing because industry, in general, is more productive than agriculture and thus generates higher earnings. The explanation may lie in the fact that work intensity (the number of earners) in agricultural households may be higher than in industrial households. Nonetheless, improvements in agricultural productivity and the reallocation of jobs from agriculture to higher value-added activities are key to poverty reduction in Armenia.

68. The income status of the household depends on two factors: work intensity and earning capacity. The household's work intensity is defined as the proportion of household's members of working age who are employed. The household's earning capacity

is defined as total earnings per one household member of working age. Below we analyze the impact of both factors.

69. Households with low work intensity are considerably more likely to be poor than households with high work intensity. The poverty rate among households where only one out of four persons of working age is employed is 24 percent, more than twice as high as in households with the majority of household members employed (Figure 25). Only 10 percent of households where all members of working age are employed fall into the bottom quintile of the consumption distribution. This again proves that access to jobs is critical for avoiding poverty.

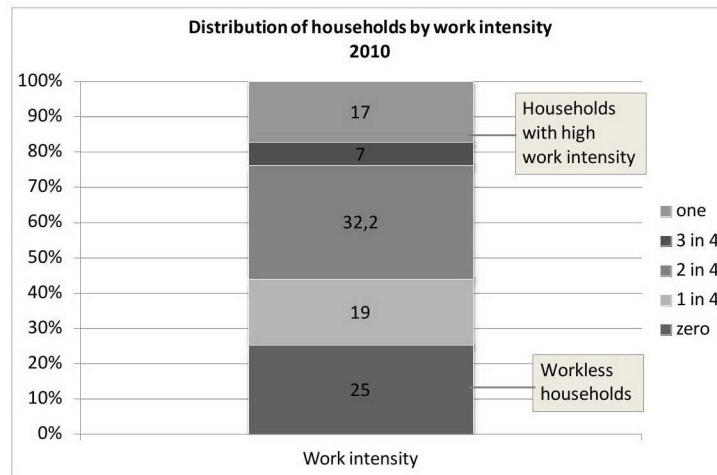
Figure 25. High work intensity of the household greatly reduces the risk of poverty



Note: Work intensity = the proportion of household members of working age (15+) who are employed.
Source: ILCS 2010; Bank staff calculations.

70. Unfortunately, a large number of households in Armenia have low work intensity. Figure 26 shows that as many as 44 percent of all households in Armenia are characterized by low work intensity, 25 percent of these are jobless. These households account for the majority (57 percent) of all poor households. One-third of all households in Armenia have one out of two members of working age working. The poverty rate among these households is 16 percent, and they account for nearly 30 percent of all poor households.

Figure 26. A high share of households with low work intensity

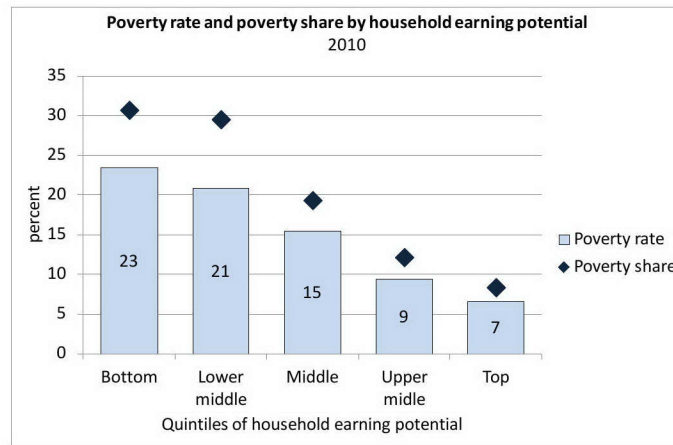


Source: ILCS 2010; Bank staff calculations.

71. Earning capacity of the household has a critical impact on poverty status.

Households with the lowest earning capacity (bottom quintile) are over three times more likely to be poor than households with the highest (top quintile) earning capacity (Figure 27). The likelihood of poverty varies considerably among households around the middle of the earnings distribution, as well. Households with lower-middle earning capacity are over two times more likely to be poor than households with upper middle earning capacity. A household moving from lower-middle to the middle earning capacity category reduces its risk of poverty by 6 percentage points, from 21 to 15 percent. Accordingly, there are potentially significant returns to investments in human capital, which enhance the earning capacity of the household. However, the availability of productive job opportunities is critical for this potential to materialize.

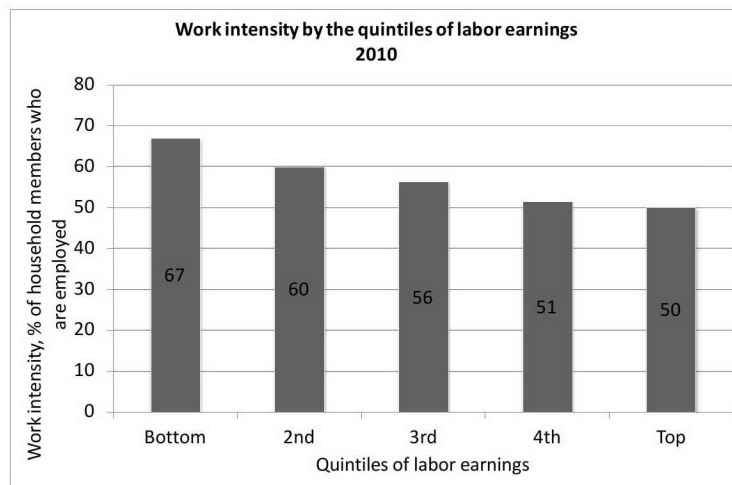
Figure 27. The risk of poverty falls sharply with the increase in household’s earnings capacity



Note: Earning potential = total labor income earned by the household (excluding farming) per employed household member.
 Source: ILCS 2010; Bank staff calculations.

72. Households compensate for low earning capacity by increasing work intensity. Figure 28 shows that work intensity falls – although mildly - with the increase in earning capacity. On average, two-thirds of household members of working age are employed in households with the lowest earning capacity, while only half of household members are employed in households with the highest earning capacity. In short, poorer households work more. This somewhat lessens income differences among households and reduces poverty. Families with low earning capacity increase labor supply in order to avoid poverty. To some extent, work intensity and earning capacity act as substitutes. Households with low earning capacity have to supply more labor to escape poverty. Households with high earning capacity can supply less labor without falling into poverty.

Figure 28. Households with low earning capacity increase work intensity



Source: ILCS 2010; Bank staff calculations.

VI. Conclusions and Policy Implications

73. **Poor labor market outcomes are an important cause of poverty in Armenia.** High unemployment, inactivity, and low-paid employment significantly reduce social welfare. Poor labor market outcomes in Armenia are due to few job opportunities, a skills mismatch, and an underdeveloped job matching system. First and foremost, the slow pace of job creation and the scarcity of productive job opportunities limit growth. Second, many of the unemployed have only generic skills, lacking the technical, occupation-specific skills demanded by employers. As a result firms, especially modern ones, frequently cannot find workers with the required skills. There are skill shortages despite high unemployment. Finally, few unemployed use public employment services, but still fewer employers post job vacancies. The (registered) unemployment to vacancies ratio is very high, which limits the scope for effective job placement services.

74. **Accordingly, the policy to improve labor market outcomes should rest on three pillars: productive jobs, adequate skills and effective job-worker matching.** The employment promotion policy should aim at strengthening *labor demand*, enhancing the quality of *labor supply*, and improving the *matching* of supply with demand. Strengthening labor demand is the first priority. The economy needs to create more jobs in order to absorb the surplus labor. Improving workforce skills is the second priority, helping to overcome skill shortages faced by modern firms, and thus contributing to the creation of productive jobs. The availability of a skilled workforce is also an important factor attracting investment in the modern sector of the economy. Efficient matching of workers with jobs is the third priority. High quality job matching services can shorten the duration of unemployment (and thus lower the unemployment rate), and improve the allocation of labor. Their impact is conditioned by the availability of job openings. Moreover, job-matching services help the labor market to function more smoothly. However, their role is mainly complementary as they have a limited effect on the overall level of employment and unemployment.

75. **It should be stressed that effects from pursuing the above policy priorities will not be immediate, but instead will materialize only in the medium-to long-term.** It should also be stressed that these priorities represent necessary conditions for increasing employment and reducing unemployment, but may not be sufficient. Ultimately, employment growth depends on long-term output growth, which is influenced by a range of factors that lie beyond the labor market, including external economic conditions.

76. **Strengthening labor demand and creating productive jobs.** In order to increase employment and reduce unemployment, Armenia needs to support the creation of new, productive jobs in the modern sector of the economy. Existing firms need to grow and expand employment and, equally important, new firms need to enter the market. Research shows that newly established firms create a substantial proportion of all new jobs, and thus firm entry is critical for employment growth (World Bank 2005). Investment is also crucial for the creation of more skill intensive and productive jobs. Improvements in the business environment and the investment climate are necessary for Armenian firms to expand, invest and attract foreign

direct investment. One key challenge in this area is to level the playing field for different types of firms by addressing anti-competitive practices and improving incentives for formality. As noted earlier, improvements in the investment climate may not be sufficient to induce employment growth in the short-term, but are a necessary and essential part of a strategy to enhance job opportunities.

77. Enhancing labor supply and improving workforce skills. The main challenge is to ensure that workers have skills needed in the newly created modern jobs. This requires the development of a flexible education system that is responsive to changing labor market needs. An essential feature of such a system is its ability to identify required skills. Involving employers in the designing of curricula is one important way to meet this objective. Another important feature is the existence of a well functioning quality assurance mechanism. Students and employers need to be able to assess the quality and relevance of education provided by a given institution. One option that strengthens accountability is “school scorecards” that include basic indicators on a school’s performance. Again, educational system reform is not likely to produce short-term employment effects. But, a high quality education system is necessary to support the development of the modern, high value-added sector of the economy.

78. Improving job-worker matching by strengthening Public Employment Services. For the labor market to perform efficiently employers need to be able to quickly fill vacancies, and the jobseekers need to find jobs that match their skills. The role of employment services is to facilitate the best job-worker matches. Employment services can also reduce a skills mismatch, especially shortage of some type of skills, by providing necessary training.¹⁵ Public Employment Services (PES) play an important role in this respect, although their activity can and should be complemented by private employment agencies. A good reputation both among employers and jobseekers is a prerequisite for PES effectiveness. Employers need to believe that PES will help them to find the right workers; jobseekers need to believe that PES will help them to find the jobs they desire. The vacancy penetration ratio – the proportion of all job vacancies that are reported to PES – is the most important determinant of PES performance. A high vacancy penetration ratio means that PES are able to reach out to the employers’ community and that employers are satisfied with the services that they provide. At the same time, the high vacancy penetration ratio means that PES can maximize the number of unemployed successfully placed to jobs. If the vacancy penetration ratio is low, then the unemployment to vacancies ratio is high, which automatically limits the job placement rate. Naturally, achievement of a high vacancy penetration ratio and high job placement rate – the main indicators of PES effectiveness – requires adequate investments in building capacity to provide high quality job intermediation services (including job counseling and training). Developing such capacity would be an important component of a policy to improve labor market performance in Armenia. More effective job-worker matching would reduce the duration of unemployment spells, and thus contribute to lowering the unemployment rate. Although the effects of improving the quality of PES on employment and

¹⁵ PES as a rule do not provide training directly but refer to and finance training provided by specialized institutions selected on a competitive basis.

unemployment should not be overestimated, well functioning PES play an important part in improving labor market performance.

Annex

Results of earnings regressions

Dependent variable: log monthly labor earnings (learn)

Vocational	0.22*** (4.28)	0.21*** (4.19)	0.20*** (4.11)
Secondary general	0.23*** (7.18)	0.23*** (7.03)	0.20*** (6.50)
Secondary technical	0.25*** (7.75)	0.25*** (7.52)	0.23*** (7.14)
Tertiary	0.57*** (17.39)	0.57*** (16.86)	0.55*** (16.62)
Age	0.02*** (6.54)	0.02*** (6.52)	0.02*** (6.78)
Age^2	-0.00*** (-6.70)	-0.00*** (-6.68)	-0.00*** (-6.79)
Male	0.49*** (36.05)	0.49*** (34.82)	0.37*** (23.46)
Urban	0.05*** (3.32)	0.04*** (2.76)	0.04** (2.49)
Public		-0.06*** (-3.81)	-0.04* (-1.94)
Formal		0.07*** (3.63)	0.03 (1.60)
Temporary			-0.18*** (-5.36)
Industry dummies	No	No	Yes

c	9.98*** (126.79)	9.98*** (126.50)	9.94*** (114.62)
Observations	4846	4846	4846
R2	0.26	0.26	0.33
t-statistics are in parentheses			
* p<0.10, ** p<0.05, *** p<0.01			

School	0.08*** (22.87)	0.08*** (22.54)	0.08*** (22.24)
Age	0.02*** (6.41)	0.02*** (6.56)	0.02*** (6.65)
Age^2	-0.00*** (-6.59)	-0.00*** (-6.57)	-0.00*** (-6.69)
Male	0.49*** (35.14)	0.38*** (23.85)	0.37*** (23.74)
Urban	0.04*** (2.72)	0.04*** (2.71)	0.04*** (2.60)
Public	-0.06*** (-3.74)	-0.04* (-1.88)	-0.04* (-1.95)
Formal	0.06*** (3.45)	0.04** (2.27)	0.03 (1.46)
Temporary			-0.18*** (-5.35)

Industry dummies	No	Yes	Yes
c	9.24*** (105.27)	9.13*** (97.16)	9.19*** (97.03)
Observations	4846	4846	4846
R2	0.26	0.32	0.32

t-statistics are in parentheses
* p<0.10, ** p<0.05, *** p<0.01

School	0.09*** (24.00)	0.09*** (23.66)
Age	0.02*** (6.60)	0.02*** (6.70)
Age^2	-0.00*** (-6.74)	-0.00*** (-6.66)
Male	0.49*** (35.51)	0.38*** (24.08)
Urban	0.04*** (2.84)	0.04*** (2.72)
Overskilled	-0.20*** (-7.45)	-0.19*** (-7.15)
Public	-0.08*** (-4.59)	-0.05** (-2.21)
Formal	0.05** (2.57)	0.03* (1.77)

Industry dummies	No	Yes
c	9.19*** (104.83)	9.08*** (96.53)
Observations	4846	4846
R2	0.27	0.32
t-statistics are in parentheses		
* p<0.10, ** p<0.05, *** p<0.01		

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